



Critical Care Therapy and Respiratory Care Section

Category:	Clinical
Section:	Special Procedures
Title:	Transport of Critically Ill Patients
Policy #:	05
Revised:	04/00

1.0 DESCRIPTION

1.1 Definition: Transporting critically ill patients is necessary for many diagnostic or therapeutic procedures; however, transporting a patient may be associated with risk. Continuous and effective monitoring of a patient's ventilation, oxygenation, and cardiopulmonary and hemodynamic status must be maintained at all times during transport. This procedure describes the appropriate patient and equipment preparation and monitoring required for the safe transport of critically ill patients.

1.2 Indications

1.2.1 When diagnostic testing or therapeutic intervention requires transport out of the intensive care unit.

1.2.2 When the risk-benefit ratio is favorable for the patient.

1.3 Contraindications

1.3.1 Inability to maintain patient's airway during transport.

1.3.2 Inability to provide adequate oxygenation and ventilation during transport.

1.3.3 Inability to maintain hemodynamic stability during transport.

1.3.4 Inability to adequately monitor the patient's cardiopulmonary status during transport.

1.3.5 All other conditions in which transporting the patient is deemed life-threatening.

1.4 Precautions

- 1.4.1 All procedures for the proper setup, maintenance, and use of all equipment for transport must be strictly followed. The inappropriate use of any of this equipment may lead to patient compromise. Refer to CCTRCS procedures and/or equipment operating manuals for specific instructions when needed.
- 1.4.2 Some patients may not tolerate movement and/or changes in ventilatory support. A trial of body movement, manual ventilation, or application of the TransCARE I transport ventilator in the intensive care unit is warranted to ensure patient tolerance.

1.5 Adverse Reactions and Interventions

- 1.5.1 Movement may result in inadvertent extubation and loss of a patent airway. Should inadvertent extubation occur, immediately institute oxygenation and ventilatory support via a resuscitation mask and manual resuscitator. Assist with re-intubation as necessary.
- 1.5.2 Movement may result in accidental removal of vascular access devices and/or inadvertent discontinuation of pharmacologic support. Hemodynamic instability may result in susceptible patients. Apply direct pressure as indicated for hemostasis and monitor the patient for signs of hemodynamic compromise, i.e. hypotension, cardiac dysrhythmias, and/or poor perfusion. Notify the physician and nurse immediately.
- 1.5.3 Position changes may result in hypotension, hypercarbia, and hypoxemia. Monitor patients throughout all transport maneuvers and during diagnostic/therapeutic procedures. Allow time for patient recovery to baseline vital signs as needed throughout transport procedures.
- 1.5.4 Hyperventilation or hypoventilation during manual ventilation may cause detrimental changes in acid-base status resulting in cardiac dysrhythmias, hypoxemia, and/or hypotension. Susceptible patients should be monitored with end-tidal carbon dioxide monitoring equipment in addition to cardiopulmonary monitoring and pulse oximetry.
- 1.5.5 Equipment failures may result in inaccurate data, loss of monitoring capabilities, and patient compromise. Follow all manufacturers' instructions for the maintenance of transport and monitoring equipment, and ascertain proper function of all equipment prior to departure from the intensive care unit.

- 1.5.6 Loss of PEEP/CPAP may result in hypoxemia. Monitor PEEP/CPAP levels via appropriate pressure monitoring devices in susceptible patients. Ensure rapid, smooth transitions from mechanical ventilation to manual ventilation.
- 1.5.7 Loss of the patient's oxygen supply may result in hypoxemia. Always ascertain oxygen tank capacity prior to departure and bring extra tanks as needed to ensure an adequate supply.

2.0 EQUIPMENT

- 2.1 Emergency airway management supplies (appropriately sized oral airways, laryngoscope, endotracheal tubes, stylet, and portable suction)
- 2.2 Portable oxygen with appropriate oxygen delivery device
- 2.3 Manual resuscitator with mask and PEEP valve
- 2.4 Pulse oximeter
- 2.5 Cardiopulmonary transport monitor, transducer cables, modules, and printer paper
- 2.6 Emergency pharmacologic agents
- 2.7 Stethoscope
- 2.8 When appropriate, ventilator (for mechanically ventilated patients): The TransCARE I transport ventilator should be reserved primarily for patients requiring magnetic resonance imaging (MRI). See the CCTRCS TransCARE I Ventilator Procedure
- 2.9 Universal precautions attire

3.0 PERSONNEL

- 3.1 All mechanically ventilated patients **must** be accompanied by a respiratory therapist and a nurse. The decision to include a physician on the transport team should be based on the stability of the patient. If it is determined that a physician must accompany the patient during transport and the unit acuity also requires a physician in attendance there, the backup fellow or senior attending physician will be contacted to provide the needed support during the transport.
- 3.2 The team must be proficient in operation and troubleshooting all of the equipment described in Section 2.0.

4.0 PROCEDURE

- 4.1 Verify physician's order.
- 4.2 Gather and assemble all equipment. Maintain electrical power to all monitors prior to departure to ensure the maximum charge of the batteries.
- 4.3 Label, level, and zero all pressure transducers.
- 4.4 Secure all pressure monitoring lines to avoid inadvertent disconnection and decannulation.
- 4.5 Set appropriate alarm limits for all monitored parameters.
- 4.6 Monitor the patient throughout the transport for the adequacy of oxygenation and ventilation, assure hemodynamic stability and tolerance of the procedure, and monitor all mechanical ventilator parameters as indicated to ensure patient safety.

5.0 POST PROCEDURE

- 5.1 Upon returning to the unit, place the patient on the appropriate bedside monitoring and respiratory equipment. Re-level and re-zero all pressure transducers. Check and reset all necessary alarm parameters and ensure patient comfort.
- 5.2 Remove all transport equipment from the patient's room, disinfect as appropriate, and store monitors with connection to AC power for recharging of the batteries.

6.0 DOCUMENTATION

- 6.1 Document the ventilator or oxygen settings prior to departing and upon returning to the unit.
- 6.2 Document any cardiopulmonary or hemodynamic changes that may have occurred during the transport on the "Notes" side of the Ventilator flowsheet. Include the occurrence of adverse reactions and interventions that were made. Report this information to the next shift.

7.0 REFERENCES

- 7.1 AARC Clinical Practice Guideline: Transport of the Mechanically Ventilated Patient
- 7.2 CCMD Physician Section Patient Transport Policy

SIGNATURE: _____
Assistant Section Chief, CCTRCS, CCMD

DATE: _____

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