This month's Editor's Choice is a study of burnout in respiratory therapists (RTs) during the COVID-19 pandemic. Miller and colleagues surveyed 26 U.S. medical centers to determine the incidence and factors contributing to burnout; the response rate was 37%. Burnout was associated with hours worked per week, hours per week in the ICU, inadequate staffing, inability to complete assigned work, more frequent exposure to COVID-19, and a negative view of leadership. They concluded that burnout was common among RTs during the pandemic. Good leadership was found to be protective against burnout. Meissen reviews the factors associated with burnout and resilience, and details mitigation strategies.

Kallet et al address the issue of excessive inspiratory effort potentially leading to patient self-induced lung injury. They evaluated the utility of an expiratory pause maneuver (EPM) in a bench model to determine the inspiratory muscle pressure (P_{mus}). Using a 1-s EPM they demonstrated good concordance between the change in airway pressure and P_{mus} which was unaffected by operator. They concluded that the EPM could be used clinically to monitor inspiratory effort in patients. Plens and Costa contribute an editorial detailing the advantages of the EPM and the potential for overestimation of P_{mus} in certain patients. They urge validation in clinical trials.

Vitacca and coworkers evaluated lung function, exercise capacity, and symptoms in subjects recovering from COVID-19 compared to individuals with COPD or interstitial lung disease (ILD) and exercise-induced desaturation (EID). The subjects underwent assessment of dyspnea, dynamic lung volumes, carbon monoxide diffusion capacity, and 6-min walk test (6MWT). They found that COVID-19 survivors had responses similar to ILD and more severe than subjects with COPD. Swenson and Schwartzstein provide an accompanying editorial noting that the contribution of exertional hypoxemia to dyspnea and exercise limitation is still unclear. They suggest that screening COVID-19 survivors for exertional hypoxemia, both as a treatable characteristic as well as a marker for poor prognosis and additional therapy, is warranted.

Zingg and colleagues performed a retrospective review of over 500 subjects with chest injuries to evaluate the impact of pulmonary contusion on outcomes. Not surprisingly, more severe chest injuries were associated with pulmonary contusion, longer ICU length of stay, and increased duration of mechanical ventilation. They concluded that the presence of pulmonary contusion remains an important factor in intensity of care.

Bhatt et al performed a retrospective analysis of 26 COVID-19 subjects with respect to pulmonary mechanics and ventilator settings in an attempt to identify if subjects could be categorized into phenotypes. The subjects had a median P_{aO_2}/F_{IO_2} of 86 mm Hg and a lung compliance of 25 mL/cm H_2O, with a mortality rate of 61%. Survivors had a median duration of ventilation of 35 d. They reported that high PEEP and elevated D-dimer were associated with increased physiologic deadspace without a significant impact on oxygenation, suggesting the potential for microvascular dysfunction.

Miller and colleagues retrospectively reviewed the use of high-frequency jet ventilation (HFJV) in 27 infants with congenital heart disease over a 5-year period. The mortality rate was 48% and 22% of subjects transitioned to ECMO. Their main findings were a reduction in P_{aCO_2} and an increase in pH after 4–6 h on HFJV.

Lopes et al performed a cross-sectional study of 117 COVID-19 survivors comparing impulse oscillometry (IOS) to spirometry and lung ultrasound. More than half the subjects had abnormal IOS findings. They concluded that IOS detected changes when spirometry was normal and correlated with findings on ultrasound.

Proklou and coworkers retrospectively reviewed the ventilatory ratio (VR) in 572 subjects during ventilator liberation. They reported that successful liberation was associated with VR < 2, while VR > 2 was associated with prolonged ventilation. They concluded that VR might be an additional metric for determining successful liberation from the ventilator.

Cheng et al evaluated the impact of spontaneous breathing trials (SBTs) on end expiratory lung volumes (EELV) in 44 subjects with a tracheostomy. They compared EELV during an SBT with and without 5 cm H_2O PEEP. Subjects who experienced a larger change in EELV with 5 cm H_2O of PEEP had a higher likelihood of successful liberation. They concluded that the change in EELV during a 60-min SBT might be predictive for successful liberation from mechanical ventilation.

Norisue and others used ultrasound to measure diaphragmatic movement during cough in mechanically ventilated subjects. They compared cough peak flow (CPF) to passive cephalic excursion of the diaphragm (PCED) in 252 subjects following a successful SBT. They concluded that PCED on ultrasonography was significantly associated with CPF and extubation failure after a successful SBT.

Delorme and coworkers performed a bench study of high-flow nasal cannula (HFNC) devices across a range of flows and ambient temperatures. They measured relative humidity and temperature to determine absolute humidity (AH). They also evaluated comfort reported by healthy volunteers with HFNC at AH of 20-40 mg H_2O/L. Comfort scores were lower at 20 mg H_2O/L than higher values. The authors concluded that when used according to manufacturer's recommendations and at normal ambient temperature, HFNC devices were able to deliver ≥30 mg H_2O/L. They recommend that users understand the principles of HFNC device operation under all conditions.

Johnson et al report the results of an online survey of sleep medicine healthcare workers regarding their concerns related to COVID-19. The anonymous survey included responses from 75 physicians and 283 technologists. The major concern identified was virus transmission from CPAP systems. Respondents stated that aerosol precautions were very important but varied by scenario. The authors concluded that healthcare workers had a high level of concern about COVID-19 exposure and expressed the importance of mitigation strategies.

Kim et al reviewed adverse drug reactions (ADR) from the FDA adverse event reporting system for 25 drugs introduced since 2012 for use in chronic lower respiratory disease. They identified 61,682 ADR reports and found that post-marketing reports resembled much of pre-marketing clinical trials data for COPD medications, except for fluticasone furoate/vilanterol, which was different.

Thind and others describe the use of high-frequency oscillatory ventilation (HFOV) as a rescue therapy in adults with ARDS. They retrospectively reviewed data from 48 subjects treated with HFOV over a decade. At 3 h, subjects had improved oxygenation and increased vasopressor requirements. The mortality rate was 92%. The investigators concluded that HFOV as a rescue strategy isn't justified, but that delayed timing of HFOV initiation and detrimental hemodynamic effects are among potential reasons for poor outcomes.

Blain and Ari performed a retrospective review of the academic performance of 33 respiratory care students to determine attributes related to success. They found no differences related to age, sex, class start times, or prior military service. There was a positive correlation between student performance in select classes and success on the NBRC exam.

Huijsmans and others provide a systematic review on the epidemiology and outcomes of pediatric ARDS following traumatic injury. They found that mortality following post-traumatic ARDS was higher than other causes of ARDS, possibly as a consequence of multisystem organ failure. Gupta et al provide a narrative review of interdisciplinary care to reduce asthma readmissions in safety net hospitals.