I. **Purpose:** To outline procedure for adult patients requiring noninvasive ventilator support during transport.

II. **Supportive Data:** Noninvasive ventilatory support has become increasingly important in the management of respiratory insufficiency and respiratory failure. CPAP/BIPAP is a mode of noninvasive ventilatory support that improves pulmonary mechanics and increases surface area for gas exchange at the alveolar/capillary membrane. The result is improved ventilation, improved oxygenation and reduced work of breathing. Noninvasive ventilatory support has been shown to decrease ICU length of stay as well as reduce the risk of ventilator associated infections and improve outcome in certain situations.

III. **Indications for initiation and continuation of noninvasive ventilator support:**
   a. Acute or chronic respiratory insufficiency, acute respiratory failure, acute cardiogenic pulmonary edema, or exacerbation of COPD

IV. **Contraindications:**
   a. Apnea or Agonal respirations
   b. Pneumothorax
   c. Altered level of consciousness/Unresolved Anxiety
   d. Facial trauma
   e. Hypotension, systolic <100 mmhg
   f. Vomiting
   g. Excessive secretions
   h. GI bleed
   i. Upper airway obstruction
V. Procedure:
   a. Initiate patient assessment to determine if they will tolerate noninvasive ventilatory support or whether patient will require tracheal intubation prior to transport.
   b. Patient must be able to do the following:
      i. Trigger breath
      ii. Synchronize inspiratory effort with the delivered flow
      iii. Synchronize effort termination with machine breath termination
      iv. Cooperate with therapy/Follow commands
      v. Have ability to clear bronchial secretions
   c. Demonstrate/explain procedure to patient
   d. Settings:
      i. Place ventilator in the following mode:
         1. Select desired NIV mode on the Quick Start tab.
      ii. If patient is already on non-invasive ventilation:
         1. Ensure that appropriate mask size is being utilized, mask is intact, and that the mask is properly positioned on patient.
         2. Place patient on continuous pulse oximetry and capnography if not already done.
         3. Review settings with sending physician/respiratory therapist; consider capabilities of transport ventilator when doing so.
         4. Perform circuit check, ensure that the transport ventilator is functioning properly with the same settings as the sending facility is using, and ensure ventilator is ready to be attached to the patient.
         5. Remove mask from sending facility’s device and place transport mask on patient face. If utilizing sending facility’s mask during transport ensure appropriate adapter (blue elbow) is present and functional.
         6. Verify breath sounds and chest rise remain present bilaterally and there are no significant changes in vital signs.
      iii. If patient is not currently on non-invasive ventilation:
         1. Determine correct mask size for patient.
         2. Place patient on continuous pulse oximetry and capnography.
         3. Perform circuit check and ensure ventilator is functioning properly.
         4. Set settings:
            a. CPAP
               i. Set PEEP at 5
               ii. Pressure Support to OFF
               iii. FIO2 80%
               iv. Flow Trig at 5 Lpm
b. Bi-Pap
   i. Set Pressure Support at 10
   ii. Set PEEP to 5
   iii. FiO2 at 80%
   iv. Flow Trig at 5 Lpm

VI. **Transport considerations**
   a. Monitor patient, vital signs, and mask positioning
   b. Adjust settings to maintain Pulse oximetry of 90%
      i. Adjust pressure settings in increments of 2
      ii. Adjust Fi02 in increments of 10