

Introduction to Ventilation Discussion

Who are you talking to? & What do they care about?



Start with 'The Why'

- Nearly every physician or clinician cares about at least one of these three things:
 1. Reducing readmission rates
 2. Decreasing ER and hospital visits
 3. Increasing patients' quality of life and days of living
- So, start with the data. Initiated early, NIV can:
 - Decrease risk of hospital readmission by ~ 50%¹
 - Decrease overall risk of hospitalization by ~ 28%²
 - Decrease mortality rate by ~ 64%³

1 Suh, E. et al. Home Mechanical Ventilation for Chronic Obstructive Pulmonary Disease: What Next After the HOT-HMV Trial? *Respirology* 2019 (24) 732–739.

2 Frazier, W. et al. NIV at Home Improves Survival and Decreases Healthcare Utilization in Medicare Beneficiaries with COPD with Chronic Respiratory Failure. *Respiratory Medicine*, December 2020. Vol. 177

3 Elliott, M. Domiciliary NIV for COPD: Where Are We Now? *The Lancet Respiratory Medicine*. July 2014.

- However, two things must happen for those outcomes to become reality
 1. Patients need to be started on therapy early because the longer we wait the more benefits begin to wane¹
 2. Patients need to adhere to NIV therapy. NIV therapy that can be adjusted to meet the patients comfort standards is more likely to drive compliance



- **LUISA Comfort Setting:** Sensitivity Settings and Inspiratory Lockout
 - Inspiratory sensitivity is able to be adjusted as the patient's status declines
 - The ability to set it extremely sensitive is important as the disease progresses
 - Inspiratory lockout allows that extreme sensitivity without the risk of breath stacking and asynchrony with the vent

- **LUISA Comfort Setting:** Sensitivity Settings and Inspiratory Lockout
 - Inspiratory sensitivity is able to be adjusted as the patient's status changes
 - The ability to set it extremely sensitive may be most important when your patients have been deconditioned by long hospital stays and would benefit from the ability to trigger a breath very easily
 - Inspiratory lockout allows that extreme sensitivity without the risk of breath stacking and asynchrony with the ventilator



- **LUISA Comfort Setting: Pressure Drop**
 - The ability to change the slope of decline in pressures can be beneficial for COPD and Obesity Hypoventilation Patients
 - Allowing the patient to have a more gradual pressure decline grants the COPD patient more pressure to exhale against. This can provide a more complete exhalation and limits intrinsic PEEP, allowing for a more effective triggering of subsequent breaths.
 - Mimics pursed lip breathing. A COPD patient is likely familiar with this technique, which can make ventilator therapy more comfortable
 - For OHS patients it can act as a sort of lung recruitment as well



- **LUISA Comfort Setting: EPAP Algorithm**
 - The ability to provide a comfortable nights sleep is one of the goals. The auto rate algorithm on the LUISA is flow based and is designed so the patient will not feel a flutter or oscillation during the rise from EPAP min. to max. Forced oscillation may be uncomfortable and inhibit patient compliance
 - The flow-based algorithm is designed to ensure a smooth rise in pressure in the event the airway patency decreases

- **LUISA Comfort Setting:** Auto Rate Algorithm
 - LUISA learns the patient's normal respiratory pattern by calculating two factors – Minute Ventilation and Respiratory Rate
 - This helps to ensure that in the event a back up rate is needed, it is more physiologically comfortable for the patient
 - Auto-EPAP rate is titrated to treat upper airway obstruction in the event of COPD/OSA overlap syndrome

Additional Overall Benefits

- **LUISA Comfort Setting: Target Volume Speed**
 - Can be set to ensure patient comfort based on patient's sensitivity to pressure changes
 - Patients who are very sensitive to pressure increases will often feel as if the ventilator is 'just ramping up and going crazy,' which leads to a mistrust of the device. The device's ability to set the ventilator's target volume speed so that the pressure increases minimally every 5-8 breaths may increase compliance



LUISA

The Next Generation of Home Ventilation



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