SmartCare®/PS is an integrated automated clinical protocol that is designed to stabilise the patient’s spontaneous breathing in a comfortable zone of normal ventilation and to automatically reduce the ventilatory support. It is intended to accelerate weaning off the ventilator and to free up time for other tasks such as earlier mobilisation of patients.
SmartCare/PS is designed to shorten weaning.

The monitored parameters (breathing frequency RR, tidal volume Vt and endtidal CO2 etCO2), are used to evaluate the proper pressure support to meet the patient’s demand. Based on this, SmartCare/PS classifies the patient at a minimum of every five minutes into one of eight diagnostic categories: Normal Ventilation, Insufficient Ventilation, Hypoventilation, Hyperventilation, Unexplained Hyperventilation, tachypnea, or severe tachypnea.

“Half of all ICU survivors can’t return to their previous occupation.”1

“65% of these patients have functional limitations.”2

“Early mobilization results in a reduced length of ICU stay.”3

SmartCare/PS will supervise the weaning process and based on the user, defined parameters will either adopt to the patient’s changing clinical requirements, maintain current support, or continue to observe and suggest separation. After a successful automatic spontaneous breathing trial the readiness for extubation is indicated. When the “SBT successful” notice appears, the clinician must evaluate the patient and consider the appropriate course of action (i.e.: extubation or continue mechanical ventilation).

MECHANICAL VENTILATION
As non-invasive as possible, as invasive as necessary. Along the Respiration Pathway a variance and diversity of treatment tools clearly improve the clinical decision-making. The tool SmartCare/PS for the Evita V-series intensive care ventilators supports an effective weaning for adult and pediatric patients.

1Engel HJ et al., ICU early mobilization: from recommendation to implementation at three medical centers., Crit Care Med. 2013
MECHANICAL VENTILATION
DECREASE VENTILATORY SUPPORT GRADUALLY
- The clinical protocol is patient-controlled and includes a metabolic component.
- Configure the limits for the parameters f, VT, etCO₂ to adapt its automatic protocol to specific patients' needs.
- While weaning the patient, SmartCare/PS aims to keep the patient in a comfortable zone of normal ventilation.
- Automatic reduction in ventilatory support frees up time for the caregiver.

AUTOMATED SPONTANEOUS BREATHING TRIAL (SBT)
- A spontaneous breathing trial is initiated automatically when the ventilatory support is weaned down to minimum support.
- Upon successful completion, the clinician is notified to consider extubation.
- Until extubation SmartCare/PS continues to monitor the patient and provides ventilatory support as needed.

INCREASE VENTILATORY SUPPORT WHEN NEEDED
- The ventilatory situation is continuously monitored, assessed and classified.
- The weaning plan’s knowledge base also contains measures to increase ventilatory support when required.
- The caregiver can override automatic settings at any time and will be alerted in case of critical events.

CUSTOMER INSIGHTS

Improved outcome with SmartCare/PS

Shorter ventilation (up to 33%) saves costs and improves mortality¹,²

SmartCare/PS is the only ventilation mode that shortens weaning time (up to 40%) and ICU stay¹,²

As good as having a 1:1 experienced critical care specialty caregiver to patient ratio³

"I think that one of the greatest challenges in a busy intensive care unit is to be able to give a therapist enough time for each of his patients with long-term ventilation."

Respiratory Therapist
Phillip Thaut
Cedar City, Utah, UVRMC, Provo, Utah, USA

“With a knowledge-based system such as SmartCare/PS constantly attempting to detect opportunities of moving ahead, there is a greater likelihood of reducing any waste of time, and thereby to more efficiently reduce the duration of weaning.”

Prof. Philippe Jolliet
CHUV, Lausanne, Switzerland

¹ F. Lellouche et al.; Am J respir Care Med Vol 174, 2006
² Cochrane Library 2013, Issue 6
³ Rose L et al.; Intensive Care Med, 2008 Oct
SMARTCARE/PS IS AVAILABLE FOR THE FOLLOWING DRÄGER VENTILATORS:

### Protocol
- **Weaning strategy reduction**: Automatic adjusted Pressure Support
- **Protocol implementation**: Knowledge base
- **Metabolic parameter for classification**: etCO₂
- **Respiratory parameter for classification**: fspont, VT
- **Data acquisition interval**: 5 sec
- **Classification of ventilatory situation**: Every 2 min/5 min
- **Classification limits for body weight ranges**:
  - ≥ 15 kg to < 36 (≥ 33 lbs to < 79 lbs), ≥ 35 kg to 55 kg (≥ 77 lbs to 121 lbs)
  - Above 56 kg to 200 kg (123 lbs to 441 lbs)
- **Protocol with therapeutic measures for**
  - Tachypnoea, Severe Tachypnea, Insufficient Ventilation, Hypoventilation, Central Hypoventilation, Hyperventilation, Unexplained Hyperventilation
- **Configurability**
  - **FiO₂ max** range: 30 – 100 Vol%
  - **PEEP max** range: 5 – 15 mbar (cmH₂O)
  - **RR min** range: 10 – 15/min
  - **RR max** range: 20 – 40/min
  - **VT min** range: 4 – 7 ml/kgBW
  - **etCO₂ max** range: 45 – 65 mmHg (5.99 - 8.66 kPa)
- **Spontaneous Breathing Trial (SBT)**: Automatic
- **Notification for readiness to separate from ventilator**: Automatic
- **Notification for user action to change PEEP**: Automatic
- **Combination with other options**: Automatic Tube Compensation (ATCTM) for patients above ≥ 36 kg (≥ 79 lbs) of body weight
- **Pressure change limit**: Max. 4 cmH₂O

### Settings
- **Medical history**: COPD, Neurological Disorder
- **Body weight**: 15 kg to 200 kg (33 lbs to 441 lbs)
- **Airway access**: Endotracheal, tracheotomized
- **Humidification**: Active humidifier, HME
- **Night rest**: Weaning pause, Time, Length
- **Manual pressure support override**: At any time

### Monitoring
- **Trend**: Classification, SC-Psupp, Time range last 1 – 24 h
- **Logbook**: Classification, Phase, Automatic and manual changes in Psupp

### Safety
- **Alarms**: Independent regular ventilator alarms, Additional alarms for SmartCare®/PS
- **Apnea ventilation**: Automatic

Not all products or features are for sale in all countries or are only available as an option.