

Automated protocolised weaning with SmartCare[®]/PS

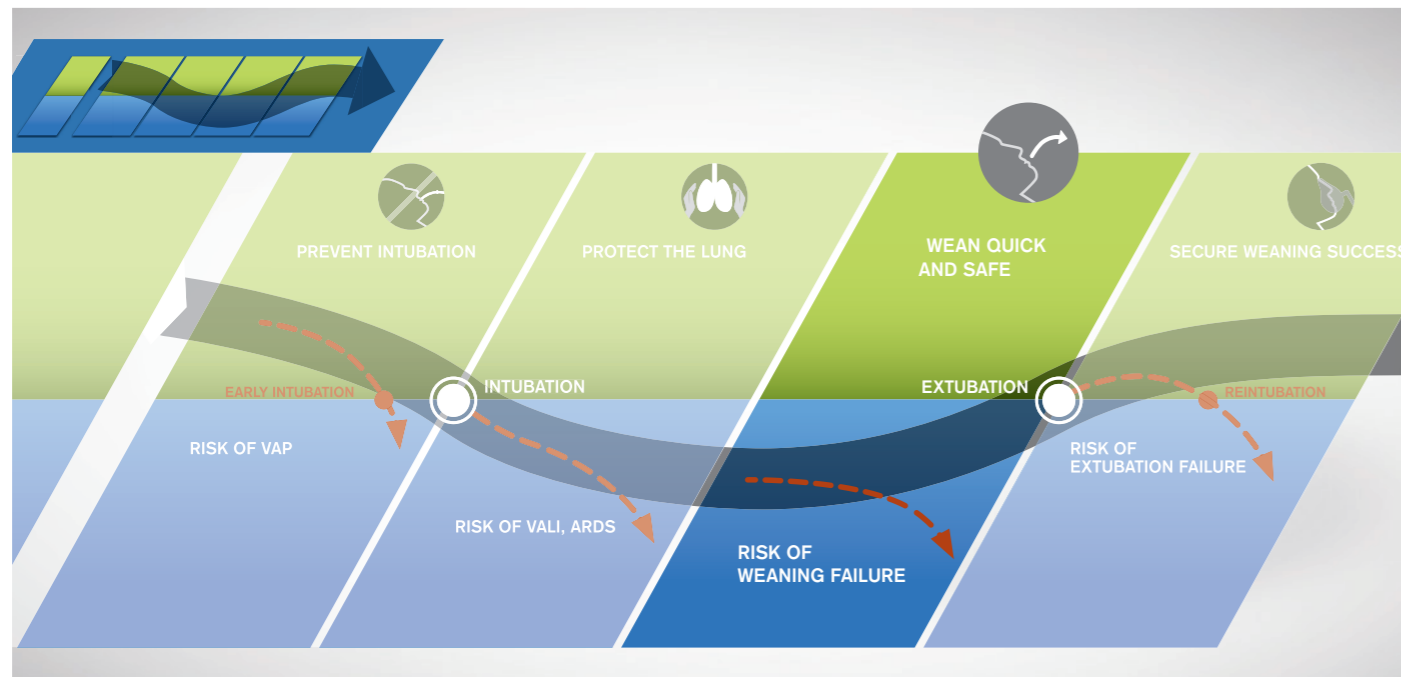
SmartCare[®]/PS is an integrated automated clinical protocol that is designed to stabilise the patient's spontaneous breathing in a comfortable zone of normal ventilation and to automatically reduce the ventilatory support. It is intended to accelerate weaning off the ventilator and to free up time for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

“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

Wean the patient successfully as third step of the Respiration Pathway



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.

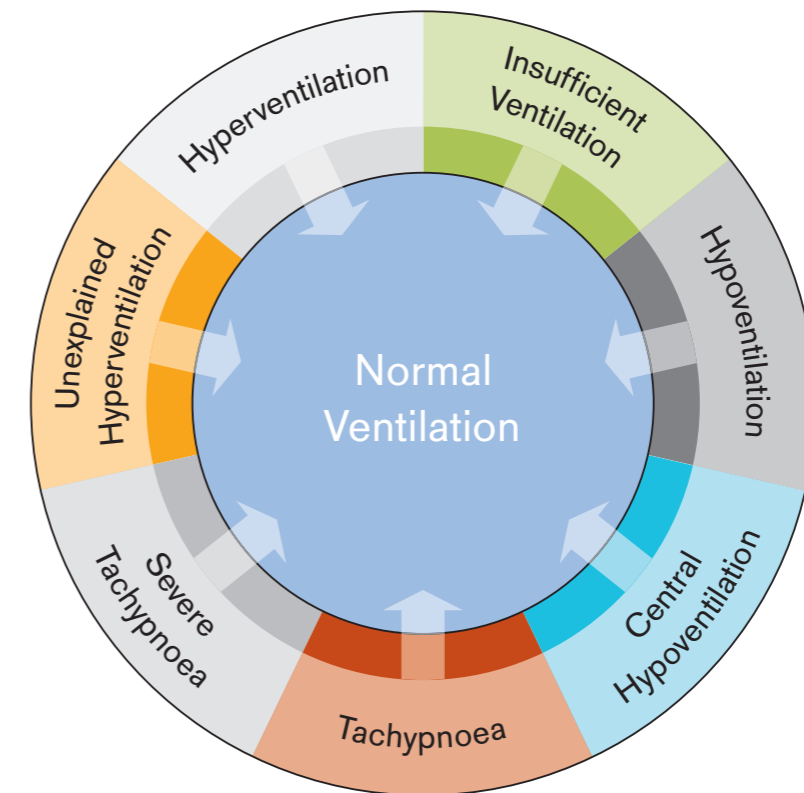
¹Engel HJ et al., ICU early mobilization: from recommendation to implementation at three medical centers., Crit Care Med. 2013

²Kress JP, Hall JB, ICU-Acquired Weakness and Recovery from Critical Illness, N Engl J Med. 2014 Apr

³Van Willigen Z et al., Quality improvement: The delivery of true early mobilisation in an intensive care unit, BMJ Qual Improv Rep. 2016

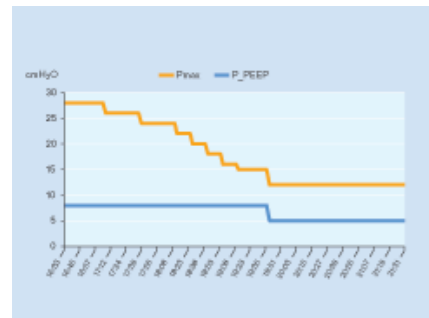
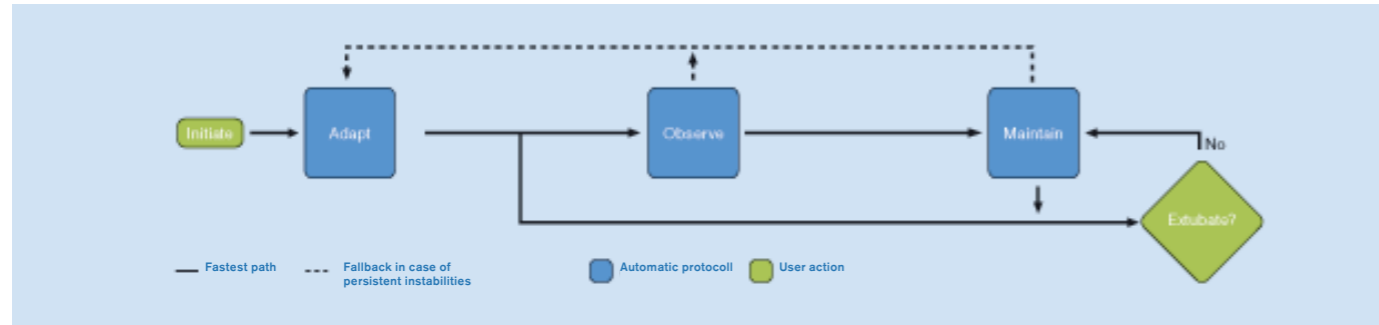
SmartCare/PS is designed to shorten weaning.

The monitored parameters (breathing frequency *RR*, tidal volume *Vt* and endtidal CO_2 *etCO_2*), 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.

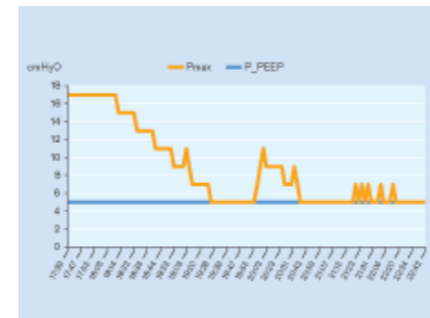


SmartCare/PS will supervise the weaning process and based on the user, defined parameters will either adopt to the patient's changing clinical requirements, maintain current support, or continue to observe and suggest separation. After a successful automatic spontaneous breathing trial the

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).



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**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.

Improved outcome with SmartCare/PS

Shorter ventilation (up to 33%) saves costs and improves mortality^{1,2}

SmartCare/PS is the only ventilation mode that shortens weaning time (up to 40%) and ICU stay^{1,2}

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

CUSTOMER INSIGHTS

”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. Phillipe 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	etCO ₂
Respiratory parameter for classification	f _{spont} , V _T
Data acquisition intervall	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 for all patients
Configurability	
FiO ₂ max	range: 30 – 100 Vol%
PEEPmax	range: 5 – 15 mbar (cmH ₂ O)
Configurability	for patients above ≥ 36 kg (≥ 79 lbs) of body weight
RRmin	range: 10 – 15/min
RRmax	range: 20 – 40/min
VTmin	range√: 4 – 7 ml/kgBW
etCO ₂ 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 cmH ₂ O

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.



Dräger Evita® V800

D-57659-2018



Dräger Evita® V600

D-5742-2018



Evita®Infinity® V500

D-76108-2013

without illustration:
Evita® V300

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