**Respiratory Care Pocket Reference**

**Introduction**

- **Continuous Positive Airway Pressure (CPAP)**: CPAP is indicated for patients who require positive pressure ventilation to prevent upper airway obstruction.
- **High Flow Oxygen Delivery**: Delivers high-flow oxygen through a mask or other interface to maintain a high FiO₂ without the use of a ventilator.
- **Oxygen Sources & Delivery Devices**
  - **Continuous Flow Delivery (CCF)**: CCF is indicated for patients who require high-flow oxygen delivery.
  - **High Flow Oxygen Delivery (HFO)**: HFO is indicated for patients who require high-flow oxygen delivery.
  - **Noninvasive Ventilation (NIV)**: NIV is indicated for patients who require positive pressure ventilation to prevent upper airway obstruction.
  - **Oxygen Sources & Delivery Devices**: Oxygen sources and delivery devices include nasal cannula, facial mask, and other interfaces.
  - **Respiratory Care**: Collaborators & with support from multiple institutions, including:

**Oxygen Delivery Methods**

- **Nasal Cannula**
  - **High Flow Oxygen Delivery**: Delivers high-flow oxygen through a nasal cannula to maintain a high FiO₂.
  - **Noninvasive Ventilation**: Delivers positive pressure ventilation to prevent upper airway obstruction.

**Nasal Cannula**

- **Continuous Flow Delivery**: Delivers continuous flow of oxygen via nasal cannula.
- **High Flow Oxygen Delivery**: Delivers high-flow oxygen through a nasal cannula.
- **Noninvasive Ventilation**: Delivers positive pressure ventilation to prevent upper airway obstruction.

**High Flow Oxygen Delivery**

- **Delivery Device & Supply FAQ**: Includes information on oxygen delivery devices and supply considerations.
- **Oxygen Supply**: Oxygen supply requirements and considerations.

**Oxygen Delivery Methods**

- **Nasal Cannula**: Nasal cannula delivery of high-flow oxygen for respiratory support.
- **High Flow Oxygen Delivery**: High-flow oxygen delivery through nasal cannula or other interfaces.
- **Noninvasive Ventilation**: Positive pressure ventilation via nasal cannula or other interfaces.

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**Respiratory Care, Setup, & Monitoring**

- **Ventilator Setup (prior to connecting patients)**
  - **Impairments**
    - Impact on setup for: communication, transport, or management
    - Consider manual ventilation if setup is impaired
  - **Ventilator checks**
    - Confirm all alarms are functional and set appropriately
    - Ensure gas supply is connected and functional
    - Confirm all gas lines and connections are tight and secure
    - Confirm all fluids are properly connected and functional
    - Confirm all external equipment is connected and functional
    - Confirm all patient monitoring devices are functional and set appropriately

- **Vital Signs**
  - **Temperature**
    - Continuous monitoring of temperature is essential to prevent hypothermia
    - Maintain a rectal temperature of 36.5°C (97.7°F) to prevent hypothermia
    - Avoid overheating by ensuring appropriate insulation and temperature regulation

- **Infection Control**
  - **Hand hygiene**
    - Frequent hand hygiene is critical to prevent the spread of infections
    - Use alcohol-based hand rubs or soap and water for hand hygiene
    - Wear gloves when touching the patient or contaminated surfaces

- **Ventilator Parameter Setup**
  - **Target values**
    - Set target values for inspiratory pressure, inspiratory flow, expiratory time, and tidal volume
    - Adjust settings to achieve desired endpoints (e.g., optimal oxygenation and ventilation)
  - **Safety limits**
    - Set safety limits to prevent overventilation and underventilation
    - Monitor ventilator alarms for patient safety

- **Respiratory Distress Syndrome (ARDS)**
  - **Acute Respiratory Distress Syndrome (ARDS)**
    - Pathophysiology: Inflammation and permeability increase in the lung
    - Treatment: Oxygenation support, fluid management, and infection control
  - **ARDS Prevention**
    - Avoid the use of high tidal volumes and positive end-expiratory pressure (PEEP)
    - Use low tidal volume ventilation (<6 mL/kg)
  - **ARDS Management**
    - Proper fluid management to maintain adequate tissue oxygenation
    - Monitor for signs of fluid overload (e.g., peripheral edema, weight gain)

- **Additional Monitoring**
  - **Capnography**
    - Monitor end-tidal CO2 to assess ventilation adequacy
    - Use capnography to guide ventilator settings and weaning
  - **Pleural Ultrasound**
    - Use ultrasound to monitor the pleural space and detect pneumothorax
    - Monitor for changes in pleural fluid volume and echogenicity

**Lung-Protective Ventilation (LPV)**

- **Lung-Protective Ventilation**
  - **Lung-protective strategies**
    - Use low tidal volume ventilation (<8 mL/kg)
    - Use low respiratory rates
    - Use high PEEP levels
  - **High-Pressure Limitations**
    - Avoid injurious ventilation
    - Use protective strategies to prevent lung injury
  - **Low-Pressure Limitations**
    - Avoid hypoxic ventilation
    - Use oxygen supplementation

- **Additional LPV Reference Calculations**
  - **Predicted Body Weight (PBW)**
    - Male: 110 lb (260 kg) for males; 110 lb (260 kg) for females
    - Female: 85 lb (380 kg) for females
  - **Positive End-Expilatory Pressure (PEEP)**
    - Use PEEP levels to avoid barotrauma and maintain adequate oxygenation
    - Use PEEP levels to avoid hypoxic ventilator settings
  - **Pressure-Volume (PV) Curve**
    - Use PV curve to assess lung compliance and fluid status
    - Use PV curve to guide ventilator settings and weaning

**Adjuvant Therapies for ARDS Hypoxemia**

- **High-Pressure Protective Ventilation**
  - **Inhaled Prostacyclin Initial Dose**
    - Consider in patients with severe hypoxemia (PaO2/FiO2 <200)
    - Use inhaled prostacyclin to maintain oxygenation
  - **Inhaled Nitric Oxide**
    - Use inhaled nitric oxide to maintain oxygenation
  - **Inhaled Nitric Oxide Final Dose**
    - Use inhaled nitric oxide to maintain oxygenation
  - **Inhaled Nitric Oxide Duration**
    - Use inhaled nitric oxide to maintain oxygenation

**Discomfort, Pain, Anxiety, and Delirium**

- **Pain Management**
  - **Pain Assessment Tools**
    - Use pain assessment tools to guide pain management
    - Use pain assessment tools to guide opioid titration
  - **Pain Medication Administration**
    - Use pain medication administration to relieve discomfort
  - **Pain Management Adverse Events**
    - Watch for adverse events (e.g., respiratory depression)

- **Anxiety Management**
  - **Anxiety Assessment Tools**
    - Use anxiety assessment tools to guide anxiety management
    - Use anxiety assessment tools to guide benzodiazepine titration
  - ** Anxiety Medication Administration**
    - Use anxiety medication administration to relieve anxiety
  - **Anxiety Management Adverse Events**
    - Watch for adverse events (e.g., sedation)

- **Delirium Management**
  - **Delirium Assessment Tools**
    - Use delirium assessment tools to guide delirium management
    - Use delirium assessment tools to guide antipsychotic titration
  - **Delirium Medication Administration**
    - Use delirium medication administration to relieve delirium
  - **Delirium Management Adverse Events**
    - Watch for adverse events (e.g., sedation)

**Ventilator Weaning & Exubation**

- **Intubation Considerations**
  - **Intubation Indications**
    - Use intubation indications to guide intubation decisions
    - Use intubation indications to guide mechanical ventilation
  - **Intubation Strategies**
    - Use intubation strategies to guide intubation decisions
    - Use intubation strategies to guide mechanical ventilation
  - **Intubation Complications**
    - Watch for complications (e.g., laryngospasm)
    - Watch for complications (e.g., laryngospasm)

- **Weaning Considerations**
  - **Weaning Indications**
    - Use weaning indications to guide weaning decisions
    - Use weaning indications to guide mechanical ventilation
  - **Weaning Strategies**
    - Use weaning strategies to guide weaning decisions
    - Use weaning strategies to guide mechanical ventilation
  - **Weaning Adverse Events**
    - Watch for adverse events (e.g., hypercarbia)
    - Watch for adverse events (e.g., hypercarbia)

**SBT Intention Criteria (Consideration)**

- **SBT Intention Criteria**
  - **SBT Initiation Criteria**
    - Use SBT initiation criteria to guide SBT decisions
    - Use SBT initiation criteria to guide mechanical ventilation
  - **SBT Weaning Criteria**
    - Use SBT weaning criteria to guide SBT decisions
    - Use SBT weaning criteria to guide mechanical ventilation
  - **SBT Weaning Adverse Events**
    - Watch for adverse events (e.g., respiratory failure)
    - Watch for adverse events (e.g., respiratory failure)