

## Ventilation solutions and benefits in daily clinical routine

### When you started using Dräger ventilators, what were the first benefits that you experienced?

For the first time, I had a ventilator that adapted to the patient's ventilatory needs, instead of the patient being forced to adapt to pre-set ventilatory parameters.

### Did the Dräger ventilators have any functions that were particularly useful?

Yes, the open breathing system (with active exhalation valve), allowed spontaneous breathing especially during the inspiratory phase of ventilation. It reduced the need for paralytics and heavy sedation by making the patient more comfortable during mechanical ventilation.

### What were the benefits to Lehigh Valley Hospital?

Within one year of introducing the Dräger ventilators, we were able to reduce the need for pharmacological paralytisation by close to one million dollars. All patients are currently ventilated with AutoFlow® (active exhalation valve) activated, and sedation costs continue to remain modest.

### Can you describe how you use the Automatic Tube Compensation (ATC™) function on the Dräger ventilators?

I have used Automatic Tube Compensation to compensate for the tube related resistance - work of



breathing - since it is flow depending and is varying due to the patient's spontaneous breathing. Thus, we only add pressure support when necessary to augment the patient's spontaneous tidal volume. I use ATC also to evaluate spontaneous breathing trials; my institution's current re-intubation rate is 13%. ATC has the added benefit over pressure support that the pressure level is dynamic, not static.

### Which mode do you use for post-operative patients?

We use MMV on many of our post-operative patients, to assist spontaneous breathing, as soon as their condition and ability warrants it.

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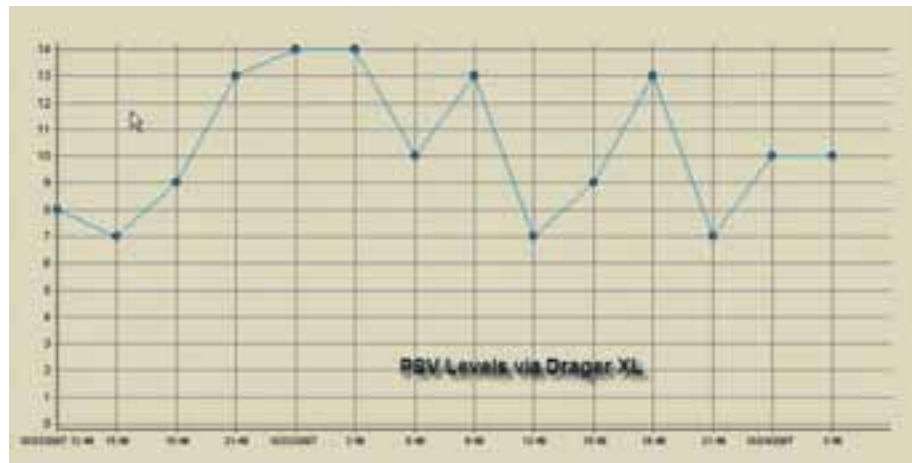
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We have employed this mode of ventilation in our post-open heart unit, and reduced ventilatory duration by several hours. We also used this mode in some of our surgical Intensive Care Units (SICUs) where sedation is often given for bedside procedures and diagnostics. MMV optimizes the amount of time-cycled ventilation the patient receives.

**How have you overcome some of the historical concerns about the MMV mode?**

By dividing the current set minute ventilation by the lowest tidal volume calculated to be acceptable for a given patient, we can set a respiratory rate which guards against ineffective high rate, low tidal volume breathing - this is a historical concern when using the MMV mode.

**Where have Dräger ventilators made the biggest impact?**

The biggest impact has been made by using Airway Pressure Release Ventilation (APRV). To date, we have selected this mode of ventilation for over five hundred patients. These have ranged from post-operative obese patients to those with ALI (Acute Lung Injury) patients who have failed the ARDSnet ventilation strategy.

Currently, we are studying the impact of APRV compared to ARDSnet on both

ventilatory duration and patient safety.

**What else did you learn about EvitaXL?**

Recently, I was trained in the use of SmartCare®/PS with the Dräger EvitaXL. SmartCare/PS is an automatic protocolized weaning tool that allows Pressure Support to be titrated during the liberation process. The clinical team, including physicians, has found the use of SmartCare/PS technology easy to use and understand. The support from the Dräger Education Team has been exemplary. We have already used it to wean ten patients who recently failed spontaneous breathing trials. Eight of these were liberated successfully within twenty-four hours of initiating SmartCare/PS.

**Where are you planning to use SmartCare/PS in the future?**

Based on our initial experience with SmartCare/PS, we are going to conduct a research project comparing ventilatory duration using SmartCare/PS to that using manual protocolized weaning.

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