



**TORRENS HEALTH GROUP
INTEGRATED MANAGEMENT SYSTEMS (TIMS)
WORK INSTRUCTION FOR TORRENS HEALTH
CPAP RESPIRATORY SUPPORT TMS-012-CGMS-102
CLINICAL GOVERNANCE MANAGEMENT SYSTEM (CGMS)**

AUTHORISED FOR USE BY THE FOLLOWING CATEGORY OF STAFF THAT HAVE UNDERTAKEN THE REQUIRED TRAINING:

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THIS PROCEDURE ALIGNS WITH THE FOLLOWING STANDARDS:

<input checked="" type="checkbox"/>	National Safety and Quality Primary and Community Healthcare Standards
<input checked="" type="checkbox"/>	Aged Care Standards
<input checked="" type="checkbox"/>	NDIS Standards
<input checked="" type="checkbox"/>	ACIA Standards

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CPAP Respiratory Support TiMS-012-GGMS-102

1. Introduction

Continuous positive air pressure (CPAP) is a treatment method to assist breathing by keeping airways open and improve gas exchange. There are a number of clinical applications for CPAP, but this procedure will focus on CPAP as a treatment method for obstructive sleep apnoea (OSA).

OSA is a potentially serious sleep disorder characterised by episodes of complete or partial collapse of the upper airways with associated decrease in oxygen saturation and disrupted sleep cycles. The person suffering from OSA tend to snore loudly and experience periods where they stop breathing (apnoea) during sleep. CPAP machines provide pressurised air via a hose and interface (full face or nasal device) into the airway during sleep. The steady flow of air keeps the airways open improving normal respiration while sleeping. As room air is delivered by the CPAP system and inhaled, strict cleaning and maintenance of the system is essential.

CPAP is prescribed by a treating clinician following clinical investigations that determine OSA requiring treatment. Nursing and Support Worker interventions for clients requiring CPAP will be described in the client care plan.

1.1. Purpose

The purpose of this Procedure is to assist staff in the provision of CPAP therapy for OSA to clients in the community.

1.2. Aim

This Procedure aims to provide the rationale of prescribed CPAP therapy in symptom management for OSA, the importance of use of the therapy, and partnering with the client to support ongoing use of the therapy and practical information on set up, safe care, maintenance, and management.

2. Procedure Process

The Procedure provides information to supporting/providing CPAP therapy, as shown in the following Table:

Table 1. Guidelines for assisting clients with CPAP therapy for OSA

Step Number	Page	Summary
2.1	3	Partner with the client
2.2	3	What is CPAP?
2.3	3	What are the benefits of CPAP?
2.4	4	CPAP Equipment
2.5	4	Setting up the CPAP machine
2.6	5	Applying the CPAP mask and getting started
2.7	6	Cleaning and maintenance
2.8	7	Common side effects and how to address them
2.9	8	Unusual events and keeping the client safe

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2.1. Partner with the client

CPAP therapy is a non-invasive respiratory support and can easily be used at home. Prior to clinical investigations (e.g., sleep study), clients may be unaware they have OSA. CPAP therapy can have positive effects on sleep quality and concentration as well as other medical conditions such as lowering the risk of stroke and heart attack. It is also a prescribed treatment that is frequently associated with poor compliance, so it is valuable to partner with the client in instigating and continuing CPAP therapy.

Some initiatives for doing this are:

- Providing information, or directing client to supporting literature on why the therapy was prescribed and the benefits they receive from the therapy
- Ask the client if they have and questions or concerns and listen to the response, problem solve together.
- Seek expert advice if unsure how to deal with problems arising.

2.2. What is CPAP?

CPAP is a non-invasive method of opening the airways to deliver oxygen to the lungs. It works by:

- Supplying pressurised room air to the airway, at predetermined settings, via a hose and interface that is worn by the client while they sleep
- Delivering ongoing gentle positive airway pressure to the airways through the nose and/or mouth
- Maintaining open airways improves oxygen supplies to the heart and brain and helps optimise removal of waste products upon expiration
- For OSA specifically, CPAP helps maintain a healthy sleep cycle and resting state

2.3. What are the benefits of CPAP?

CPAP treatment benefits are only gained if the client uses it. Some benefits may be achieved if used 2-3 hours per night, but most recommendations are to use for at least four hours with benefits increasing each additional hour of use up to seven hours. Benefits of CPAP therapy in the treatment of OSA include:

- Improved oxygen supply to vital organs
- Reduced risk of high blood pressure, heart disease and stroke, and other health concerns as well as better diabetic control
- Improving sleep quality - repeated arousal (sometimes hundreds of times or more per night) from sleep as poor oxygen supply triggers the brain to wake from sleep and get the throat muscles working again, improves with CPAP therapy
- Reduced daytime sleepiness
- Improved concentration related to improved sleep quality
- Prolonged regular use can reduce emergency room visits and hospitalisation
- Decreased risk for driver of being involved in car accident

2.4. CPAP Equipment

CPAP machines and associated equipment vary by brand but the equipment for delivery of the therapy common to most is:

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- CPAP machine - predetermined settings set up by CPAP provider, may have humidifier chamber to supply moist air
- Tubing – may have heating coil for warm air supply. Each end of the tubing may be different for interface and machine connection
- Interface – consists of three parts: headgear, frame, and delivery device. There are many types of interfaces, including full face mask, masks that cover the nose and/or mouth, and nasal pillows. See Figure 1. below.



Figure 1. CPAP interface examples

2.5. Setting up the CPAP machine

Setting up the CPAP machine is relatively easy. Machine models may differ slightly so follow manufacturer's instructions. Below is a general guide of how to set up a CPAP for the first time or after cleaning.

- Place the machine on a stable surface that is slightly lower than the client's head level and allows the hose to reach the bed head
- Ensure there is a power supply nearby to plug in machine
- Allow enough space to remove the humidifier chamber for cleaning and refilling
- Insert the power cord into the back of the machine
- Connect the cord to the power supply and plug directly into electrical outlet (faulty adaptors or power boards may damage the machine). Note: Power supply should be off during machine set up or cleaning
- Attach the tubing to the CPAP machine by holding the tubing cuff and inserting into connector port, aligning connector pins if present
- If the mask has a tubing connector that sits above the head, it may be more convenient to attach now – for other mask types see 2.5 below
- Remove the humidifier chamber and add distilled water not exceeding MAX water mark on chamber
NOTE: Due to risk of water damage to the machine, it is not recommended to move the machine with humidifier chamber attached
- Slide humidifier chamber back into machine

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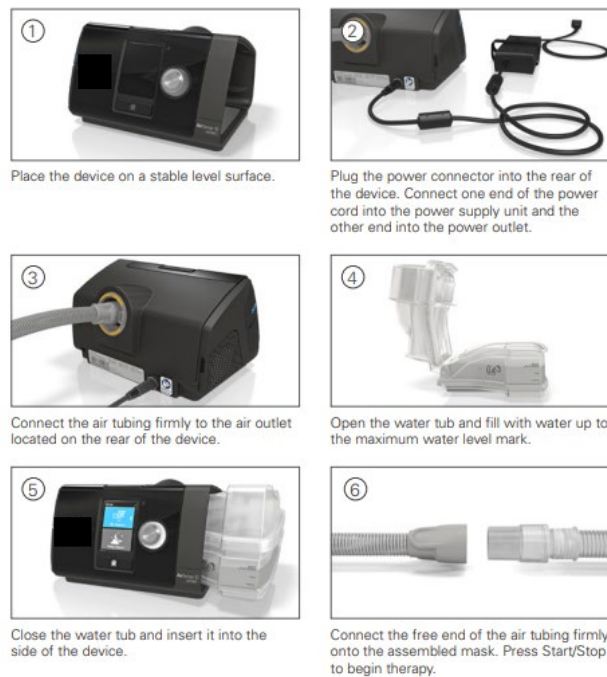


Figure 2. CPAP machine set up (example only – brands/models will differ)

2.6. Applying the CPAP interface and getting started

- Switch on the power supply at the electrical outlet
- If machine has humidifier chamber, set up as in 2.4 above
- Put mask on, or place interface in correct position first
- Slip the headgear over the head (straps may be split to be spread apart for stability - See Figure 3.)
- The fit should be snug but not tight
- Connect the end of the tube (not attached to the machine) to the mask (if not already connected)
- Place tubing excess loops lower than the head (droplets can form in the tube and be inhaled if at same or elevated level)
- Press the start button on the machine



Figure 3. Strap separation and spread for stability.

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2.7. Cleaning and maintenance

Given that the CPAP interface, tubing, and associated parts deliver air to be inhaled and receive exhaled air, it is essential to clean and maintain the CPAP machine and accessory equipment following the manufacturer's instructions.

Warm drinking quality water is referred to for cleaning. This means warm water (not hot) from the tap is fine to use, as long as it is of drinking quality. Don't use "grey" water (wastewater) or water from a source of questionable quality.

After cleaning, reassembly and use of the components should only occur when fully dry. Air drying components may take several hours which will influence when in the client's preferred routine cleaning occurs.

General guidelines for maintenance and cleaning are described below. NOTE: Power supply including integrated battery should be off prior to disassembling or cleaning.

Daily cleaning and checks

To remove dangerous microbes, mould, dust, and debris as well as ensuring machine and parts are undamaged, the daily cleaning and maintenance requirements include:

- Unplug the machine from the power source and if machine has integrated battery, follow manufacturers' instructions regarding safe disassembly and cleaning
- Wipe down the machine with a wet wipe (never immerse the machine in water)
- Disconnect the mask and air tubing from the CPAP machine
- Disconnect the mask from the tubing
- Check the tubing for any damage (kinks, mould, dust, holes, or tears) and hang tubing with connection ends facing down to air dry out of direct sunlight
- Remove the humidifier (if part of machine model) and wipe it dry with a clean disposable cloth, allow to air dry avoiding direct sunlight
- Disassemble the headgear into parts (headgear, cushion, interface, and frame) See Figure 4. below for example.

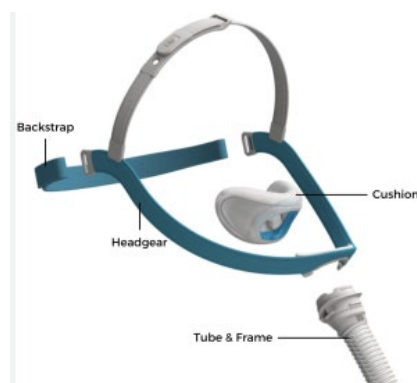


Figure 4. CPAP interface disassembly example

- Clean the interface to remove any oils or debris with mild soap and warm drinking quality water
- Rinse well in warm drinking quality water
- Place the interface on top of a paper towel to air dry avoiding direct sunlight

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Weekly cleaning and checks

- Wash the tubing (that has been disconnected from the interface and disconnected from the machine), interface components and headgear thoroughly in a clean sink or tub with mild soap and warm drinking quality water
- Rinse all components thoroughly with clean warm drinking quality water
- Hang tubing, avoiding damage from hanging location, with ends facing downwards and air dry
- Place interface components on top of a paper towel to air dry
- Soak the humidifier chamber/tub in a mild dishwashing liquid, or solution of 1 part vinegar to 9 parts room temperature drinking water
- After soaking, rinse humidifier chamber thoroughly with clean warm drinking quality water
- Place the humidifier in a way that allows the best drainage, to air dry out of direct sunlight
- Check machine filter for clogging or visible soiling. If returning used filter to machine, place exactly in the same position (do not turn filter around)
- Wipe over machine with a wet wipe (never immerse the machine in water)
- Clean the surface the machine is resting on

Other cleaning and checks

Consult manufacturer's instructions for information specific to the machine model. General guidelines for inspecting and maintaining a safe and effective CPAP system are:

- Replace machine filter according to manufacturer's instruction, usually this is every 2 to 6 monthly but replacement may be required more frequently depending on environmental factors (e.g., dust, pet dander), or when visibly soiled
- The machine should be serviced at a frequency recommended by the manufacturer
- The consumables (interface, headgear, tubing) should be checked for visible deterioration (e.g., cracking, crazing, stiffness, tears, discoloration, loss of stretch in straps) and replaced as necessary

2.8. Common side effects and how to address them

Knowing the side effects of CPAP therapy is integral to supporting a client with use and compliance of the treatment. 10 Common side effects with tips to overcome them are:

- **Difficulty tolerating mask** – CPAP provider has expert knowledge in the vast number of styles and sizes of CPAP interfaces
- **Trouble getting used to wearing the interface** – start by wearing just the interface (mask, nasal cushion etc.) for short periods while awake to get used to how it feels, then increase use by attaching hose and operating machine to interface during waking hours (e.g., watching TV) and finally move on to using every time the client sleeps (including naps)
- **Difficulty tolerating forced air** – some machines have features that allows lower positive air pressure when the device is started, others deliver bi-level positive airway pressure (BiPAP) that delivers more pressure breathing in and less breathing out
- **Dry stuffy nose** – a leaky interface can dry out the nose or the humidifier chamber may be empty. Using a nasal saline spray before applying mask may assist
- **Claustrophobic feeling** – Gentle commencement of interface use, relaxation techniques, possible mask adaption to nasal pillow style (consult CPAP provider)

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- **Leaky mask** – a leaky interface will not deliver the required therapy and can be very annoying blowing air onto the client's face/eyes, but overtightening headgear straps may lead to pressure injury (PI). Bridge of the nose is a common interface area associated pressure injury site. The interface may require replacement but try small mask placement adjustment in the first instance
- **Difficulty falling asleep** – it may take several weeks to get used to the CPAP therapy initially. Use usual strategies for good sleep habits such as avoiding caffeine and alcohol before bedtime, exercising during the day, relaxation techniques and only going to bed when tired
- **Dry mouth** – a chin strap may assist with mouth breathing causing dry mouth
- **Noisy machine** – check the air filter and replace if soiled or blocked. If machine is working properly, consider use of ear plugs or white noise
- **Unintentional removal of interface during the night** – restless sleep may or may not be related to CPAP therapy. Check that there is enough slack in the tube to allow for head movement. Try to identify reason why the mask was removed (likely to be one of the side effects listed above) and address accordingly

2.9. Unusual events and keeping the client safe

Power Failure

- If no back up battery in the machine, CPAP headgear and mask/interface is to be removed
- Wake the person

Vomiting or Nosebleed

If vomiting or nosebleed occurs and the client cannot remove their own mask, the client is at real risk of aspiration. Clients unable to remove their own mask should be observed during treatment. If vomiting or nosebleed occurs, staff should do the following:

- Remove mask immediately
- Ensure the airway is clear
- Sit person upright or place in recovery position
- Escalate care if required (D.R.S.A.B.C.D.)
- CPAP components will require a full weekly clean

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