

## Compatibility and adaptability of ventilators

### Interview with Dr. Ross Freebairn, Hawke's Bay Hospital

*Dr. Freebairn has GALILEO and RAPHAEL ventilators as part of a mixed ventilator fleet. He talks about how the new ventilators fit in and how they changed the way of working in his ICU.*

Q: Dr Freebairn, what was the reason for evaluating new ventilators?

A: Over the last ten years we have used a number of ventilators and tried even more. In 1998, we combined two hospitals into the one Hawke's Bay Hospital. At that time, we standardized our ventilators to the Siemens Servo 300, having previously had three in our fleet, and purchased three more. In 2002, we were looking to increase our ventilator number by one and to start a replacement program for the older Siemens ventilators.

Q: Which ventilators did you evaluate?

A: We evaluated a number of ventilators including the Servo-i, the Puritan Bennett 840, the Dräger Evita 4 and the HAMILTON MEDICAL range. We looked seriously at acquiring another Servo 300 to keep the consistency within the unit, and our initial thoughts were to stay with the Siemens Servo range.

Q: Why did you chose the HAMILTON MEDICAL ventilators then?

**"The GALILEO Gold, with its full specifications, compared favorably"**

A: A number of factors gave us pause and we reviewed the benefits of each of the ventilators. The GALILEO Gold ventilator matched the Servo and Evita for performance. However, the decision to purchase the GALILEO was multifactorial. It included the compatibility and adaptability of the ventilator to our current fleet, the addition of the P/V Tool for measuring lung mechanics, and the ability to use the ventilator for noninvasive ventilation. These features were not available on the Servo 300. In the end, price also had a role, and the GALILEO Gold, with its full specifications, compared favorably. Another factor was the commitment HAMILTON MEDICAL appeared to have towards further development and refinement of the newer ventilator strategies.

Q: Did ASV play a role in your decision?

A: ASV and other improved ventilation features were not a large factor in the decision at the time. Both our nursing staff and medical consultants have



Intensive Care Service at Hawke's Bay Hospital, New Zealand.

Hawke's Bay Hospital of New Zealand provides secondary- to tertiary-level services to a population of 150,000. Its community is relatively geographically isolated.

Hawke's Bay Hospital Intensive Care Services is the sole local provider of intensive care service for the Hawke's Bay. The service is provided by an 11-bed unit, composed of 7 ICU and 4 high-dependency beds.

The unit is currently using a mixed fleet of ventilators with 3 GALILEO Golds and 1 RAPHAEL from HAMILTON MEDICAL as well as 4 Servo 300 ventilators from Siemens/Maquet.

Dr Ross Freebairn is Medical Director of the unit and a well-known educator on mechanical ventilation.

a tendency to conservatism, and there was a need to have a ventilator that was configurable in a style not too dissimilar to the Servo 300s we were using.

**"We now feel restricted when a GALILEO is not available"**

Q: Did the introduction of the GALILEO pose

# User Report

any problems since you were still mainly using the Servo 300?

A: The introduction of the ventilator did not create the bow wave that accompanies many new products. The nursing and medical staff was generally accepting of the new machine. The ability to configure the GALILEO similar to the Servo 300 ventilators definitely helped.

Q: Did the new ventilators satisfy your expectations?

A: In almost all areas HAMILTON MEDICAL met or exceeded our expectations: the ability to use the ventilators for intrahospital transport and the graphic displays in particular.

A: Has your way of working changed since then?

Q: Over time our use of noninvasive ventilation has increased, encouraged somewhat by the ease of the GALILEO NIV mode compared to the Servo or LTV machines we had previously used. Our number of NIV patients has increased markedly over the last three years, in line with other developments. We now feel restricted when a GALILEO is not available for this use.

In many respects our NIV strategy has grown as we have learned about NIV, but also as the hardware has improved. We failed to gain enthusiasm for the technique with the previous ventilators but the ability to adjust ETS and Ti max independently, along with adjustable inspiration trigger, has improved patient tolerance of the technique.

**“Our commitment was based on the reliability and low cost of maintenance of the GALILEO”**

Q: How about reliability and maintenance costs?

A: We have just acquired two further machines. Our commitment to this was based on the reliability and low cost of maintenance of the GALILEO, the

excellent post-sales support from both the agent and the parent company – in particular Graeme A’Court’s enthusiasm and energy in education and technical help.

Q: Are you using the P/V Tool?

A: Yes, particularly the introduction of the P/V Tool 2 has enhanced the use of the GALILEO as a high-end ventilator, and more recently the use of the DataLogger has allowed the recording of data from the most difficult patients. We use the P/V Tool 2 for about 1 min of distending PEEP with predefined end-points.

**“The main benefit of ASV in my view is the ease of making settings – that’s ideal, for example, at night”**

Q: What do you think about ASV?

A: We have started to use ASV in post-surgical and OD patients right from intubation. We have also extubated selected patients directly from ASV. We do not yet have much experience with ASV. However, the main benefit of ASV in my view is the ease of making settings – that’s ideal, for example, at night, when less staff is on duty.

Q: Were there any concerns about using ASV at first?

A: None really. If the ventilator settings are being monitored closely, there should be no problem. However, we have some concerns about the large tidal volumes generated by ASV. Although the Otis equation may find that this is the tidal volume for the least WOB, the alveolar stretch may be an issue. Limitation of PAWP does not prevent high trans-alveolar pressure in ASV patients. Nevertheless, ASV seems as safe as any pressure support mode, possibly safer than PCV, and I recommend other users to try ASV, too.

ASV and AVtS are easy-to-use and safe modes of ventilation for the respiratory management of your intubated patients. Employing a lung-protective strategy, both modes determine an optimal breath pattern based on an operator-set minute ventilation plus your patient’s changing respiratory mechanics and spontaneous activities. ASV delivers this breath pattern automatically, while AVtS requires the user to manually accept or modify the proposal. ASV is not available in the US. AVtS is only available in the US.

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