

Making a Smooth Transition and Adding Mobility

Joan L. Headley, Executive Director, Post-Polio Health International, St. Louis, Missouri, director@post-polio.org

Ronda Bradley MS, RRT, FAARC, Spiritus Consultants, and representing CareFusion, presented the third lecture in IVUN's series of educational sessions for users of long-term ventilation.

Bradley's talk provided useful information for users needing to switch from obsolete machines, such as the LP10s and PLVs, while focusing on the LTV®1100 and LTV®1150 ventilators (CareFusion).

The LTV1100 and LTV1150 are portable volume and pressure mode ventilators that can be used invasively or noninvasively by children (>5 kg) and adults.

LTV® Series ventilators weigh 14 pounds and have approximately one hour of internal battery. The company offers other transport battery options. (See photos.) The LTV vents are approved by the Federal Aviation Administration for military use, which is a higher standard than for commercial flights.

Alarms

The flow in the LTVs is generated by a turbine, giving the ventilator the capability of delivering higher pressure and volumes

than comparable ventilators. The sound is different, and Bradley recommended that time be spent just getting used to the white noise.

The following alarms are possible:

- Apnea with apnea backup (for rates <4 or for pressure support only). The FDA requires this alarm to be on, but it has an adjustable time from 10-60 seconds. If a rate is not set, the vent will give 12 breaths per minute until it recognizes an effort at breathing.
- Low pressure is the “disconnect” alarm.
- High pressure alarm serves as “pop off”/pressure release. A nice feature is the high pressure delay, which helps weed out false high pressures such as a cough. This feature, when set, will delay the alarm for one or two breaths that exceed the high pressure threshold.
- Low minute ventilation can be turned off, but it can be used as a secondary disconnect alarm. For example, if the circuit gets lodged in blankets there could be a buildup of pressure even though there is a disconnect.
- High RR (f), i.e., high frequency respiratory rate (with time delay for the first 60 seconds from startup).
- High PEEP/Low PEEP.
- Low peak pressure, low minute ventilation, PEEP alerts and high respiratory rate alarms can be disabled, but a wide configuration of settings provides safety without nuisance alarms.

The LTV uses a non-vented mask or interface, so no hole/exhalation port in the mask or whisper swivel is needed. Vent users can continue to use whatever interface that they use now with their PLVs and LPs. However, there is a wide choice of masks, nasal pillows, mouth pieces or dental straw devices. Users will not experience extra air blowing out of



The Freedom Vent Carrier (www.freedomvent.com/carefusion.html) is shown here with the SprintPack™ Battery Lithium-Ion Power System.

the mask and if using a humidifier, water will not shoot out of the vent from the mask either.

Making the Transition

Bradley emphasized that users should follow any transition protocol written by the physician with additional recommendations from the respiratory therapist (RT) at the durable medical equipment company (DME) office.

Although all ventilators are slightly different, the LTV1100 is designed to meet the transitional needs of those who have long utilized a pressure-trigger ventilator (the older vents). The LTV1100 sensitivity is triggered by flow or pressure.

The bias flow (a small amount of constant air flow) on the LTV1100 can be turned off, which is why Bradley recommends it to vent users trying to switch from the PLV-100s and LP10s – they have no bias flow. With the LTV1100, a user also can turn on or off leak compensation.

She recommends close communication with the physician on determining settings, then working with the RT to determine if additional features such as triggering options, bias flow, leak compensation or “sigh” are helpful. (The LTV1100 offers a big breath or “sigh” every 99 breaths.)



Upcoming Educational Conference Call

Wednesday, February 27, 2013
at 1:00 pm CT

John R. Bach, MD, Physical Medicine & Rehabilitation, University Hospital, University of Medicine & Dentistry of New Jersey, will present “How Polio Survivors Can Avoid Tracheostomies.”

Reservations are required to be on the call. To reserve your spot, contact info@ventusers.org or call 314-534-0475. Reservations are on a first-come, first-served basis.

Past presentations are online at www.ventusers.org/edu/confcalls.html#pas

Do you have suggestions for other topics? If so, please send them to info@ventusers.org.



The PowerPoint at www.ventusers.org/edu/IVUN-TransitiontoLtv.pdf pictorially shows how to set up a circuit and how to operate the vent.

Points to Remember

- Ask for help: a local CareFusion representative or clinical support person is available at 800-754-1914.
- These are the three major choices to be made:
 - Choosing flow or pressure triggering
 - Turning off bias
 - Turning off leak compensation
- Once set up, the settings will be locked in and ready when the ventilator is turned on.

Portable ventilators improve mobility, and the LTV can be carried on a wheelchair in several ways. The LTVs have been improved over the years but the basic size has not changed, and consequently, devices to hold the vents have been developed. ■

The black box in this photo is the PowerTech Vent Power Center by Richardson Products. It is designed to provide stable power to the ventilator from the power chair battery (www.richardsonproducts.com/Electronics.pdf). Because the vents use a small amount of power, users of this system report that a battery that would get 16 hours of power can run for 15 hours while using the vent. People who use 24/7 ventilation like this option, because they can be out all day. More options and bedside set-ups are described in the PowerPoint (www.ventusers.org/edu/IVUN-TransitiontoLtv.pdf).