**Moving patients with severe respiratory failure**

Several important factors need to be considered while inter hospital transfer of level 3 respiratory failure patients to ensure patient safety and stability throughout the process.

**Learning objectives**

By the end of this module you will be able to:

1. understand the principles of assessment of patient with severe respiratory failure
2. identify the risk and address the potential complications during the transfer
3. transfer the patient in safe manner and handover to accepting team

**Key principles of assessment of patient with severe respiratory failure**

When transferring a level 3 patient with severe respiratory failure to another hospital, the goal is to ensure that the patient is optimally stabilised and that all necessary precautions are taken to minimise risks during transport. The key principles is A to E assessment before inter-hospital transfer and include:

**Airway**

* Ensure airway patency and confirm ETT placement (verify via capnography or end-tidal CO2).
* Ensure the ETT is secured properly to prevent displacement during transfer.
* Make sure that airway is clear of secretions, and suction as needed.

**Breathing**

* Review ventilator settings (mode, tidal volume, respiratory rate, FiO2, PEEP) to ensure they are appropriate for the patient's condition eg: ARDS: Ensure proper PEEP and tidal volume settings 4-6 mls/kg of ideal body weight (lung- protective strategy)

COPD/Hypercapnia: Use settings that minimise excessive tidal volumes (e.g., lower respiratory rates, higher tidal volumes for permissive hypercapnia).

* Obtain a recent ABG to assess oxygenation (PaO2, SaO2), ventilation (PaCO2), and acid-base balance (pH, HCO3).
* Sudden desaturation during the transport of severe respiratory failure patient is a major risk. Regularly assess the patient and adjust PEEP or Fio2 as needed.

**Circulation**

* Ensure adequate intravenous access (usually 2 large-bore peripheral or central lines) and assess fluid balance. **Hypotension, tachycardia, or arrhythmias** are some of the risk associated with transfer. Administer fluids or vasopressors if necessary to maintain blood pressure.
* Continuous monitoring of vital signs
* Check electrolytes (especially potassium, calcium, and bicarbonate), and acid-base status to avoid complications during transport.

**Disability**

* GCS, pupil reaction
* Sedation and Analgesia: Ensure adequate sedation and analgesia to keep the patient comfortable and prevent self-extubation or agitation during transport. In some cases, paralysis (with neuromuscular blockers) may be required for transport, especially for patients on high levels of ventilation support to prevent desynchronisation
* Check for any signs of seizure activity, particularly since severe respiratory failure could indicate cerebral hypoxia

**Exposure**

* Expose the patient to examine for any obvious signs of trauma, rash, or other abnormalities. Ensure that the patient's body temperature is stable, and they are warm enough to prevent hypothermia.

**Additional consideration:**

* Confirm that all treatments (e.g., antibiotics, steroids, diuretics) are appropriately adjusted for the patient's condition and stable for transport.
* Risk of aspiration pneumonia so transport the patient with head of the bed elevated.
* Evaluation of transport readiness – stay and play or scoop and run. Consider delaying transfer if the patient is not yet stable.
* Ventilator or equipment can malfunction so it is important to have pre-transfer check completed. Have back up equipment ready and access to transfer bag to handle unexpected equipment failure.
* Ensure that the transport team (e.g., critical care transport doctor or nurse) is transfer trained and understands how to handle emergency situations during transfer.

**Coordination and communication with the receiving hospital**

Provide a detailed handover to the receiving hospital team, including information about the patient’s underlying condition, current treatment plan, ventilator settings, and any other special considerations.

Ensure the receiving hospital’s critical care team is ready to receive the patient and provide immediate care upon arrival.

**Contingency Plans for Emergency Situations**

Have a clear plan in place for potential emergencies such as airway complications, arrhythmias, or sudden respiratory or cardiac events. Ensure that emergency medications are readily available during transport

Establish clear communication channels with the receiving hospital in case the patient requires urgent intervention upon arrival. Top of Form

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**Conclusion:**

The safe transfer of an intubated and ventilated severe respiratory failure patient requires careful planning and risk mitigation. It is crucial to ensure the patient remains hemodynamically stable, ventilated adequately, and continuously monitored throughout the process. Proper preparation of the transport team, equipment, and the receiving hospital is vital to minimise risks and ensure the best outcome for the patient.