Editor's Commentary

This is the last Editor's Commentary that I will write, as Richard Branson becomes Editor-in-Chief on January 1, 2018. I am most grateful of the opportunity to be your Editor for the past 10 years. I have every confidence that the Journal will continue to thrive under Rich's leadership. I want to take this opportunity to thank everyone who has helped me in my tenure as Editor. Specifically, I thank Sara Moore, Assistant Editor, Rich Branson, Deputy Editor, Ray Masferrer, Managing Editor, and Sam Giordano, Publisher. I also want to thank my Associate Editors and the members of the Editorial Board. Most important, I want to thank our authors and you, the readers, as we would have no Journal without authors and readers.

This month's Editor's Choice paper, by Gobert et al, evaluated the assessment of cough peak flow (CPF) measured using the ICU ventilator. They found that CPF measured using the ventilator was able to predict extubation success. For the subjects with early extubation success, the median CPF was -68 L/min and median tidal volume was 0.65 L. For the subjects with early extubation failure, the median CPF was -57 L/min and median tidal volume was 0.45 L. Nguyen and Schmidt suggest that a low CPF could lead the clinician to identify its cause, such as malnutrition or physical deconditioning.

Pack and colleagues report their experience with a respiratory therapist (RT)-managed arterial catheter insertion and maintenance program in a non-teaching community hospital. Their experience establishes the feasibility of an RT-managed arterial catheter placement program in a community ICU. The RT-managed program was characterized by a high degree of success and safety, and allowed arterial catheter placement at times when intensivists were not available in the ICU. This experience underscores the value of RTs as members of the ICU team. Berlin proposes that this adds value to a health care system overburdened with expense and inefficiency, and represents an opportunity for forward thinking RTs.

The effects of synchronized intermittent mandatory ventilation (SIMV) with volume guarantee (VG) or pressure support ventilation (PSV) with VG on ventilation parameters, pulmonary inflammation, morbidity, and mortality in preterm infants was investigated by Ünal et al. They found that PSV+VG provided tidal volumes closer to the set value in ventilated preterm infants with respiratory distress syndrome and was not associated with over-ventilation or a difference in mortality or morbidity when compared to SIMV+VG. Thus, it appears that PSV+VG is a safe mode of mechanical ventilation. Hulse and Mai point out that, despite the small sample size and the insufficient paired tracheal aspirates, studies like this can collectively mean real improvements for the care of our patients.

The objective of the study by Jalil et al was to evaluate the usefulness and clinical impact of a NIV protocol in hospitalized children with acute respiratory failure due to acute lower respiratory infection. They reported that implementation of a NIV management protocol that integrates initiation and discontinuation criteria for NIV was feasible. However, its use showed no advantages over a non-protocolized strategy.

Hassinger et al describe the use of negative pressure ventilation (NPV) in a heterogeneous critically ill, pediatric population. They found that NPV was feasible for pediatric acute respiratory failure. It was associated with few complications and had a 70% response rate. Children on NPV often required intravenous sedation for comfort and one third received delayed enteral nutrition. Those who required escalation from NPV worsened within 6 hours.

The integrated pulmonary index (IPI) utilizes an algorithm based on the measurement of end-tidal CO_2, breathing frequency, heart rate and oxygen saturation to provide an assessment of a patient's ventilatory status. The clinical trial by Kaur et al was designed to determine if lower IPI values were associated with extubation failure. They found that declining IPI measurements post extubation were predictive of extubation failure.

Chu and colleagues explored the risk and related factors of reintubation within 14 d for subjects who were liberated from mechanical ventilation. Factors associated with reintubation within 14 d after ventilator liberation are related to the level and quality of the care setting. Thus, to prevent reintubation, more attention should be paid to higher-risk ventilator-dependent patients after they are liberated from mechanical ventilation.

The study by Eryüksel and colleagues examined the value of ultrasound-based diaphragmatic thickness fraction in identifying subjects with COPD at high-risk for the development of symptoms and exacerbations. They found that diaphragmatic thickness fraction measurements based on ultrasound assessment in subjects with COPD appeared to be unable to identify high-risk subjects for symptoms and exacerbations as defined by the GOLD composite disease index.

Choi et al aimed to measure reflexive cough strength by CPF induced by citric acid nebulization in subjects with stroke. They found that subjects with stroke had a reduced CPF and more limited diaphragm excursion during the citric acid-induced reflexive cough test. This might increase the likelihood of aspiration pneumonia.

Rassool and colleagues evaluated a low-pressure oxygen storage system that addresses electricity fluctuations and failure during blackouts in low-resource settings. They found that the system was robust and durable. They suggest that this system is ready for clinical field trials.

The objective of the study by Cid Juarez and colleagues was to describe maximum voluntary ventilation (MVV) in healthy individuals residing at 2,240 m above sea level and compare it to the reference values customarily employed. Reference values for MVV from studies conducted at sea level were inaccurate at this altitude. At this altitude, MVV was about 45 times measured FEV_1. The best prediction equations for MVV were calculated separately for females and males, and included age and measured FEV_1 as predictors.

This month we publish a review on the use of speaking valves in children with tracheostomy tubes and another on the evidence supporting the value of the RT.