High Flow Oxygen Nursing Management in Infants and Children

Observation and Assessment

1. Children aged 0-14 years who are admitted to the TPCH Children’s Ward will have a full clinical work up and management plan completed in the Children’s Emergency Department.

2. When staff member arrives in TPCH Children’s Emergency Department for handover a full clinical assessment and a baseline set of vital signs will be required. This will include primary, secondary and respiratory assessments.

3. At handover in the Children’s Emergency Department all paperwork including age appropriate CEWT (Children’s Early Warning Tool) sheet, Respiratory Observation Chart, Medication Chart, Fluid Order Form, 24 Hour Fluid Balance Sheet and a medical management plan should be present if possible.

4. However in order for the Children’s Emergency Department to meet their NEAT targets this paperwork may need to be completed once the child has arrived to the ward. There still must be a clear plan as to what care the patient is required to receive.

5. When the child arrives onto the ward a full nursing history assessment must be obtained preferably from the parent or caregiver in order to identify the child’s medical background.

6. Respiratory observations will need to be performed hourly.

7. These observations will need to be documented on the age appropriate CEWT Sheet and the CEWT Respiratory Adjunct Tool.

8. Children with oxygen therapy should be on continuous pulse oximetry monitoring.

9. If weaning oxygen, observations are to be performed 30 minutes after the first wean and then continue hourly unless weaned to room air and
then observations continue hourly for 2 hours and then second hourly if stable.

10. High flow patients do not usually require 1:1 patient to nurse ratio. Patient to nurse ratio needs to be assessed on the acuity of the high flow patient and the other patients on the ward at the time.

Management

1. Nursing Staff from TPCH Children Services Inpatient Ward will need to follow the management plan outlined by the medical team which will be in the child’s medical chart.

2. Doctors are to assess the child to determine the rate of flow for the high flow oxygen.

3. Doctors must document the acceptable parameters for which to set the flow rate and FiO2. If oxygen saturations are below acceptable limits please notify the registrar.

4. If child scores a CEWT score 4-5 nursing staff will need to contact the registrar to review within 30 minutes. If review does not occur within 30 minutes the consultant is to be contacted.

5. If child receives a CEWT Score between 6-7 the registrar is to be contacted to review patient within 15 minutes. If this does not occur then an emergency call is to be initiated by calling 333.

6. If patient’s CEWT score is <3 but nursing staff are concerned please call the registrar.

7. It is important to encourage oral intake and any concerns must be discussed with medical staff. Supplemental fluids by either enteral or parenteral routes may need to be considered in order to keep the child hydrated.

Equipment and Paperwork Required

1. Equipment needed to set up airvo is the circuit, prongs, Water for injection bag and the Airvo attached to the IV pole.

2. You will need access to a power point as the Airvo does not run on a battery.

3. You will need nasal prongs of the age appropriate size. These come in 3 sizes: Infant, Paediatric and medium size adult for our older children. The nasal prongs need to fit quite snug in the nares.

4. The paperwork that will be required along with all the admission paperwork will be a CEWT Observations Sheet and CEWT Respiratory Adjunct Tool.

Set up and Operation of the Airvo

1. Place Airvo circuit into Airvo as shown on instruction cards.

2. Hang Water for injection bag and spike bag with Airvo tube.

3. Connect age appropriate size nasal prongs to correct Airvo tube.

4. Ensure Airvo is connected to a power supply. The Airvo does not run on a battery and if connected to the patient should be turned on at the power supply at the wall.

5. To turn on the Airvo please hold the “on” button down for 3-5 seconds until you hear a high pitched sound and see the “Fisher and Paykel
Healthcare” sign come up on the screen as shown in the diagrams across.

6. The Airvo will then go through its self checks which should only take a minute or so. It will tell you when it was last cleaned.

7. The next screen will tell you what mode the Airvo is in. If the butterfly and bird are displayed this indicates that the Airvo is in the paediatric setting. Therefore air flow will be a minimum of 5L to a maximum of 20L. If the Airvo is in adult setting the screen will not have any pictures and flow rate will be 20L-50L.

8. **To change between adult and paediatric mode**, place finger on the “play- triangle” button and hold down for approximately 3-5 seconds.

9. To indicate that the mode has changed the Airvo will make a high pitched sound and the screen will display “New target settings”. The Airvo will then operate in its new mode and it will indicate the new mode by either displaying the butterfly and bird (paediatric mode) or have no pictures (adult mode).

8. **To change the flow rate**: Press the “play- triangle” button once (no need to hold down).

9. Your temperature gauge will come up first. Press “play” button again and this will indicate your flow rate.

10. **To unlock and change the flow rate** please hold down the up and down buttons together (at the same time) for 3-5 seconds. The Airvo will make a high pitched sound when it has unlocked and the lock symbol will disappear.

11. The new screen will appear with 5-20 on it please use the up and down buttons to either increase or decrease your litres of flow. This can only be done in 5L increments.

12. To lock the litres in, just press the “play” button it will then go across to the percentage of oxygen and press button again to return to main screen or it will just automatically lock after about 5 seconds.

13. The percentage of oxygen can be titrated from the flow outlet attached to the wall.

14. When the Airvo is operating correctly it will have a tick symbol with a circle around it displayed on the screen.

15. Once the flow rate has been set and the FI02 has been established please then apply the nasal prongs to the patient.

**Infection Control**

1. Droplet and contact precautions are required for infants with respiratory illnesses, therefore don appropriate PPE as necessary.

**Feeds, Fluids and Elimination**

1. Infants on high flow oxygen may be offered supplemental fluids by either enteral or parenteral routes.

2. The medical team is required to write either a feed order or intravenous therapy order on the appropriate documents according to the hydration status of the child or as outlined in Children’s Health Services Procedure Acute Bronchiolitis Management in Infants.
3. If the infant is on intravenous fluid therapy, serum electrolytes should be done at least every second day.
4. It is important for staff to document fluid intake and output on a 24 Hour Fluid Balance sheet and complete a Feeding Chart. If the child is on continuous feeds or intravenous therapy the fluid status should be recorded hourly.
5. 24 Hour Fluid Balance sheets should be sub-totalled every four hours to allow for early intervention if a child is dehydrated or overloaded with fluid.

Education to staff and parents
1. It is important for all staff to cluster patient cares and minimise handling of the patient in order to promote healing. Staff members need to encourage parents to do the same.

Discharging the patient
1. Discharge planning must commence at the beginning of the admission to ensure clear expectations and goals for all parties involved including nursing and medical staff and the family.
2. When medical staff give instructions to discharge the child the following criteria must be met:
   - Maintaining oxygen saturation of >93% in room air
   - Able to maintain adequate oral intake to maintain hydration
   - Minimal or no increased work of breathing
   - Discharge script for discharge medications provided
   - Parent/caregiver sufficiently educated and informed
References


The Prince Charles Hospital Children’s Health Services (2013) Bronchiolitis WUG.

MARKETING/ COMMUNICATION
Marketing/ Communication Responsibility
Marketing/ Communication Strategy

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Level of Risk Medium
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Audit Tool Attached Nil
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