

## Oxygen Therapy – using Dräger Evita\* ventilators to their full potential

In 2013 Glenfield Hospital, part of University Hospitals Leicester, changed its approach to using the Dräger Evita. This has enabled the hospital to make cost efficiencies, improve patient comfort and increase ease of use for staff, forming part of a seamless care pathway.



Leicester Hospitals have been using Dräger Evita ventilators for several years, in their critical care units which are situated on three different hospital sites. Vicky Chamberlain, Critical Care Technician at Glenfield Hospital, was interested in making sure the Dräger Evita ventilators were being used to their full potential and asked the local Clinical Applications Specialist from Dräger for some advice. One of the challenges the unit had was to wean patients from the ventilator as quickly and effectively as possible. This was how the idea of also using high flow Oxygen therapy on the ventilator was discussed. Here she explains how she worked with Dräger to achieve this.



“Reducing a patient’s time on a ventilator remains key and delivering a high quality of ventilation needs to be consistently maintained through use of standard treatment plans. As in most Intensive Care Units (ICUs), we are always interested in weaning our patients as soon as possible and have had a policy of weaning from invasive ventilation to non-invasive and then on to high flow oxygen therapy for some patients.

“The Dräger Evita has enabled us to provide invasive and non-invasive ventilation effectively but we have now also started to apply oxygen therapy via the ventilator too. **Being able to use the same device right through the patient respiratory care pathway has brought with it a number of benefits.** It’s also a device that both our existing and new staff are very confident using.”

The benefits have included efficiencies, cost savings and improved staff confidence, as Vicky continues:

“Changing the way we were using the Dräger Evita has made the equipment ten times more efficient – one of the key reasons for this is the controlled weaning of the patient from the device automatically. It has contributed to increased bed spaces, we’ve saved valuable time and we use less equipment. **We have created accessory packs with all the necessary components required for delivery of O2 therapy. This has standardised the process and resulted in the reduction of waste and stock consumables. Overall in the first year we’ve made cost savings of almost £10,000.**

“Our existing and new staff are much more confident using the same ventilator to take the patient through the complete respiratory care process. It’s also a much more comfortable patient journey and there are a range of benefits such as noise reduction. Recent studies on intensive care have shown how noise can affect patients. This device is much quieter than others we have used previously, enabling more rest and sleep for our patients. The first patient who used the equipment said it was the best stay he’d had in ICU. We’ve also found that patients on respiratory CPAP treatment know the treatment they are being given and moving on to oxygen therapy has become an incentive for them – they really see the benefits of it.

“**Dräger continues to offer us ongoing support and the changes within our unit were made possible because of this. Our Dräger clinical applications specialist came into the hospital for days at a time and demonstrated exceptional knowledge.** In addition the specialist was very flexible, coming into the unit at varying times of the day and night to ensure all staff had the full support they needed to use the device to its full potential.”

The work which has been done at Glenfield Hospital, particularly around oxygen therapy, is something that may now be considered across the Trust.

Vicky concludes:

“We have two other hospitals within the Trust that aren’t currently using oxygen therapy. However, having seen what can be achieved at Glenfield Hospital, they are now looking at the options available and working with Dräger to see what kind of impact it would have for patients and staff.

“It took time to change the way in which we work – not just with the Dräger devices but implementing new protocols for NIV and use of O2 therapy. In total it was a six month transition but was a really positive step in creating a seamless care pathway and to ensure we provide our patients with the very best of respiratory therapy on our unit.”



Below is the protocol that has been developed by Glenfield Hospital and shows the Dräger Evita\* verses other ventilators.

**EVITA\***

**INTUBATED VENTILATION BiPAP  
(Wet circuit)**



**CPAP/ASB  
(Wet circuit)**



**NIV/CPAP ON MASK  
(Add NIV mask)**



**OXYGEN THERAPY  
(Swap NIV mask for O2 face mask  
or F&P nasal prongs)**

**OTHER VENT**

**INTUBATED VENTILATION SIMV  
(Wet circuit)**



**CPAP/ASB  
(Wet circuit)**



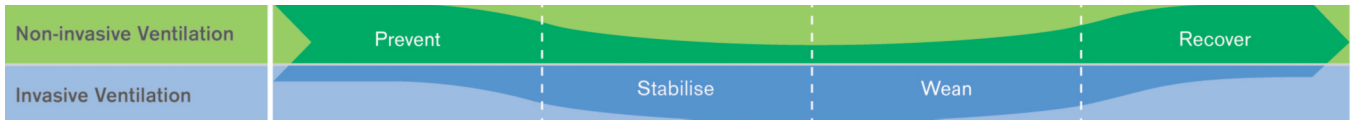
**NIV/CPAP ON MASK  
(Add NIV mask)**



**OXYGEN THERAPY SET UP  
MAXBLEND SYSTEM  
(CPAP circuit with O2 face mask  
or nasal prongs plus CPAP mask  
to go between therapies)**

Go between masked NIV and O2 therapy to wean patient. Transition between therapies is quick and easy. Costs are kept down as only one wet circuit is needed.

Patient has to have two systems and circuits set up, transition between therapies is not seamless and can be time consuming. Additional costs as two circuits are needed.



Respiratory Pathway

### About the Dräger Evita\* ventilators

The Dräger Evita accompanies you along the respiration pathway and delivers high level therapy and decision support – for your daily challenges today and tomorrow.

#### PREVENT

- Mask ventilation with NIV combines very quick response times to patient efforts with excellent inspiratory and end-inspiratory synchrony – available in all modes with extensive customisation of monitoring and alarm limits.

#### STABILISE

- Low flow analysis of static lung characteristics to optimise the ventilation settings.
- QuickSet and PressureLink to facilitate virtually any recruitment manoeuvre.
- AutoRelease in PC-APRV stabilises the end-expiratory lung volume.

#### WEANING

- SmartCare/PS is an automated, knowledge-based weaning tool that reduces length of stay in the ICU.<sup>1</sup>
- Configurable limits in SmartCare/PS allow individual adaptations to patient situation.
- Comprehensive monitoring function to observe the progress of weaning.
- Variable Pressure Support to increase the natural tidal volume variability.

#### RECOVERY

- **O<sub>2</sub> therapy** supports recovery after extubation and non-invasive ventilation.

\*Evita XL, Evita V300 & Evita V500 component of IACS

<sup>1</sup>Lellouche F et al. Am J Respir Crit Care Med Vol 174. pp 894-900, 2006

### About critical care services at University Hospitals of Leicester

University Hospitals of Leicester is one of the biggest and busiest NHS Trusts in the country, incorporating the Leicester General, Glenfield and Royal Infirmary hospitals. The team is made up of more than 10,000 staff providing a range of services primarily for the one million residents of Leicester, Leicestershire and Rutland.

Critical care services comprises of three units, based across the Trust:

- Glenfield Hospital – 18 Level 3 bedded ward made up of 14 Cardiac ITU and 4 general ITU beds
- General Hospital – 10 Level 3 general ITU beds
- Royal Infirmary – 14 Level 3 general ITU beds

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