

# AIRWISE

## CHALLENGE & OBJECTIVE

Mechanical ventilation is increasingly recognized as a critical intervention that requires careful management to minimize potential harm. Adhering to lung protective ventilation strategies is essential, as it significantly reduces the risk of ventilator-induced lung injury (VILI) and improves patient outcomes. However, optimizing ventilator settings is complex, time-consuming, and dependent on staff experience. With healthcare systems across Europe facing staff shortages, AIRWISE aims to develop a transformative solution for ICU care that enhances efficiency, empowers caregivers, and ensures patient care by improving compliance with lung protective ventilation.

## KEY FIGURES

**40%**

**Only 40% adherence to lung protective tidal volume ventilation [1]**

**9**

**Mechanical ventilation alarms currently per hour in ICU**

**+/- 10%**

**Better adherence to lung protective ventilation with CDSS**

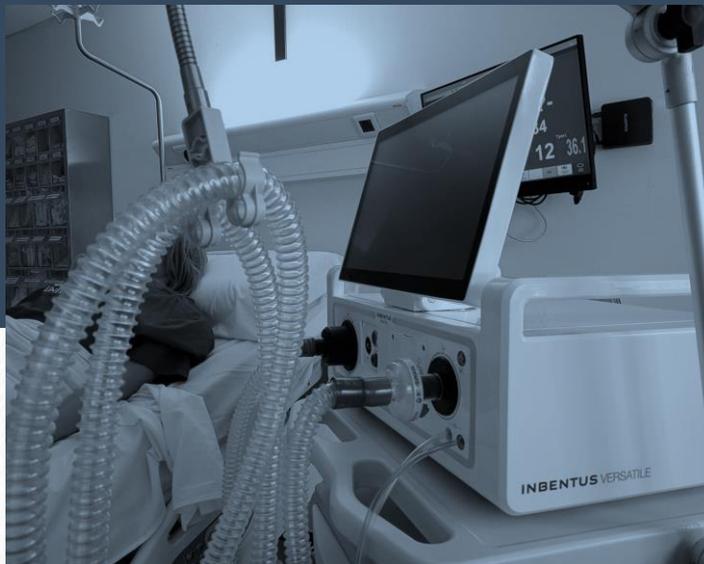
[1] Knighton et al. (2020). <https://doi.org/10.1186/s43058-020-00057-x>

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Co-funded by  
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## PROJECT INNOVATIONS

- 1) **A respiratory module with new VILI-reducing ventilation modes inspired on:** 1) Flow Controlled ventilation and Flow controlled Expiration, (2) High Frequency Superimposed Oscillation Ventilation.
- 2) **Smart alarm management system (SAMS)** To reduce the amount of clinically irrelevant (ventilator) alarms in patient monitoring, with at least 50%.
- 3) **Clinical decision support system (CDSS)** Visual cognitive aids will help clinicians in making decisions, reducing errors, misdiagnosis, and providing consistent patient information.

The new respiratory module, the SAMS, and the CDSS will be integrated into a complete AIRWISE ICU ventilator.

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