

Transport of the Mechanically Ventilated, Critically Injured, or Ill, Neonate, Child, or Adult Patient

Inter-hospital transport refers to emergency transport from one facility to another for acute life-threatening illnesses. This is emergency transportation that is needed due to the lack of diagnostic facilities, staff, clinical expertise, or facilities for the safe and effective care of the patient and delivery of therapy by the referring hospital.

Intra-hospital transport refers to the transport of critically ill patients from one area of a hospital to another within the facility.

Intra-and-hospital transport of mechanically ventilated, critically injured, or ill neonatal, pediatric, and/or adult patients is always associated with a greater degree of risk. The greatest risk associated with dislodgement of the artificial airway is loss of airway patency, loss of IV access, or loss of cardiovascular support. The risk of transporting the mechanically ventilated patient needs to be minimized through careful preparation prior to the transport. Ventilatory backup equipment must be readily available, including, but not limited to self-inflating bag and mask and a sufficient oxygen supply to support the duration of the transport. These risks can be mitigated through good hand-off communication between all parties, continuous monitoring throughout the transport equipment that has the ability to function from a battery source, along with backup equipment, and personnel appropriately trained, and competency tested to deal with varying circumstances is also essential.

The American Association for Respiratory Care (AARC) recognizes the following as the minimum standards for the safe transport of mechanically ventilated, critically injured, or ill patients:

1. Transport will be performed by a team consisting of, at minimum, a registered nurse with critical care experience and a paramedic or RN trained in managing a ventilator. It is strongly recommended that the second person to manage airway patency and the ventilator should be a Respiratory Therapist.
2. One member of the transport team will have the appropriate advanced life support certification (NRP, PALS, and/or ACLS) to address the needs of the patient.
3. A minimum of one member of the transport team will be competent in airway management. Appropriate airway management equipment, including emergency backup equipment and an adequate gas supply, will be readily available during the transport.
4. Transport monitors will provide real-time measurement of all essential parameters.

5. It is recommended that all patients receiving mechanical ventilation should have been carbon dioxide monitoring in place during transport to provide information regarding both airway placement and pulmonary blood flow.¹
6. The preferred method of ventilation during transport is a transport ventilator. A trial of mechanical ventilation using the planned transport device will be conducted to assess patient tolerance and stability before proceeding with the transport whenever possible.
7. Transportation will be performed according to the AARC Clinical Practice Guideline entitled "In-hospital transport of the mechanically ventilated patient."

References:

1. Branson RD. Monitoring During Transport. Respir Care, June 2020, Col.65(6):882-893

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