HACKETTSTOWN REGIONAL MEDICAL CENTER
CARDIOPULMONARY
INDICATIONS/CONTRAINDICATIONS FOR RESPIRATORY THERAPY
MODALITIES OF TREATMENT

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SCOPE

All members of the Cardiopulmonary Department

PURPOSE

To identify indications and contraindications for respiratory therapy in an effort to provide optimal patient care and safety.

The following indications and contraindications for providing respiratory therapy treatments to patients will be considered. These medical indications and contraindications will be included in Cardiopulmonary Services monitoring and evaluation program.

PROCEDURE

Oxygen Therapy Indications:

- To treat and to prevent the symptoms of hypoxia, such as tachypnea, tachycardia, shortness of breath, dyspnea and cyanosis (PaO_2 below 60mm hg and/or saturation by pulse oximeter below 90%).
- To remove (wash out) carbon monoxide in the blood.
- To avoid hypercapnia in the oxygen sensitive (COPD) or advanced restrictive disease patient.
- To avoid too high concentrations of oxygen in neonates/premature infants to avoid Retinopathy of Prematurity.

Hand Held Nebulizer Indications:

- Hand held nebulizers are to be used in the delivery of bronchodilators. It can be used, but may not be limited to relieve symptoms of: Asthma, dyspnea, exacerbation of COPD, shortness of breath.
- Hand held nebulizers are to be used in the delivery of inhaled corticosteroids as well.
- In asthmatic patients, use of Racemic Epinephrine is preferred for effectiveness rather than Albuterol. Maximum dose of Albuterol is 10mg, if available and patient is able to tolerate this. A patient's pulse should be monitored closely.

Contraindications: Severe tachycardia, allergies to medications

Postural Drainage and Percussion Indications:

- To treat patients with the diagnosis of pneumonia or bronchiectasis, and diseases characterized by abnormal sputum production that makes the patient subject to recurrent infections.

To treat patients with musculoskeletal abnormalities that makes their cough mechanism inadequate.

Contraindications: Lack of tolerance

Arterial Blood Gas Analysis Indications:

- To detect abnormalities in gas exchange in a patient with an acute onset of dyspnea.
- To exclude hypoxemia, hypercapnia, or disturbances in acid/base balance as pathogenic factors responsible for unexplained changes in mental status.
- To determine the CO in smoke inhalation cases.
- To determine gas exchange in patients who have tachypnea.
- To document respiratory failure in patients who have been clinically diagnosed with impairment of lung function and to assess the severity of this condition.
- To monitor gas exchange and ventilation in patients on respirators and to manage the withdrawal of ventilatory support.
- To be used as a preoperative assessment procedure in "High Risk" patients who will require general anesthesia.

Complications: Arterial spasm that may reduce flow distally (although a normal Allen test), subcutaneous bleeding and infection at the puncture site (is a remote possibility).

Contraindications: Repeated blood draws in a patient who has sclerosed vessels. Use of a temporary indwelling line is suggested.

Cardiopulmonary Resuscitation Indications:

All patients are candidates for cardiopulmonary resuscitation (CPR), with the following generally accepted exceptions:

- Patients known to have a severely debilitating and terminal illness such as advanced dementia or metastatic carcinoma. Patients who have indicated that life-prolonging measures are not desired.
- Patients who have been without pulse or respirations for a period of at least 10 minutes as confirmed by a reliable witness and documented. This, however, would not include younger patients or those in whom hypothermia is detected or acute drug poisoning is suspected. It would also not apply to patients who have signed an Advance Directive stating that they wish all life-prolonging measures undertaken.
- All patients who have a written statement from their physician and a written order indicating their wishes not to have life-prolonging measures undertaken (documented "DNR/DNI" patients)

Ventilatory Support Indications:

Acute Ventilatory Failure:

- Pulmonary: Apnea or respiratory arrest due to fatigue or infections. Respiratory failure is defined as pCO_2 increasing, pH decreasing proportionally. Acute ventilatory failure can occur as a result of underlying lung disease. Hypoxemic respiratory insufficiency is defined as PaO_2 decreasing with the $PcCO_2$ remaining normal or even slightly reduced and FiO_2 is 100%.
- Nonpulmonary: Acute non-pulmonary ventilatory failure is usually precipitated by an overdose, trauma with multiple fractures requiring ventilatory support, or postoperative surgery that requires support.

Acute on Chronic Ventilatory Failure: Patients without an underlying pulmonary disease who have chronic neuromuscular or thoracic skeletal defects. These patients can acquire a superimposed acute broncho-pulmonary infection or can be over sedated with consequent hypoventilation.

Hypoxemic Respiratory Deficiency is known as Adult Respiratory Distress Syndrome (ARDS). This form of pulmonary edema may occur in association with a potentially reversible disease process.

Complications: Respiratory infection, nosocomial infection, pneumothorax, hemopneumothorax or skin/tissue breakdown due to prolonged ET tube placement. For lengthy intubations, the patient is advised to undergo tracheostomy.

Contraindications: Documentation by patient or legal surrogate that patient does not wish ventilator support in the case of pulmonary compromise or arrest. (documented "DNI").

Pulmonary Function Testing Indications:

Pulmonary function testing enables the physician:

- To follow the progress of respiratory disease, such as emphysema and COPD
- To assess disease effects objectively and to prescribe the proper therapy. This is most important for patients who smoke heavily.

Contraindications: Severely debilitated patient

Pulse Oximeter Indications:

- To monitor patient oxygen saturation for patients on continuous ventilation.
- To perform "spot check" analysis every 24 to 48 hours on patients who have continuous oxygen therapy to verify usefulness.
- To monitor neonates with oxygenation difficulties.
- To monitor oxygen saturation in infants and children with respiratory infections, pneumonia, asthma or other diseases related to the respiratory system.
- To avoid repeat ABGs in the ED when the only problem is oxygenation.