# Dräger



# Our mission:

# Improving outcomes



410/0 of patients who are artificially ventilated for at least 14 days, will survive the next year.

As Your Specialist in Critical Care, we focus on reducing mortality rates in the ICU. Supporting patient outcome and increasing staff satisfaction in the ICU via connected technologies and services that help achieve therapeutic goals faster and safer is what drives us.

# AVOIDING ICU-ACQUIRED WEAKNESS

- Start the weaning process as early as possible to help reduce ventilation time.
- Encourage spontaneous breathing, which helps train respiratory muscles and start early mobilization activities.
- Improve sedation management and optimize patient interaction.

# AVOIDING COGNITIVE IMPAIRMENT

- Provide a comfortable and supportive environment that helps your patient feel calm and at ease.
- Turn the ICU into a healing environment and enable the patient to feel more comfortable in a family-friendly integrated surrounding.



# PREVENTION OF VALI / ARDS

- Protect the lung with personalized ventilation strategies.
- Support spontaneous breathing at any time to provide a seamless transition from controlled ventilation to patient contribution.
- Help improve clinical results with decision supporting insights from multiple sources.

# in Intensive Care



# All ventilation





Evita® V600

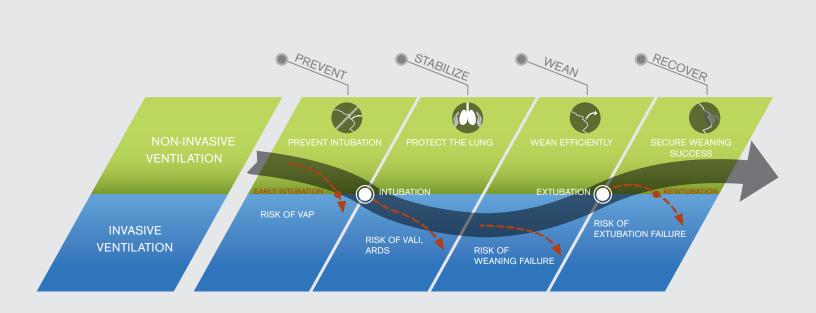
# CRITICAL CARE VENTILATION

Evita devices have supported you for over 25 years with high quality standards, the ability to configure and upgrade your machine, and advanced training and service concepts. Experience the next level of ventilator operation.

The Evita V800 and Evita V600 combine high performance ventilation with an aesthetic design, enabling rapid deployment and safe operation. A patient-centered and integrated ventilation workplace ensures caregivers can care for various levels of patient acuity with efficiency and cost-effectiveness.

# strategies

# combined in one device



# **RESPIRATION PATHWAY**

As non-invasive as possible, as invasive as necessary: Discover the variability and diversity of our treatment tools for use along the respiration pathway. They enable you to administer protective mechanical ventilation therapy in your ICU.

# **PREVENT**

Avoiding intubation as long as possible helps to decrease the possibility of patients developing ventilator-associated pneumonia (VAP).

# **STABILIZE**

Stabilizing your patient is crucial to protecting their lungs from potential conditions such as ventilator-associated lung injury (VALI), which could result in acute lung injury (ALI) or acute respiratory distress syndrome (ARDS).

### WEAN

Weaning your patient efficiently reduces incidences of ALI or ARDS.

# **RECOVER**

Ensuring successful weaning and avoiding reintubation improves your patient's recovery.

# Clear user interface that guides you



# **OPERATING PRINCIPLE**

- Effective and safe to operate even in stressful situations due to intuitive menu access to both settings and your clinical data.
- All patient data, alarms and trends are fully recorded. Conveniently exported via USB interface.
- Switch between multiple view configurations with the touch of a finger.
- Step-by-step guidance leads you through every procedure.

# A BRILLIANT USER INTERFACE

- Easy to read and navigate due to our contemporary color concept and glass touch display.
- Safe and intuitive operation is supported by tablet-like operating system and easy access to sub-menus.
- The 360° alarm light flashes in the color of the corresponding alarm priority and is visible from every direction.

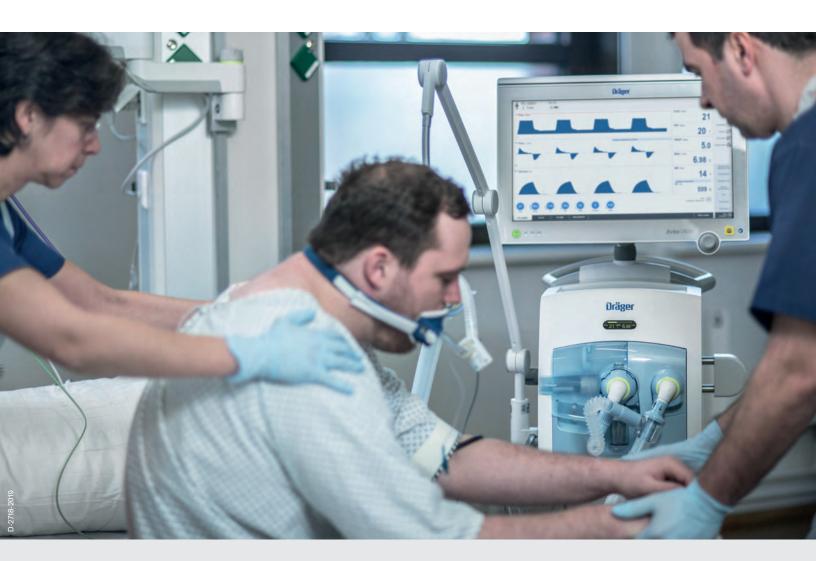




# PATIENT TRANSPORT

- No interruption in ventilation during patient transport.
- Operate the device in intra-hospital transport independently with gas and external power supply units.
- Utilize the bed coupling to safely transport the patient.

# Enabling early mobilization



# **EARLY MOBILIZATION**

Early mobilization of the patient helps to decrease the possibility of delirium as well as the length of stay in the ICU. Additionally, studies show that the cost of care also decreases, and more importantly there is an improvement in the patient's functional independence upon discharge.<sup>2</sup>

# Non-invasive, for as long as



"Endotracheal intubation has been common practice when treating respiratory distress, but it comes with a variety of potential risks, including airway damage and infection." 3

# SAFEGUARDING HIGH FLOW THERAPY

- Support of high flow nasal cannula (HFNC) up to 80 L/min with possibility to limit the maximum pressure avoiding undesired high airway pressures
- Smooth and seamless transition between O<sub>2</sub> therapy, NIV, and invasive ventilation.
- With a set FiO<sub>2</sub>, high flow oxygen assures the delivery for optimal oxygen therapy to the patient.





# NIV WITH AUTOMATIC LEAK COMPENSATION

- Non-invasive ventilation (NIV) in all modes
- Automatic leak compensation complements the patient's flow demand with continuous breathing gas
- Adaptation for leakages related to trigger, cycling, application of pressures and volumes
- Non-applicable alarms may be disabled during NIV
- Monitor patient leak compensated values during NIV

# possible



# Individualized lung protective ventilation



# LUNG PROTECTIVE VENTILATION

Our comprehensive treatment tools help support your lung protective ventilation strategy for adults, pediatrics and neonates.

- Three therapy types are available: invasive ventilation, non-invasive ventilation and O<sub>2</sub> therapy to help improve clinical workflow.
- Easily view the patient's respiratory status with diagnostic features, such as: Smart Pulmonary View, P.01 and Low Flow maneuver.
- Tools like QuickSet® and PressureLink support a safe and helpful handling of recruitment maneuver. Breath-by-breath trends provide therapy decision support.
- When using PC-APRV with AutoRelease®, end expiratory lung volume and CO<sub>2</sub> removal are maintained at balance, even in the face of changing respiratory mechanics and expiratory flow patterns.
- Integrated CO<sub>2</sub> measurement (VCO<sub>2</sub>, VTCO<sub>2</sub>, Slope Phase 3, Vds/VTe) supports ventilation management and may help to support patient safety.

# Safe and effective weaning

# A SYNCHRONIZED PATH FOR SAFE AND EFFECTIVE WEANING.

- The automated clinical protocol, SmartCare®/PS, stabilizes the patient's spontaneous breathing in a comfortable zone of normal ventilation and automatically reduces ventilatory support.
- Increased variability in spontaneous breathing through Variable Pressure Support (Variable PS) or Proportional Pressure Support (PPS) mimics the variability in normal breaths. The positive effects of this may result in improved pulmonary function and a reduced risk of ventilator associated lung injury (VALI).
- AutoFlow® or Volume Guarantee maintains stable tidal volumes during compliance, resistance and spontaneous respiration drive changes. It reduces the risk for overdistention and underinflation and protects the lung against hyper-and hypo-inflation.
- Automatic Tube Compensation (ATC®) compensates for artificial airway resistance and can be applied for all ventilation modes.
- Comprehensive assessment of the weaning progress with integrated tools like RSBi, P0.1 and NIF.



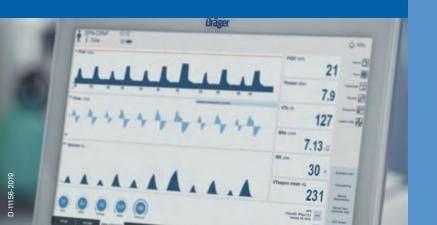
# up to 40%

SmartCare/PS® is a

ventilation mode that can

shorten weaning time<sup>4</sup> (up to 40%)

and ICU stay.



# Be future-ready with medical device interoperability

## CONNECTIVITY

We envision a future of critical care where medical devices are connected as a system and allow to enable new clinical applications in a safe and secure environment.

Interoperability between different devices supports caregivers at the point-of-care with taking care of their patients in the best way possible. Connected medical devices aim at avoiding preventable medical errors and reducing potentially serious inefficiencies.

# CONNECTED TECHNOLOGIES

Consider the impact of technologies that work together and share information to facilitate patient assessment, decision making, and therapeutic interventions – while utilizing data analytics for smart alarm management to reduce stress levels in the ICU.



Stefan Dräger
Chief Executive Officer

### A PLEDGE FROM OUR CEO

Helping reduce the number of preventable deaths in hospitals is a pledge that Stefan Dräger, fifthgeneration CEO of Dräger, has made. His personal goal also includes improving the ICU with technologies and services that lead to therapy assistance and ultimately hospital automation.



# Security for medical devices - a shared responsibility



# SECURE ARCHITECTURE AND COMPREHENSIVE SECURITY TESTING

The Evita was developed to ensure the latest standards in cybersecurity that remains through the product lifecycle.

- Security-by-design: comprehensive security requirements
- Threat analysis to identify vulnerabilities during the development phase
- · Automatic code analysis along software development
- Independent 3rd party penetration testing to discover residual vulnerabilities
- Our code is digitally signed; only signed (trusted) code is executed on our devices
- Continuous vulnerability monitoring along the lifecycle of the product
- Release of patches if relevant vulnerability was detected

# CYBERSECURITY BEST PRACTICES

We strive to consistently implement measures according to the NIST security best practices framework. Following the five functions, this encompasses:

# Identify

Dedicated documents with security relevant information for your asset risk management (e.g., MDS2 Form).

## **Protect**

- Secure Boot ensures the integrity of the software running on the device
- · Access control for protected functions and data
- Hardened operating system by omitting unnecessary software components and disabling all unused ports to minimize attack surface

## Detect

Security relevant events are detected, logged in a tamper proof security log file and the IT-admin is notified via SNMP traps

### Respond

The system health monitor observes the system load carefully and reacts in case of suspected malicious events, i.e., by disabling the network interface if load is unusually high.

## Recover

System can reboot into last good known state if a security event is detected. Dräger service can restore hard- and software quickly, clinical configuration can be transferred from other devices via USB drive.

# DrägerService®:

# maximize uptime, support industry staffing shortages and reduce unexpected service costs



# **Product Services**

Your medical equipment performs at its best when correctly calibrated and regularly maintained by original manufacturer service. Our technicians only use brand new and approved parts when performing repairs and preventive maintenance services. Using OEM approved parts ensures that proper testing has been completed to certify proper functionality and safety.

TotalCare: Budget security on maintenance and repair.

PreventiveCare: Avoid unexpected failures in advance.

ExtendedCare: Coverage beyond the standard warranty period.

Increase the availability of both your medical equipment and IT solutions – keeping them updated, safe and secure with our **Connected Maintenance** offerings.

Help Ticket: Pressing a button in the service menu will transmit technical data and – if entered – a problem

description via the network to Dräger experts for quick assistance.

Software Distribution: Makes software updates for networked devices efficient with minimized disruption

of clinical workflows.

Service Report: This documentation can be used to support audits or compliance reviews at your

healthcare facility.



# **Digital Services**

Improve operational efficiency, ensure reliable and safe operation with our digital services.

With our hospital **Data Analytics** solutions, we enable you to leverage the power of the data from your devices to drive health outcomes and support staff around the point-of-care. Maintain security, performance and uptime of your medical device fleet with Device Utilization Analytics.



# Training

We believe that continuous training of your team with our regular and constantly updated courses helps to reduce errors and improve clinical outcomes.



# **Professional Services**

Starting with an exact analysis of the current situation, we deliver comprehensive insights and concepts to improve the situation in your care unit.

# Accessories that complement our Evita family



Breathing system filter and HME portfolio helps to prevent health care-associated infections and ventilator-induced lung injuries.



Non-invasive Masks support comfort and an effective seal through customized fit and silicone-gel cushion.

# A BREATH AHEAD



A Breath Ahead is an interactive community for leaders and practitioners in respiratory care. Find the newest webinars on featured topics and earn free continuing respiratory care education (CRCE) credits.

Visit www.draeger.com/abreathahead.

# **CLINICAL SUPPORT**



Our team of clinical application specialists are registered respiratory therapists who support customers on site. Dräger customers also have access to Intensive Care Online Network (ICON), our 24/7 support service that provides immediate

telephone support from a clinical provider. Online training, tutorials, care protocols and education modules are offered at www.intensivecareonline.com.

### FOOTNOTES

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- 2. Schweickert WD, et al. Early physical and occupational therapy in mechanically ventilated, critically ill patients: a randomised controlled trial. Lancet 2009;373:1874-82
- 3. Tikka T, Hilmi OJ. Upper airway tract complications of endotracheal intubation. Br J Hosp Med (Lond). 2019 Aug 2
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- 5. Nasal high-flow versus Venturi mask oxygen therapy after extubation. Effects on oxygenation, comfort, and clinical outcome, Maggiore SM, et al., Am J Respir Crit Care Med. 2014 Aug
- 6. Nasal high-flow oxygen therapy in patients with hypoxic resp. failure: effect on functional and subjective resp. parameters comp. to conventional oxygen therapy and non-invasive ventilation. Schwabbauer N, et al., BMC Anesthesiol. 2014 Aug

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