



CANADIAN SOCIETY OF RESPIRATORY THERAPISTS

SOCIÉTÉ CANADIENNE DES THÉRAPEUTES RESPIRATOIRES

## **Position Statement on Mechanical Ventilation During a Period of Resource Scarcity**

### **Preamble**

As frontline providers of care for mechanically ventilated patients, respiratory therapists may be faced with situations in which there is limited availability of the critical equipment or other supplies which constitute essential components of established best practice guidelines. This could include limited supplies of mechanical ventilators during a period of increased demand. This very scenario has already been witnessed in several jurisdictions around the globe as a result of the current COVID-19 pandemic. Projections of surging demand for mechanical ventilation indicate that shortages of mechanical ventilators may be experienced across Canada.

The Canadian Society of Respiratory Therapists (CSRT) champions evidence-informed practice for respiratory therapists at all times. Respiratory therapists are at all times expected to follow best practices, in accordance with approved protocols, medical directives, guidelines and applicable regulations (e.g. privacy, infection and prevention control, safety, etc.), in the provision of mechanical ventilation.

The recommendations contained in this position statement apply to issues of heightened concern in the provision of mechanical ventilation by respiratory therapists during a period of resource scarcity (such as during an outbreak of a communicable respiratory disease).

### **Position**

Respiratory therapists should follow the principles of evidence-informed practice when making clinical decisions regarding the management of mechanical ventilation during times of resource scarcity. This includes when making clinical decisions on how mechanical ventilation is managed, and what mechanical ventilators are appropriate in any particular clinical case.

The following are several specific recommendations for respiratory therapists relating to application of mechanical ventilation in the context of resource scarcity, particularly during the current COVID-19 pandemic.

### **Practice Recommendations**

1. It is recommended that mechanical ventilators, whether categorized as invasive or non-invasive (NIV) in nature, be utilized according to their manufactured purpose and in

accordance with their intended use as approved by Health Canada.

2. It is recommended that respiratory therapists do not attempt to ventilate more than one patient at a time with a mechanical ventilator designed for a single patient.
3. It is recommended that decisions relating to resource allocation that may impact respiratory therapists' adherence to best practices during times of scarcity should be made in a manner that takes all available evidence into account. This includes consideration of patients' values and perspectives and ethical decision-making guidelines/frameworks.

### **Rationale**

Regulatory processes governing the use of medical devices in Canada ensure their safety, effectiveness and quality.<sup>1</sup> This process applies to mechanical ventilators, whether categorized as invasive or non-invasive (NIV) in nature. As part of this process, the risk and benefits of each device is assessed relative to their intended use. Using these devices in ways other than those that are consistent with their intended and assessed use, therefore, may pose risks to the safety of patients and to the effectiveness of the devices (and thus their clinical impacts).

In particular, unknown risk may be posed to the safety of patients if one mechanical ventilator is used to support the clinical need of more than one patient at once.<sup>2</sup> Important cautions against ventilating more than one patient with a single mechanical ventilators exist in the literature.<sup>3-5</sup> Attempting to ventilate multiple patients with COVID-19 (or any context where non-homogenous lung disease exists) could lead to poor outcomes and high mortality rates for each patient involved.<sup>2</sup>

Decision making in clinical practice is often complex, and can be challenging in times of resource scarcity. At all times respiratory therapists must weigh the benefits and risks, inconvenience, and costs associated with management strategies.<sup>6</sup> In doing so, respiratory therapists are called upon to use their clinical expertise to consider the established literature relative to the decision, as well as the patient's values and preferences.<sup>7,8</sup> Values and preferences refers to the underlying processes we bring to bear in weighing what patients and our society have to gain or lose when respiratory therapists make a clinical decision.<sup>7</sup> Additionally, given the limitations of unsystematic clinical observations and opinions, respiratory therapists must make decisions in recognizing that there exists a hierarchy of evidence.<sup>7</sup>

As part of interdisciplinary care teams, respiratory therapists may be called upon to make exceptionally difficult resource allocation decisions. Considering the recommendations above, it may be necessary to provide available resources to patients most likely to receive benefit from those resources, rather than placing one (or more) patient(s) at unknown levels of risk by implementing an unproven intervention.<sup>2,6</sup> Respiratory therapists should further consult their local resource allocation guidelines and/or seek guidance from established advisory committees/boards (e.g. ethical decision-making panels) when faced with such dilemmas.<sup>6</sup>

## About the Canadian Society of Respiratory Therapists (CSRT)

The CSRT is the national professional association representing respiratory therapists across Canada. The CSRT promotes the respiratory therapy profession at the national and international level, and is the credentialing agency for respiratory therapists who practice in non-regulated jurisdictions in Canada.

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