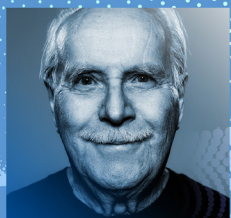




# CARESCAPE™ R860 Ventilator

Intuitive, individualized ventilation



# Ventilator control with smart device navigation

## CARESCAPE R860 ventilator advantages

- **Swipe-screen navigation**

The intuitive user interface with optional views and workspaces helps streamline your daily workflow and reduce mental fatigue.<sup>1</sup>

- **Actionable data**

Decision support tools such as comparing eventcentric trends and visual spirometry help you plan next steps and keep track of patient progress.

- **Individualized therapy**

Perform advanced clinical maneuvers tailored for each patient to ensure lung protective ventilation, assess readiness to wean (SBT-weaning mode), determine nutrition status using Indirect Calorimetry, and implement protocols for O<sub>2</sub> Therapy.

Build confidence in your ability to deliver tailored respiratory therapy for your ICU patients with the CARESCAPE™ R860 Ventilator. The CARESCAPE user interface looks and feels familiar the first time you use it. By making the settings easy to access and adjust, your learning curve is reduced, so you can focus your attention on providing compassionate patient care and improving outcomes.



### Reduce your mental workload and catch preventable errors

A study in the *Annals of Intensive Care*<sup>1</sup> involved 20 clinicians who evaluated six models of ICU ventilators. The authors concluded that the CARESCAPE R860 ventilator required the lowest levels of mental workload, had one of the best usability scores, and had one of the highest objective task completion rates.

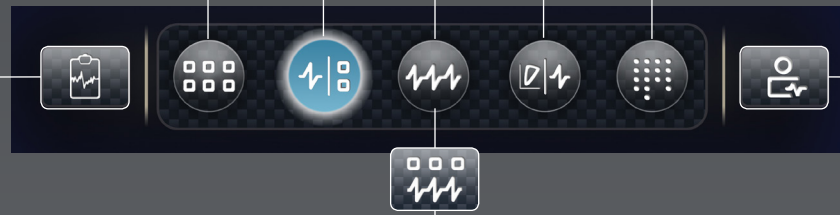
1. Marjanovic, N. S., Simone, A. D., Jegou, G., & L'Her, E. A new global and comprehensive model for ICU ventilator performances evaluation. *Annals of Intensive Care*. 2017; 7:68

# Select screen views with a single touch

Go from basic to advanced patient information by choosing a screen view that complements your workflow at that moment in time. You control what information appears on the screen, so you can plan your treatment options or determine when a patient is ready to wean off the ventilator.



Basic ● Basic Waveform ● Advanced Waveform ● Split Screen ● Charting



**PAST**  
HISTORICAL TRENDS

- Graphic Trends
- Numerical Trends
- Trends Log
- Snapshot Trends

Display trends and reveal event-centric historic data to follow patient progress using an interactive master timeline slider.

**PRESENT**  
PATIENT STATUS

- Basic
- Basic Waveform
- Advanced Waveform
- Split Screen
- Charting

Assess current respiratory status by selecting a screen view (see above) with the desired level of detail.

**FUTURE**  
CLINICAL DECISION SUPPORT

- SBT
- FRC
- Spirometry
- Metabolics
- Calculations

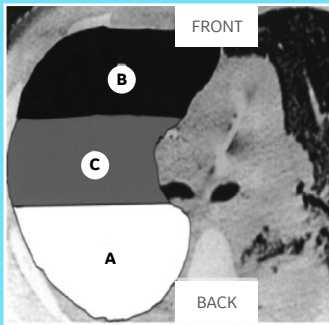
Individualize settings and predictive protocols to help assess and design respiratory therapy.

Swipe-screen navigation — Travel through time to decide next steps

# Advanced tools to help reduce Length of Stay

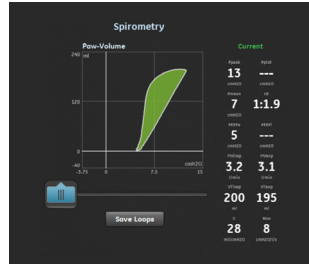
## Lung Protective Ventilation (LPV) Tools

If the pressure and volume settings on the ventilator are not individualized to the patient, there is a risk of ventilator-induced lung injury. Understanding the volume and pressure in the patient's lungs can help avoid pulmonary complications.



CT scan that shows uneven distribution of disease.<sup>1</sup> Each zone has unique treatment needs.

**A = Atelectasis**  
**B = Baby healthy lung**  
**C = Cyclic Opening/Closing**



## Pressure Settings and Tracheal Pressure

The SpiroDynamics™ Sensor System is a patented CARESCAPE R860 feature that measures tracheal pressure with an intratracheal pressure sensor. The system excludes the effect of endotracheal tube resistance on the pressure measurements and the P/V loops, allowing a better view of the actual pressure delivered to the patient's lungs.

## Indirect Calorimetry (IC) and Nutrition Therapy

Proper nutrition plays a vital role in the recovery of your ventilated patients.<sup>3,4</sup> This is why finding the right nutritional balance for a patient's individual needs is critical in speeding up the healing process. The CARESCAPE R860 ventilator integrates a respiratory module and IC measurement software, so you can continuously capture gas exchange and energy consumption of your patient to help you customize their nutritional support. The system measures inspired  $O_2$  ( $VO_2$ ) and expired  $CO_2$  ( $VCO_2$ ) to calculate the Resting Energy Expenditure (EE) and the Respiratory Quotient (RQ).



CARESCAPE Respiratory Module (optional) actually measures — not just estimates —  $VO_2$  and  $VCO_2$  and the ventilator software displays EE and RQ.

## CARESCAPE R860 Ventilator offers an integrated solution

Lung zone	CARESCAPE R860 advanced tools	
<b>A = Atelectasis</b>	▶ FRC & static compliance	▶ FRC INview <sup>2</sup>
<b>B = Baby healthy lung</b>	▶ P-V curve	▶ SpiroDynamics
<b>C = Cyclic Opening/Closing</b>	▶ PEEP titration & Vd/Vt	▶ PEEP INview & Vent Calcs



## Optimize protocols to reduce length of stay (LOS)

When researchers combined the benefits of Functional Residual Capacity (FRC) and Indirect Calorimetry (IC) measurements into the energy expenditure and optimized oxygenation (EEOO) protocol, they discovered it **reduced time on the ventilator from 7.2 days to 4.3**. This also led to reductions in ICU and overall hospital LOS.<sup>5</sup>

- Moloney E D and Griffiths M J D, Protective ventilation of patients with acute respiratory distress syndrome, 2004; British J Anaes. 2004; 92(2): 261-270.
- Chiumello D, Nitrogen washout/washin, helium dilution and computed tomography in the assessment of End Expiratory Lung Volume, Crit Care Med 2008; 12: R150 doi:10.1186/cc7139.
- Correia M, et al. Evidence-based recommendations for addressing malnutrition in healthcare: an updated strategy from the feed M.E. Global Study Group, J Am Med Dir Assoc 2014; 15: 544-550.
- Neumayer LA, Smout RJ, Horn HG, Horn SD. Early and sufficient feeding reduces length of stay and charges in surgical patients. J Surg Res. 2001;95(1): 73-77.
- Ang et al Optimizing energy expenditure and oxygenation toward ventilator tolerance is associated with lower ventilator and intensive care unit days, Trauma Acute Care Surg 2019; 87(3): 559-565.

# Advanced tools to help reduce Length of Stay

## Reduce weaning time and optimize protocols

Over 40% of the time spent on managing patient mechanical ventilation is allocated on weaning the patient.<sup>1</sup> Using the Spontaneous Breathing Trial (SBT) mode on the CARESCAPE R860 ventilator can help you assess when a patient is ready to wean and breathe on their own. The SBT program allows clinicians to administer trials in a consistent manner, while providing continuous trending and documentation of results to assess progress during trials. By using a standardized weaning protocol, ICU clinicians can reduce the amount of time spent weaning by 78%.<sup>2</sup>

## Clinicians can set SBT mode stop criteria such as:

- SBT duration
- Apnea time
- High and low expired minute volume
- High and low respiratory rate

Screen shows comparison of past weaning trials



Once the trial is complete, clinicians can decide to continue a new SBT or resume the current mode of ventilation.

## Lower reintubation risk with integrated O<sub>2</sub> Therapy

Multiple studies have demonstrated that patients benefit from High Flow O<sub>2</sub> Therapy. These benefits include reduced work of breathing, pharyngeal dead space washout, and increased PEEP, which can lead to alveolar recruitment.<sup>3,4,5</sup> And, when used after mechanical ventilation, High Flow O<sub>2</sub> Therapy has been shown to reduce the risk of reintubation.<sup>6</sup>

Easing ICU workload is the goal of integrating O<sub>2</sub> Therapy with the CARESCAPE R860 ventilator, so you have a seamless transition from mechanical ventilation to prescribed oxygen treatments. In only a few clicks, you can switch your patient to O<sub>2</sub> Therapy without changing your breathing circuit.

- Trendlines on the display help track patient progress
- Use either single-limb or double-limb circuits
- Circuit-Pressure bar graph indicates resistance to flow provided by the cannula and applied patient interface. It can be used to alert you to any occlusions that may cause the patient to desaturate



1. Esteban A. et al. Modes of mechanical ventilation and weaning. Am J Respir. Crit. Care Med. 1994; 106:1188-1193.
2. Blackwood B. et al. Use of weaning protocols for reducing duration of mechanical ventilation in critically ill adult patients: Cochrane systematic review and meta-analysis. BMJ 2011; 342: c7237.
3. Gotera C. et al. Clinical evidence on high flow oxygen therapy and active humidification in adults. Pulmonology Journal. 2013; 19(5): 217-227.
4. Renda T. et al. High-flow nasal oxygen therapy in intensive care and anaesthesia. British Journal of Anaesthesia. 2018; 120(1): 18-27.
5. Dysart K et al. Research in high flow therapy: mechanisms of action. Respiratory Medicine. 2009; 103(10): 1400-1405.
6. Maggiore SM, et al. Am J Respir Crit Care Med. 2014 Aug 1;190(3):282-8.

# Connecting intelligence to individualized patient care

Quickly manage all parameters of respiratory care for your patient with the CARESCAPE R860 ventilator. Its modern user interface is designed for fast access to core functions, so you can quickly respond to patient events. The CARESCAPE R860 ventilator makes it easy to customize settings, workspaces and views, so you can gain an understanding of each patient's respiratory condition.



## Minimize downtime and be ready for your next patient

GE Healthcare experts stand ready to support you with flexible service offerings to fit your workflow and budget. From support for your in-house biomedical team to comprehensive service agreements, we can help you choose a plan that complements your staff's expertise with our GE Healthcare engineers, so you can schedule reliable care throughout the life of your machine.



## CARESCAPE R860 ventilator

- A 360° Alarm light
- B 15" Touch display
- C Integrated keypad & trim knob
- D Optional airway module bay
- E Inspiratory safety guard
- F Exhalation Valve Assembly (EVA)
- G Dovetail to support adjustable mounting rail (on both sides)
- H Locking casters (all wheels lock)
- I Exhalation Valve Heater (optional)

# Supplies and accessories help support positive outcomes



## Respiratory Gas Module

Using the integrated gas module on the CARESCAPE R860 ventilator allows clinicians to perform advanced lung measurements like FRC as well as perform Indirect Calorimetry studies to assess patient nutritional status. The gas module contains O<sub>2</sub> and CO<sub>2</sub> sensors to directly measure gas exchange and energy consumption.

## Inspiratory Safety Guard (ISG)

This ISG is required to protect the pneumatic engine from external contamination, while the patient breathing circuit is connected to the ventilator. It is a mechanical, hydrophobic filter (not electrostatic) with a filtration efficiency of >99.999% for viral and bacterial particles.

Whether you want to control infection or measure new patient parameters, use CARESCAPE R680 compatible consumables, accessories and modules for optimal performance.

## Exhalation Valve Assembly (EVA)

The flow sensor is one of the most important components of your critical care ventilator. It automatically checks patient airway flow and pressure 250 times per second, making it the “eye” of your ventilator. Both reusable and single-patient-use (shown here) options are available. The exhalation valve housing contains the expiratory flow sensor and water trap.

## Reasons to choose the CARESCAPE R860 Ventilator

Feature	Advantage — How it supports you
<b>Intuitive, familiar interface</b>	Easy-to-access functions streamline daily workflow; save preferred views and easily toggle between saved screen settings; reduces mental fatigue.
<b>View past, present and future data</b>	Gain a comprehensive understanding of patient progress by swiping left to view historical trends, center view to see patient status and swiping right for clinical decision support tools that help plan future treatment.
<b>Advanced therapy with decision support tools</b>	Reduce length of stay by employing unique maneuvers and monitoring parameters that support Lung protective ventilation (FRC, SpiroDynamics, Vd/VT and PEEPINview), Indirect Calorimetry, Spontaneous Breathing Trial (SBT) for weaning, and High Flow O <sub>2</sub> Therapy.
<b>Protocolize weaning</b>	Provides consistency across ICU clinicians with an SBT mode that is customized for each patient; Quickly set SBT time, Stop criteria and Resume current ventilation mode. Leaks are measured on a breath-by-breath basis for increased responsiveness.
<b>Neonate support tools</b>	Volume Support ventilation mode continuously adjusts to help support spontaneous breathing. Noninvasive ventilation modes such as nCPAP and High Flow O <sub>2</sub> Therapy can help prevent the need for intubation.
<b>High Flow O<sub>2</sub> Therapy</b>	Increases operational efficiency by using one breathing circuit throughout the entire intensive care workflow for each patient (example: non-invasive ventilation > mechanical ventilation > O <sub>2</sub> therapy with one machine).
<b>Flexible service options</b>	Helps reduce downtime with GE Healthcare service programs that fit your budget and complement your biomed engineers' expertise.



Products may not be available in all countries and regions. Full product technical specifications are available upon request. Contact a GE Healthcare Representative for more information. Please visit [www.gehealthcare.com](http://www.gehealthcare.com). Data subject to change.  
© 2020 General Electric Company. GE, the GE Monogram, CARESCAPE, INview and SpiroDynamics are trademarks of General Electric Company. Reproduction in any form is forbidden without prior written permission from GE. Nothing in this material should be used to diagnose or treat any disease or condition. Readers must consult a healthcare professional.  
JB00157XX DOC2445871 January 2021