

This month we are pleased to publish 4 editorials, 5 original research papers, a teaching case, a letter to the editor, and several book reviews. We also publish 7 papers related to the Institutional Review Board (IRB).

Secretion retention and airway clearance are common issues encountered in mechanically ventilated patients. Airway suction is a standard practice in mechanically ventilated patients, and a variety of additional approaches to airway clearance are employed in these patients. Retained secretions can contribute to a number of clinical problems, including atelectasis, infection, and gas exchange abnormalities. The study by Volpe et al is interesting in that it suggests that ventilator settings might affect mucus flow within the airway. In a lung model, simulated mucus moved towards the airway opening with expiratory flow bias and moved away from the airway opening with inspiratory flow bias. The possibility of adjusting the ventilator to produce an expiratory flow bias and thus facilitate airway clearance is intriguing. However, whether expiratory flow bias significantly affects secretion clearance or major pulmonary complications remains to be determined, as pointed out by Ntoumenopoulos in an accompanying editorial. Clinical confirmation of these findings is needed and should be the focus of additional work. This might be of particular value in mechanically ventilated patients with excessive secretions and a weak cough.

Sedation is often required in intubated mechanically ventilated patients in the ICU. Sedation targeted to the protocol adopted by the ICU and monitored using one of a variety of sedation scoring systems is recognized as a standard of care. Excessive sedation has been associated with a variety of undesirable complications, including additional days of mechanical ventilation. This has led to daily interruptions of sedation, commonly referred to as "sedation vacations" or "sedation holidays," and this has been associated with fewer days of mechanical ventilation. L'Her et al report their evaluation of a device for delivery of inhaled volatile anesthetics in the ICU. The device they used is not available in the United States, and many questions remain regarding the use of inhaled anesthetics in the ICU. These are nicely addressed by Treggiari in an accompanying editorial. A variety of safety concerns must be addressed before widespread use of inhaled anesthetics in mechanically ventilated patients in the ICU.

Proadhan et al report their evaluation of agreement of wheeze detection between a physician, respiratory therapists, nurses, and digital recordings from a computerized respiratory sound monitor. The study was conducted in a pediatric ICU. They found that the computerized device was better than the clinicians at wheeze detection. Pasterkamp, in an accompanying editorial, suggests that a computerized respiratory sound monitor might offer a better understanding of wheezing in young children. Whether this translates into better patient outcomes remains to be determined.

The Internet is increasingly becoming the source of health-care information for laypersons. Walsh and Volsko evaluated the readability of Internet-based consumer health information. This is important, as consumer comprehension may be compromised if the content exceeds a 7th grade reading level. The authors found that most of the articles they evaluated exceeded this reading level. As Mishoe points out in an accompanying editorial, the results of this study indicate that the consumer health care materials on the Web sites of the American Heart Association, American Lung Association, American Cancer Society, American Stroke Association, and American Diabetes Association exceed the reading level recommended by the United States Department of Health and Human Services.

The study by Petitjean et al provides important insights to sleep and respiratory function after withdrawal of noninvasive ventilation in patients with chronic respiratory failure. Respiratory events started on the first night off noninvasive ventilation. With resumption of noninvasive ventilation, the patients recovered to their baseline conditions. These results suggest that noninvasive ventilation discontinuation in patients with restrictive chronic respiratory failure promptly leads to nocturnal respiratory failure. Therefore, noninvasive ventilation should not be stopped for more than a day or two.

Each year at the International Congress of the American Association for Respiratory Care (AARC), there is a symposium sponsored by RESPIRATORY CARE. At the 2007 Congress, the title of the symposium was, "The Institutional Review Board and You," a collection of 7 lectures related to human-subjects protection in research. This is an issue that affects all researchers, whether they present their study results as an OPEN FORUM poster at the AARC Congress or submit the study as a full paper to be published in RESPIRATORY CARE or elsewhere. Federal regulations require IRB approval for most human-subjects research. Research is defined as a systematic investigation — including research development, testing, and evaluation — designed to develop or contribute to generalizable knowledge. Human subjects are considered individuals whose physiologic or behavioral characteristics and responses are the object of study. IRB oversight extends to chart reviews and observational studies. Also covered are quality assurance projects if they are to be published, even if publication is only in the form of an abstract. If in doubt, the most cautious approach is always to discuss regulatory requirements with the IRB to ensure compliance. That is much better than having this questioned by the editor or abstract reviewers. These IRB papers are a must-read for both novice and experienced researchers.

This month's teaching case comes from Billings et al from the University of Washington. They describe the presentation of bilateral diaphragm paralysis. They also discuss the causes, diagnosis, and treatment of this condition. Although not common, bilateral diaphragm paralysis occurs commonly enough that respiratory care professionals should consider it as a cause of unexplained respiratory failure.