Our Editor's Choice paper relates to the use of a shared canister for the delivery of metered dose inhalers (MDI) during mechanical ventilation. Gowan and colleagues conducted a prospective trial of shared canister MDI therapy or single-patient canister MDI therapy. They found that shared canister MDI therapy was associated with a significant cost savings. There were similar rates of ventilator-associated pneumonia, hospital mortality, and length of stay. However, there was a greater prevalence of ventilator-associated events.

Natt et al determined trends in use of extracorporeal membrane oxygenation (ECMO) for ARDS in the United States from 2008 to 2012. In 2008, about 1 in 1,000 patients with ARDS underwent ECMO. Over the subsequent 4-year period, there was a 0.19% absolute increase and 70% relative increase in use of ECMO for ARDS. The mortality among patients with ARDS in whom ECMO was used declined from 78% to 64% in 2012. In their editorial, Rehder and Turner suggest that clinicians and investigators go beyond descriptions of how we use ECMO, and push for thoughtful and detailed investigation into true optimization of decision-making to guide the when and why of this complex therapy.

The effect of introducing high flow nasal cannula (HFNC) on duration of respiratory support and length of stay was evaluated by Hoffman and colleagues. Introduction of HFNC was associated with a significantly longer duration of mid-level respiratory support, decreased oral feeding, increased retinopathy of prematurity, and greater use of intermediate care facilities. Todd and Heath Jeffery point out that this is the third publication since 2015 to show increased morbidities in neonates who received HFNC. It is imperative to review the implementation and weaning protocols for HFNC in preterm neonates, especially those < 28 weeks' gestation.

Modalities and complications associated with HFNC in a pediatric intensive care unit is reported by Baudin et al. HFNC was associated with a relatively low rate of complications. New pneumothorax requiring chest tube insertion occurred in 1%, chest tube-related air leaks were noted in 3%, and significant epistaxis was noted in 0.6%. The HFNC failure rate was 18%.

Carabini et al evaluated the clinical significance of two transport modalities, human courier and pneumatic tube system, for blood gas specimens. They found that the difference in the P_{O_2} and P_{CO_2} of paired (walked vs tubed) arterial and venous blood gas specimens demonstrated a slight bias. However, the difference was not sufficient to impact clinical interpretations of blood gas values.

The purpose of the study by Lu and colleagues was to determine the prevalence of diaphragmatic dysfunction diagnosed by B-mode ultrasonography, and to determine whether prolonged weaning with diaphragmatic dysfunction present increased duration of mechanical ventilation, compared to those without diaphragmatic dysfunction. They found that diaphragmatic dysfunction was common in subjects with prolonged weaning and those with diaphragmatic dysfunction had longer time on mechanical ventilation and in the ICU.

Labadessa et al analyzed the intra- and inter-rater reliability of 6-min walk test (6MWT) in subjects with COPD. The 6MWT showed excellent reliability for distance and perceived exertion in both intra- and inter-rater analysis. For cardiorespiratory variables, reliability was moderate to excellent for intra- and inter-rater analysis, except for oxygen saturation. The authors concluded that the 6MWT could be compared when conducted by 2 different evaluators.

The study by Alfarroba and colleagues evaluated the effect of pulmonary rehabilitation on exercise capacity, symptoms, and health status by COPD category. They found that subjects in all COPD categories might improve exercise capacity, symptoms and health-status with pulmonary rehabilitation. Thus, COPD categories alone are not sufficient to discriminate which patients benefit.

Bédard and McKim evaluated use of daytime mouthpiece ventilation in subjects with amyotrophic lateral sclerosis (ALS). They found that mouthpiece ventilation provided effective ventilation and prolonged survival for individuals with ALS requiring full time ventilatory support that had adequate bulbar function.

Duchenne muscular dystrophy (DMD) respiratory care guidelines recommend scheduled respiratory assessments and use of respiratory assist devices. Andrews and colleagues assessed respiratory care received by individuals with DMD from 2000 to 2011. The frequency of respiratory assessments and assist device use among males with DMD was lower than recommended. The authors advise collaboration of respiratory therapists and pulmonologists with clinicians caring for individuals with DMD to ensure access to the full spectrum of in-patient and out-patient pulmonary interventions.

Rose et al conducted a national Canadian study to assess the use of cough augmentation techniques in critically ill patients. They found moderate adoption of cough augmentation techniques, particularly for secretion management. They suggest that lack of clinician expertise and knowledge are potentially modifiable barriers addressed with educational interventions.

The objective of the study by Litinsky and colleagues was to evaluate the utility of induced sputum analysis of cellular and soluble materials in subjects with systemic sclerosis, compared to healthy controls. They found that induced sputum showed changes in cellular pattern and correlation with several highly relevant clinical and pulmonary function parameters in subjects with systemic sclerosis.

Inter-rater agreement of auscultation, palpable fremitus, and ventilator waveform sawtooth patterns between clinicians in mechanically ventilated subjects was evaluated by Berry et al. Inter-rater agreement for all assessments showed variability between lung regions, but maintained reasonable agreement in mechanically ventilated subjects. These assessments should not necessarily be viewed in isolation but interpreted within the context of a full clinical assessment.

Forti and colleagues evaluated lung function, respiratory muscle strength and thoracoabdominal mobility in women with fibromyalgia syndrome. Subjects with fibromyalgia syndrome had less respiratory muscle endurance, inspiratory muscle strength and thoracic mobility than healthy subjects. In addition, inspiratory muscle strength was associated with the number of active tender points, fatigue and axillary mobility.