

Early in my career, sighs were commonly used with mechanical ventilation. With the introduction of positive end-expiratory pressure (PEEP), the use of sighs went away for the most part and some commercially available ventilators no longer have a sigh function. Lung-protective ventilation that uses small tidal volumes and low airway pressures is the only intervention to date shown to reduce mortality in patients with acute lung injury (ALI). But there is also interest in alveolar recruitment maneuvers to reopen airless alveoli followed by higher levels of PEEP to maintain alveolar recruitment; clinical studies to date of recruitment maneuvers and higher levels of PEEP have yielded variable results. There have also been several recent studies using sighs as a lung recruitment strategy. The most recent is by Badet et al in this issue of the Journal. They found that sigh breaths (twice the baseline tidal volume with a plateau pressure less than 40 cm H₂O every 25 breaths) improved oxygenation and compliance in patients with ALI. These results are intriguing but, as pointed out in the editorial by George and Lapinsky, more robust clinical trials are required to clarify the outcome benefit of this approach.

Although the evidence suggests that use of a metered dose inhaler (MDI) with spacer is equally effective as a nebulizer in many patients, the nebulizer is still most commonly used in many hospitals. Because devices that generate aerosols, such as the nebulizer, have been implicated in outbreaks of nosocomial infections, it is reasonable that MDIs rather than nebulizers should be used whenever possible. This issue came to the fore during the outbreak of Severe Acute Respiratory Syndrome (SARS) in Singapore, as discussed in the paper by Khoo et al. In this study, it is interesting that the majority of patients thought that an MDI with spacer was easier to use than the nebulizer. On the other hand, nearly all of the nurses preferred the nebulizer over the MDI with spacer. A large majority of the nurses thought that the nebulizer was more effective for treating acute airflow obstruction in the hospital. As pointed out in the editorial by Daugherty and Rubinson, there are major gaps in the implementation of known effective interventions, often simply because of lack of clinician awareness. Moreover, clinician education alone is not sufficient to solve this problem because knowledge does not necessarily translate into practice.

Harbrecht et al instituted a respiratory-therapist-driven evaluate-and-treat protocol in neurosurgery step-down, trauma/surgery step-down, and trauma/surgery general units to facilitate early identification and treatment of patients who would benefit from respiratory treatments. In the patients who received respiratory therapy, the protocol was associated with decreased total hospital costs and stay, and there was a trend toward fewer ICU admissions and lower hospital mortality. This occurred despite the fact that more patients received respiratory treatments. These data suggest that routine respiratory-therapist-driven assessment of non-ICU patients may reduce pulmonary complications in high-risk patients. These results are interesting and potentially important, but given the limitations identified by the authors, the approach described should be studied further to fully appreciate the extent to which the results can be generalized.

The Journal is pleased to publish papers related to respiratory care education and one such paper is from Rye and Boone. Consistent with my own observation, they found that the majority of respiratory care educational programs

use unpaid clinical preceptors. I was also not surprised to learn that preceptor training varied considerably. I agree with the authors that a standardized preceptor-training program is needed to improve the instructional quality of preceptors and to assure that respiratory therapy programs prepare graduates for 21st-century practice. I suspect that this will be an increasing challenge because, given the current economic climate, it may become more difficult to recruit clinical preceptors and those persons will demand greater training and feedback from the program leadership.

The study by Maciejewski et al is of interest because asthma disease management is and will remain a topic important to the readers of the Journal. I was surprised to learn that the authors found few well-designed studies with rigorous evaluations of disease management interventions for adults with asthma. As Steuten points out in an accompanying editorial, because of mounting health-care costs and the fact that innovative industries and health-care practices are greatly outpacing academic research on disease management, there is an urgent need to determine the impact of asthma disease management programs. This seems to me an opportunity for readers involved in asthma disease management to study this subject.

Two distinguished lectures are traditionally presented each year at the AARC International Respiratory Congress and papers based on the lectures are often published the following year in *RESPIRATORY CARE*. The 35th Donald F Egan Scientific Memorial Lecture is by Editor Emeritus Pierson and deals with the physiology of dinosaurs. Anyone who has ever been fascinated by dinosaurs — and that would be most of us — will be interested in reading this paper. The 24th Philip Kittredge Memorial Lecture is by Kallet, who discusses the legacy of the Acute Respiratory Distress Syndrome Network. As he points out, the respiratory care profession itself has benefited from the studies conducted by the Network through the successful implementation of complicated therapist-driven protocols and the novel practice of utilizing respiratory therapists as clinical coordinators. This has raised the profile and enhanced the stature of the respiratory care profession, in addition to the good that it has done to improve the care of patients with ALI.

A symposium entitled, "Current and Evolving Concepts in Critical Care," was presented at the 2008 AARC International Respiratory Congress and we are pleased to publish papers from this symposium. We know carbon monoxide (CO) as a toxic gas molecule. Thus, it is interesting to learn from Otterbein that low concentrations of CO may have potential benefits in inflammatory disorders. In their paper, Branson and Johannigman make a clever distinction between new features of mechanical ventilators that are truly innovative and those that are merely inventions with limited value. Betit presents the current status of extracorporeal membrane oxygenation in children and adults and helps us take a peek into the future of this therapy. In the final paper from the symposium, Hill et al discuss the management of postoperative pulmonary hypertension, a challenging and feared complication of many types of surgery.

This month's case report, by Bassani et al, describes the use of noninvasive ventilation in a pregnant patient with respiratory failure from all-retinoic-acid syndrome. The Teaching Case of the Month, by Pena, addresses the differential diagnosis of pulmonary masses and nodules in immunocompromised patients.