A/Professor Mark Howard, lead researcher and respiratory and sleep medicine clinician

# *Austin Health:* NIV@Home: a digital approach to care

Non-Invasive Ventilation at Home, or NIV@Home, is a new model that provides clinicians with access to real-time ventilation data, so they can make informed decisions with their patients to prevent respiratory failure.

Currently, the Victorian Respiratory Support Service (VRSS) at Austin Health provides care for more than 1,000 patients with respiratory failure, who require home ventilation by using Non-Invasive Ventilation (NIV).

"I have witnessed increasing difficulty for patients with chronic respiratory failure in accessing care due to restricted access to acute hospitals, infection risk during the pandemic, and the need for carers to enable this vulnerable patient group to support travel for care," says Associate Professor Mark Howard.

## Existing model expensive and time-consuming

The current treatment pathway involves hospital admission to fit and adjust equipment, which can take between 4-6 hours, as well as the need for follow-up appointments. Growth in patient numbers, combined with a shortage of inpatient beds, contributes to delays in initiating treatment and responding to patients deteriorating in the community.

"This research will determine what combination of remotely accessible ventilator data combined with simple physiological monitoring can be used to safely implement non-invasive ventilation for chronic respiratory failure in the home," explains Associate Professor Howard.

Despite the increasing demand for telehealth-based care, there is a lack of evidence for clinicians to determine what is required to provide safe remote care and understand when remote patient care is risky.

## The digital approach

NIV@Home combines science, digital platforms and clinical guidelines to offer a person-centred approach to care.

This approach to care also means that regular observation and communication can be achieved through a digital patient portal. This allows clinicians to respond to changes to patient in-home ventilation settings to prevent respiratory failure.

"The Avant Foundation grant will support our research to implement safe, high quality care in the home, and to improve the lives of vulnerable patients with respiratory failure," says Associate Professor Howard.

"Furthermore, the grant will underpin our vision to improve access to care by integrating home ventilator data into medical records, avoiding the need for patients to attend acute hospitals and enabling clinicians to make better treatment decisions."

## Looking ahead

The NIV@Home project will take advantage of emerging technical capabilities for non-invasive ventilation. It will aim to combine remote access to ventilator data in the home with telehealth that will help fulfill these needs.

"Once fully integrated into practice, clinicians will be able to review ventilator data during telehealth consultations to make better and safer decisions about treatment effectiveness for respiratory failure and adjustment of home ventilation settings," says Associate Professor Howard.

*Associate Professor Howard of Austin Health was the lead researcher of the project that received an Avant Foundation grant. He is a full-time clinician-research and works at both the University of Melbourne and Monash University.*

Visit **avantdifference.org.au** for application information.

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Despite the increasing demand for telehealth-based care, there is a lack of evidence for clinicians to determine what combination of information is required to provide safe remote care, when patients cannot be evaluated face to face and in which patients remote care is risky.”

Associate Professor Mark Howard, Lead researcher at Austin Health