

## Is It Incorrect to Report Respiratory Frequency in Hertz?

What lesson is to be learned from Robert Chatburn's Letter to the Editor entitled "It Hurts to Say 'Hertz'" in the September 2002 issue of RESPIRATORY CARE?<sup>1</sup> He writes that respiratory therapists (RTs) "momentarily confuse a unit of measurement (hertz) with a ventilation parameter (frequency)" and that this behavior is "perhaps... due to practicing unsafe ventilator checks." The implication seems to be that if an RT states "the hertz was 10," that this somehow implies either inferior care or ignorance on the part of the RT.

Hertz is defined as a unit of frequency equal to 1 cycle per second. So 10 Hertz is a frequency of 600 breaths per minute. Is Mr Chatburn telling us that if an RT says "the Hertz was 10," that this has no meaning because 1 cycle per second cannot be 10, but that there can be 10 cycles per second?

The letter implies that the RT should say "the frequency is 10 Hertz." When an RT states "the Hertz was 10," does this mean that the RT does not know what he is reporting? In this particular situation are these RTs confusing each other and not communicating? Is re-

porting the Hertz as 10 indicative of unsafe ventilator assessments?

Respiratory therapists give report logically and consistently. They will list each ventilator parameter and then the machine setting for the patient. A common report could read "the PIP is 20, the PEEP is 5, and the  $F_{IO_2}$  is 0.50."<sup>\*</sup> Implied in that report are the words "is set on." For example, "the PIP is set on 20." Hertz is a setting on some ventilators. If you tell me "the Hertz is 10," I know that the respiratory rate is 600 breaths per minute.

I do not think that the quality of an RT's patient ventilator *assessments* (not "checks") is related to an abstract technicality. I'll explain my reasoning with 2 examples.

1. Mr Chatburn does an outstanding job explaining mechanical ventilation in his many texts and reports, especially with regard to ventilator waveforms. For instance, he correctly explained that only objects decelerate. Flow is a measure of volume per time. Therefore, flow cannot decelerate, and so there are no "decelerating flow

waveforms." These ventilator flow waveforms are correctly described as exponential decay. However, when I read the literature and listen to some of our most prominent physicians and RTs, they keep writing and talking about "decelerating flow patterns." Are these physicians and RTs practicing unsafe manuscripts and lectures? Do they also have a virus?

2. When a bedside caregiver asks for an "Ambu bag" and the hospital purchases and stocks the "Bag Easy" is that unsafe care?

In summary, I do not agree with Mr Chatburn that "there is a new virus going around that affects only RTs." If that were so, this type of disease would make it incorrect to state that the sun rises in the east and that none of us in this world really know what direction we are traveling.

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## REFERENCES

1. Chatburn RL. It hurts to say "hertz" (letter). *Respir Care* 2002;47(9):1018.

\* PIP = peak inspiratory pressure, PEEP = positive end-expiratory pressure, and  $F_{IO_2}$  = fraction of inspired oxygen.