

Non-Invasive Ventilation (NIV) in COPD patients

The patient with COPD may be on Non Invasive Ventilation (NIV) either CPAP (continuous positive airway pressure) or BiPAP (bilevel positive airway pressure) therapy at home. Most COPD patients won't be on NIV at home however may require BiPAP when hospitalized with a severe exacerbation of COPD.

Indications:

- Acute respiratory failure
- Acute on chronic respiratory failure
- Chronic respiratory failure
- Hypercapnic respiratory failure with or without hypoxemia

The decision to commence BiPAP therapy is made by the Medical team. The Physician prescribes pressures the machine will be set and if oxygen is required. The Nursing team is responsible for setting up the machine. BiPAP therapy is usually managed in the Coronary Care Unit (CCU) but maybe initiated in the Emergency Department (ED).

The treatment is delivered by a small machine which will apply two different pressures, a lower pressure to keep the airway open and a higher pressure to expand the lung/alveoli. The treatment is delivered via a full face mask which covers the patient's nose and mouth. The Nursing staff monitors the patient's ventilator synchrony (matching patients respiratory effort with the machines), assess mask fit and comfort.

The Medical/Nursing team monitors the patient closely to determine the effectiveness of therapy by monitoring pulse oximetry, ECG, respiratory rate, pulse rate, blood pressure and assessments of consciousness and ability to tolerate the treatment. Arterial blood gases (ABG's) are taken one, four and twelve hours after initiation of NIV. ABG's enable the Medical/Nursing team to formulate a management plan, to determine if the treatment is successful or if escalation of treatment to intubation is needed in ICU.

The treatment will be discontinued once the patient has recovered from the acute exacerbation or if BiPAP treatment is deemed unsuitable. Some patients may need long term BiPAP and/or oxygen therapy once they have recovered from their acute episode. If this is required the patient will be loaned BiPAP machine, taught how to use it and be provided with accessories and the necessary equipment to use the therapy at home. They are supported in the community by the Sleep Service which consists of Respiratory/Sleep Physicians, Clinical Nurse Specialist and Technicians. For further information contact the Sleep Service at Palmerston North Hospital (06) 3509159.

