the respiratory drive, the differences were as much as 18%: version 1.92 provided much faster triggering than version 1.21. Figure 1 shows the considerable differences in pressurization performance between the 2 software versions. Version 1.92 provides much better pressurization (up to 400% improvement), especially if demand is high.

Again the intention is not to compare these results to those from Marchese and co-workers,[1] as we did not use the ASL 5000 lung model and can't compare the experimental settings, but to compare the performance of one software version to the most recent version and to highlight the need to mention which software version was used in a bench evaluation.

Data reported in any study, whether it is a study of ventilator performance or a clinical study, only reflect the time and conditions when the data were collected. Readers should, however, be able to know if the study results can be translated to their own local conditions. Being as precise as possible about the devices compared should help in this matter.

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REFERENCES

1. Marchese A, Sulemanji D, Chipman D, Villar J, Kacmarek RM. Performance of current ICU ventilators during pressure and volume ventilation. Respir Care 2011; 56(7):928-940.
2. Richard JC, Carlucci A, Breton L, Langlais N, Jaber S, Maggiore S, et al. Bench testing of pressure support ventilation with three different generations of ventilators. Intensive Care Med 2002;28(8):1049-1057.

The authors respond:

We thank Marc Wysocki and associates for their letter. We totally agree with their concern regarding the specific ventilator software evaluated. However, manufacturers rarely inform us of the specific version they provide for evaluation. The ventilators in our study, except the Covidien PB840 and the Dräger Evita XL, were provided for evaluation by the manufacturers. The Hamilton G5 ventilator was provided to us for evaluation by Marc Wysocki. But none of the manufacturers made it a point to indicate that we should list their ventilator's software version.

We know that every ventilator company is continually upgrading their products and that new software is introduced regularly, and it is as much the obligation of the manufacturer as the researcher to provide the appropriate software version when a ventilator is sent for evaluation.

Regarding the differences in data between Hamilton's evaluation of the G5 and our evaluation, the biggest issue is the evaluation method: the ASL 5000 lung model versus the Michigan Instruments Training and Test Lung. We would always expect the results to be poorer with the ASL 5000, because the Michigan Instruments Training and Test Lung can only evaluate airway pressure changes, whereas the ASL 5000 can evaluate simulated pleural-pressure changes, so all pressures will exhibit a greater change, and time will always be longer with the ASL 500. However, we tested all the ventilators under the same exact settings, and, although the individual findings for a particular ventilator may differ based on the lung model, the comparison of performance across different ventilators should not be affected by the lung model used.

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Dr Kacmarek has disclosed relationships with Covidien, Dräger Medical, General Electric, Hamilton Medical, and Newport Medical, Maquet, and KCI.

Is Noninvasive Ventilation Possible Only in New Jersey?

We read with interest, "Not to Invade: A Better Strategy," an editorial in the June 2011 issue of RESPIRATORY CARE,[1] concerning the paper "Duchenne Muscular Dystrophy: Continuous Noninvasive Ventilatory Support Prolongs Survival."[2] The latter outlined a new protocol for patients who require continuous ventilatory support, in many cases for decades, but managed entirely noninvasively and even extubated and decannulated to full noninvasive ventilation (NIV) when "unweanable." The editorial stated that, "Supporting full-time NIV in the manner that Bach and Martinez did clearly involves a commitment to the support of NIV respiratory management that may not be available at other medical centers." This, of course, is true, but is it not the point of academic medical journals to provide the information necessary to institute beneficial advances at other institutions?

A 2011 study by Ishikawa et al reported significantly greater life expectancy with NIV than with tracheostomy ventilation (38.6 years versus 28.9 years, respectively,)[3] in part because of the ancillary techniques permitted by NIV, such as glossopharyngeal breathing, breath-stacking, and mechanically assisted coughing, while avoiding life-threatening complications of tracheostomy.[4] It is true that NIV requires an expert term who can manage both adult and pediatric patients in both the chronic and acute care settings, but, considering the benefits to longevity and quality of life, we feel that this should be the goal of every clinician who specializes in the treatment of patients with Duchenne muscular dystrophy or other neuromuscular disorder.

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REFERENCES

1. Benditt J, Boitano. Not to invade: a better strategy. Respir Care 2011;56(6):878.
2. Bach JR, Martinez D. Duchenne muscular dystrophy: continuous noninvasive ventilator support prolongs survival. Respir Care 2011;56(6):744-750.
3. Ishikawa Y, Miura T, Ishikawa Y, Aoyagi T, Ogata H, Hamada S, Minami R. Duchenne muscular dystrophy: survival by cardio-respiratory interventions. Neuromuscular Disorders 2011;21(1):47-51.
4. Bach JR. Management of patients with neuromuscular disease. Philadelphia, PA. Hanley and Belfus; 2004.