

This Editor's Commentary is my first, as I assume the role of Editor-in-Chief from Dean Hess. During Dean's decade as Editor, the Journal underwent unparalleled growth and greatly enhanced RESPIRATORY CARE's standing in the scientific community. I am grateful to Dean for his expertise and guidance and humbled by the opportunity to follow him as editor. I look forward to the continued support of our outstanding Editorial Board and you, the readers. Together we will chart the future of the science of respiratory care and pulmonary medicine.

This month's Editor's Choice paper, by Kallet et al, describes the impact of daily spontaneous breathing trials (SBT) and daily sedation interruption on ICU length of stay (LOS) and duration of ventilation in subjects with ARDS. Using a retrospective review over a period of 14 years and compared to a historical control they found important reductions in ICU LOS and duration of mechanical ventilation (an impressive 5-day reduction). Interestingly, the average number of SBTs until ventilator liberation was only 2. These data further confirm the importance of daily SBTs and sedation interruption in patient outcomes, including patients following ARDS.

Mussa et al report the results of a survey regarding patient satisfaction with their portable oxygen delivery devices. This group of COPD subjects demonstrated greater satisfaction with portable liquid devices than portable concentrators. Importantly, this was also associated with an improvement in perceived mobility. These findings may represent the issues with portable concentrators wherein the oxygen output cannot meet patient demand.

Inhaled nitric oxide (INO) use has been an important advance in critical care, but at significant financial costs when used off-label. Hughes Driscoll and colleagues evaluated a protocol for initiation and weaning of INO. In a time when INO might be over-utilized, they demonstrated improved control of INO dose, quicker weaning of INO and a reduction in prolonged use. These data provide a road map for controlling costs without impacting safety.

Bry and others reviewed home noninvasive ventilation (NIV) use in obese subjects following an episode of respiratory failure. At home follow-ups demonstrated that home NIV use was effective and well tolerated. Not surprisingly, the most obese subjects were most likely to receive home NIV, and adherence with regimens was associated with improved physiologic outcomes.

Emergency department ventilation has been found to impact in-hospital outcomes. Al Ashry et al report on the utilization of blood gas analysis and ventilator parameter changes during emergency department stay. They report a number of blood gas derangements including hypoxia, hyperoxia, and hypercapnia. Interestingly they found that ventilator parameters were often unchanged, suggesting inattention to blood gas findings.

Hatipoğlu and colleagues evaluated the ability of a model to predict 30-d readmission rates at the time of discharge. This important metric is currently linked to reimbursement. They report that in a group of subjects > 65 y of age, their model outperformed the CMS model. Importantly, number of admissions in the previous 6 months,

opioid use, renal function and coagulation disorders were key discriminators. These data can guide post-acute care treatment to correct these disorders.

Sleep apnea remains a common disorder with significant logistic and economic hurdles. Bravata et al report use of a mathematical model to describe the possible diagnostic and treatment approaches for the diagnosis and initial therapy of sleep apnea. In a theoretical cohort their model supported approaches that diagnose and treat sleep apnea with an automatic titration of CPAP. The major cost savings here being reducing the need for additional sleep studies.

Physiologic variability is a hallmark of an intact physiologic system, while lack of variability portends dysfunction. Latremouille and colleagues used heart rate variability (HRV) to evaluate subject response to extubation in the NICU. They suggest that HRV might be useful in predicting extubation failure within 2 h of extubation. This should be explored in larger groups and include traditional respiratory variables as well.

Recent evidence suggests maternal distress can impact allergic illness in children. Smejda et al evaluated 370 maternal-child pairs and found that maternal distress increased the risk of childhood wheezing. These data could prove useful for prevention of childhood disease and maternal well-being.

The GOLD guidelines represent the international standard for diagnosis, classification and treatment of COPD. Physical activities of daily living (PADL) are an important component of the COPD assessment test. Munari and others report that the modified Medical Research Council dyspnea scale was more reliably able to predict PADL than the GOLD system. This may be important in classifying physical symptoms in COPD patients.

Formiga and colleagues report the impact of smoking on inspiratory muscle performance. Matching smokers with non-smokers, they found that sustained maximal inspiratory pressure (MIP) was lower in smokers. This may be associated with increased end expiratory lung volumes and the authors suggest that maximal MIP has a greater discriminatory ability to detect smoking-related respiratory muscle dysfunction.

This month's invited review covers the important issue of rescue therapies in severe ARDS. Alessandri and colleagues present the evidence for use of ventilator therapies, pharmacologic treatment, positioning and extracorporeal techniques in the face of refractory hypoxemia and ventilator failure.

Finally, Becker et al describe a literature review detailing the value proposition of respiratory therapists. Using the PRISMA guidelines they performed a meta-analysis including 28 papers detailing cost savings associated with respiratory care. Mechanical ventilation was the most frequent topic followed by disease management. Inconsistency in study conduct precluded a meaningful outcome from the meta-analysis. This information should serve as a road map for researchers and the profession to conduct high quality research that determines the value respiratory therapists bring to patient care.