Hookah smoking is a public health concern. Calvanese et al address this in our Editor's Choice paper. They conducted 44 telephone interviews with parents of college students to explore perceptions, beliefs, behaviors and information seeking related to hookah smoking. They found that parents are lacking in awareness and knowledge of hookah smoking, and the health consequences. As Boone points out in her editorial, existing evidence on the health risks of hookah smoking shows that it is correlated to the same diseases caused by cigarette smoking, and perhaps others. Access to hookah smoking is growing at an alarming rate in the United States, particularly among adolescents. The role of parents in affecting this practice could be extremely important.

Our next 2 papers relate to mechanically assisted cough devices. The aim of the study by Moran and colleagues was to investigate the impact of home use of mechanical insufflation-exsufflation (MIE) on the child and family's lifestyle. Use of MIE had a positive impact on the ability to manage the child's health. It had a negative impact, however, for some parents. Frigerio et al performed a bench study comparing 5 mechanical assisted cough devices and also assessed their user-friendliness. They found varying performances among the devices, which were inadequate in some cases. Willis and Berlinski speculate that the results of the Moran study might have been different depending on the disease stage of the interviewed subjects. They also point out that step-by-step voice guided instructions and positive feedback might be helpful in reducing errors and retraining caregivers on the appropriate use of these devices. Perhaps most important, clinicians should be aware of the psychological impact that new devices might have on patients and families; this should be balanced against the patient's clinical condition, as well as the culture and context of the family.

The study by Sasabuchi et al sought to determine whether obesity was associated with lower mortality in the ICU for subjects receiving or not receiving mechanical ventilation. A high body mass index was associated with low mortality in the mechanically ventilated group. For the non-ventilated group, there was a reverse J-shaped association, with a higher mortality in underweight subjects in both groups. Anyone working in the ICU appreciates the challenges associated with the care of obese patients - difficult airway management, difficult liberation from the ventilator, challenging central venous catheter placement, unreliable hemodynamic measurements, unreliable medication dosing, and labor-intensive nursing care. As Shipe reminds us in his editorial, multiple meta-analyses suggest a lower mortality rate among critically ill obese subjects, which is known as the obesity paradox. This study provides additional support for the obesity paradox, but like other similar studies does not explain the mechanism for this finding.

Sebbane and colleagues evaluated the effects of weight loss on postural changes in lung volumes and pulmonary function for obese subjects. They tested the hypothesis that supine reduction in FRC would be absent in morbid obesity and recovered upon weight loss. They found that, while postural change in FRC was absent when the morbidly obese adopted a supine position, supine reduction in FRC could be recovered following gastroplasty-induced weight loss. Mild to moderate obesity affects supine FRC more than morbid obesity.

The aim of the study by Drevhammar and colleagues was to evaluate 7 ventilators confronted with leaks during neonatal nasal CPAP. They found that there was no simple relationship between maintaining delivered CPAP during leaks and providing CPAP with low-pressure swing amplitude. They also found that compensation for leakage does not necessarily provide pressure stable CPAP.

The feasibility of neurally adjusted ventilatory assist (NAVA) mode with NIV after infant cardiac surgery was evaluated by Houtekie et al. They found that NIV with NAVA allows good synchronization in infants weighing less than 5 kg. NIV with NAVA also decreased the work of breathing more effectively than CPAP. This paper provides some insights into the use of NAVA in this patient population.

El Taoum et al developed an anatomically correct model of a 7-month old infant and a 5-year old child with an interposed collection filter to evaluate aerosol delivery by the nasal route. They found that lung dose varied between 0 and 3%. Interestingly, the jet nebulizer was more efficient than the vibrating mesh nebulizer. The authors correctly conclude that careful pairing of the aerosol generator and the interface is very important to achieve effective trans-nasal aerosol deliveries.

In another in vitro aerosol delivery study, Alhamad and colleagues evaluated the effect of aerosol devices and administration techniques on drug delivery in a simulated spontaneously breathing pediatric model with a tracheostomy. They found that the pMDI delivered the highest inhaled mass percent, while the vibrating mesh nebulizer delivered the greatest inhaled mass. The jet nebulizer was the least efficient device. Delivery efficiency was similar with unassisted and assisted administration techniques. Although a bench study, this paper provides some insights into aerosol delivery in pediatric patients with a tracheostomy.

Verceles et al studied the association between vitamin D concentration and successful liberation from mechanical ventilation in subjects requiring prolonged mechanical ventilation. They found that vitamin D deficiency is common in ICU survivors requiring prolonged mechanical ventilation. However, there was no significant relationship between vitamin D concentrations and successful ventilator liberation. Intervention studies assessing the effects of vitamin D supplementation in this population are needed. At this time, it is unclear the role that vitamin D might play in the process of ventilator liberation.

Dhooria et al conducted a meta-analysis to estimate the overall diagnostic yield and safety of bronchoscope-guided fine-needle aspiration (EUS-B-FNA) combined with endobronchial ultrasound-guided transbronchial needle aspiration (EBUS-TBNA), in the diagnosis of mediastinal lymphadenopathy. The results of the meta-analysis suggest that combining EBUS-TBNA and EUS-B-FNA is an effective and safe method, superior to EBUS-TBNA alone, in the diagnosis of mediastinal lymphadenopathy.

In subjects with obesity-hypoventilation syndrome (OHS), Georges and colleagues evaluated the reliability of apnea-hypopnea index (AHI) measured by a bi-level pressure support home ventilator, versus a polysomnographic assessment. They found that, in stable subjects with OHS, the home ventilator software tested was appropriate for determining if control of respiratory events was satisfactory under NIV or if further testing or adjustment of ventilator settings is required. This study helps to inform the role of measures such as the AHI provided by ventilators used in the home.