

Health Technology Assessment on ICU Ventilators with Neurally Adjusted Ventilatory Assist Kalam Institute of Health Technology (KIHT), Visakhapatnam

Recommendations

At the cost-effectiveness cut off of 1 GDP (INR 2,31,784) for procurement in public health programmes, the proposed intervention is not only highly cost effective but cost saving.

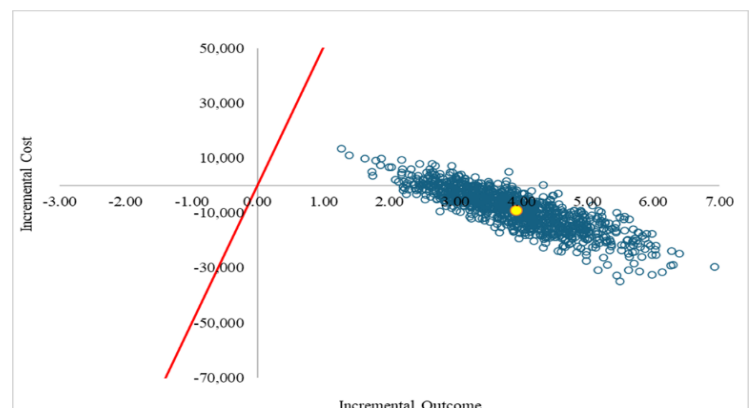
Background

- Respiratory distress in ICU patients is a significant healthcare challenge, requiring mechanical ventilation (MV) for life-saving support. However, conventional MV modes often lead to complications due to patient-ventilator asynchrony.
- Neurally Adjusted Ventilatory Assist (NAVA) is a mode of ventilation that uses neural signals from the diaphragm, improves synchronization and offers better patient outcomes compared to conventional Mechanical Ventilation (CMV) modes.
- To assess the clinical and cost-effectiveness of NAVA compared to CMV modes for patients with respiratory distress, from the healthcare system's perspective, and assess whether investing in NAVA-compatible ventilators is a viable decision.

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| Population (P) | Patients (both adult & pediatric) who require mechanical ventilation support in intensive care units for respiratory distress |
| Intervention (I) | Neurally Adjusted Ventilatory Assist (NAVA) |
| Comparator (C) | Conventional Mechanical Ventilation (CMV) modes |
| Outcome (O) | <ul style="list-style-type: none"> Reduction in duration of MV Incremental cost-effectiveness ratio (ICER) Net Monetary Benefit (NMB) |
| Perspective | Health system perspective |

Key Findings

- The study showed adoption of NAVA reduces the cost per patient by 13% compared to CMV, while also lowering ICU resource utilization through reduction in MV duration by 42%.
- NAVA demonstrated significant cost savings with an ICER of ₹-2,282. The incremental NMB is ₹7,78,785, showcased its substantial economic advantage and value.



Conclusion

- Cost effectiveness:** The ICER/ QALY gained is Rs -2,282 for inclusion of ventilators supporting NAVA mode
- Cost saving:** The strategy of ventilators supporting NAVA mode incurs an incremental net monetary benefit of Rs 7,78,785.
- Cost for NAVA** is Rs 60518 and **CMV** is Rs. 69451