

One Year Review of High Flow Oxygen Delivery System Outcomes

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Introduction

- Improving gas exchange and decreasing work of breathing are clinical endpoints when managing patients with respiratory failure.
- Often the interventions are to provide high flow oxygen via a mask or more aggressive form of clinical management such as non-invasive or mechanical ventilation.
- High Flow Oxygen (HFO) delivery system provide an alternative or a bridge between high flow oxygen administration and forms of ventilation.

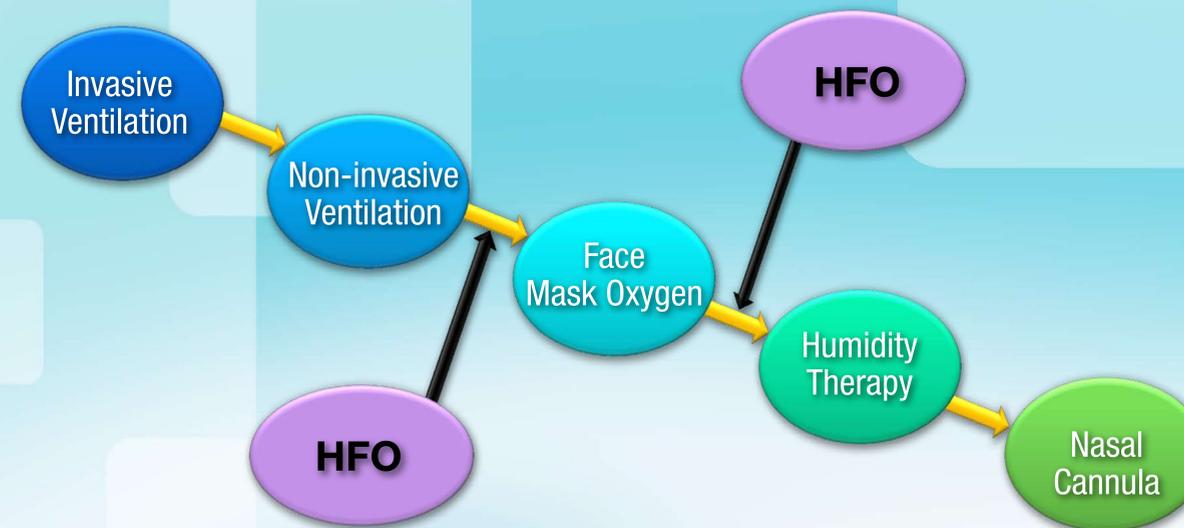
High Flow Oxygen

- High Flow Oxygen can be provided via a nasal cannula or via a tracheal adapter.
- Providing flow rates up to fifty liters a minute, delivers high molecular humidity and allows precise oxygen delivery.
- It may reduce the need for Non-invasive Ventilation (NIV) and intubation in selected patient populations.

High Flow Oxygen Delivery Systems



High Flow Oxygenation Utilization



Methods

- We examined the number of patients who were placed on HFO over a twelve month time frame in our medical-surgical ICU.
- All patients placed on HFO either had a SpO₂ <88% or had an increased work of breathing (noted by a respiratory rate >30 or the use of accessory muscles).
- Reasons for HFO flow utilization, duration of use, number of times placed on HFO and therapy outcomes were assessed.

Results

- Two hundred patients, 120 males and 80 females, were placed on HFO from January 1, 2013 to December 31, 2013.
- Patient ages ranged from twenty-one to ninety years old.
- One Hundred thirty-three patients (67%) were placed on HFO for the improvement of oxygenation and 67 patients (31%) were placed for increased work of breathing or for humidification enhancement.

	Males	Females	Oxygen	NIV	MV	Expired
HFO	120	80	105 (52.5%)	50 (25%)	40 (20%)	5 (2.5%)
ICU LOS			7.5 days	11.4 days	18.5 days	

Conclusion

- The utilization of High Flow Oxygen allowed our clinician team to improve oxygenation and decrease work of breathing without the need for the institution of non-invasive or invasive mechanical ventilation in over fifty percent of patients who were placed on it and ICU length of stay was reduced in this group.
- High Flow Oxygen delivery system provides another weapon in the arsenal of oxygen therapy in improving gas exchange and reducing work of breathing.
- It may reduce the need for more aggressive forms of therapy; reduce the need for intubation and decrease duration of ICU stay.
- Next research is to identify the clinical characteristics of patients who are maintained on HFO and those who require escalation of therapy.

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