



# Research Week 2022

## Impact of Telecritical Care Monitoring by Registered Nurses on Time-Percentage Adherence to ARDSNet Mechanical Ventilation Protocol

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### Keywords

Telecritical care, Mechanical ventilation, Quality measures, Telemetry

### Abstract

#### Purpose

Beginning in 2020, Oregon Health and Science University (OHSU) and General Electric Healthcare (GEH) collaborated on the creation of the OHSU Virtual Intensive Care Unit (VICU). Ultimately, the purpose of the VICU is to allow OHSU to provide real-time, remote, telecritical care support to regional medical centers throughout Oregon in order to facilitate local care of complex patients. To implement this system, OHSU has partnered with GEH as the initial test site of the GEH Mural™ platform, which integrates continuous telemetry from all patient-connected devices, laboratory values, and a real-time audio/visual feed into a single computer interface.

To better characterize the effectiveness of the VICU, and as a demonstration of the type of analysis made possible by continuous and unified telemetry, we are conducting a quality-of-care investigation measuring time-percentage adherence to the ARDSNet protocol of mechanical ventilation before and after the addition of continuous registered nurse (RN) monitoring.

#### Materials and Methods

This is a retrospective cohort study of all patients admitted to the combined total of five adult ICUs between OHSU and Hillsboro Medical Center (HMC), comprising 90 ICU beds, and subsequently placed on mechanical ventilation between January 1, 2021 and February 4, 2022. Demographics and illness severity are determined at time of ICU admission and used to validate subject uniformity between units and over time. The mean time-percentage adherence to continuous ARDSNet parameters (tidal volume, positive end-expiratory pressure, and oxygen saturation) of each unit is then calculated over the course of mechanical ventilation and compared before and after implementation of continuous RN monitoring of the VICU. An analysis combining all units is also performed.

## Results & Conclusion

Pending data collection and analysis, which is anticipated to be completed by April 27, 2022.