Editor’s Commentary

The American Heart Association released updated guidelines for cardiopulmonary resuscitation (CPR) in 2005. These guidelines changed the focus of CPR away from ventilation to strategies to improve circulation. Recommendations included more rapid chest compressions, fewer interruptions in chest compressions, delivery of chest compressions before defibrillation, full chest wall recoil between compressions, lower tidal volume and inspiratory time, and use of an impedance threshold device (ITD). Thigpen and colleagues evaluated the impact of these guidelines in 2 community hospitals. They found that implementation of the new CPR guidelines resulted in an increase in survival from 17.5% to 28%, with similar neurological function in the 2 groups. These results suggest that the newer CPR guidelines that focus on improved circulation may reduce hospital mortality from in-hospital sudden cardiac arrest. As Barnes points out in his editorial, respiratory therapists (RTs) are represented on virtually every hospital CPR team and rapid response team. As such, RTs are in the position to provide leadership in this area, particularly as related to evidence-based approaches such as ventilation strategies and use of the ITD during CPR.

The 6-minute walk test (6MWT) is commonly used for the evaluation of exercise tolerance in patients with pulmonary and cardiac disease. Few studies have evaluated the reliability and validity of the 6MWT in patients with cystic fibrosis (CF). Ziegler et al found that, although the 6MWT distance was reproducible, the wide limits of agreement exceeded the minimum important difference for this test. This indicates that, in the routine evaluation of CF patients, at least 2 6MWTs are required on any testing occasion to obtain a reliable estimate of the 6MWT distance.

We are pleased to publish 7 papers this month from the New Horizons symposium, “Airway Management: Current Practice and Future Directions.” This symposium was presented as part of the 2009 AARC International Respiratory Congress in San Antonio, Texas. As an organizer and as reviewed by guest editor Ulrich H Schmidt, these papers provide a state-of-the-art overview of airway management.

Emergency airway management is associated with a high complication rate. This topic is reviewed by Gudzenko et al. As they discuss, the complication rate associated with emergency airway management may be reduced by careful prior patient evaluation, appropriate pharmacology during intubation, and monitoring of cardiopulmonary stability in the immediate post-intubation period.

As described by Hurford, the development of less expensive, smaller, and more reliable video cameras has revolutionized the design of laryngoscopes and the technique of endotracheal intubation. Hurford groups video laryngoscopes into 3 different designs: styles, guide channels, and video modifications of traditional laryngoscope blades. He then describes the strengths, weaknesses, and best applications for each.

Modification of the endotracheal tube to reduce microaspiration and/or biofilm formation may play a role in prevention of ventilator-associated pneumonia. There are several approaches, including specialized cuffs, providing suction above the cuff (subglottic aspiration), silver coating of the tube, and combinations of these. Whether or not these newer endotracheal tube designs make a clinical difference is reviewed by Deem and Treggiari. As they correctly state, despite numerous studies of various such interventions, there is insufficient evidence upon which to base strong recommendations. Moreover, important safety concerns remain regarding the use of some of these devices and their cost-effectiveness.

Tracheostomy tubes are placed for a variety of reasons, including failure to wean from mechanical ventilation, inability to protect the airway, inability to manage excessive secretions, and upper-airway obstruction. Durbin reviews tracheostomy, which is one of the most frequent procedures performed in the intensive care unit (ICU). A tracheostomy tube is required in approximately 10% of patients receiving mechanical ventilation. As he points out, the only advantage of tracheostomy with supporting evidence is earlier discharge from the ICU and the hospital. The appropriate timing of tracheostomy in mechanically ventilated patients remains elusive. But many agree that it should occur as soon as the need for prolonged intubation (longer than 14 d) is identified. Bedside techniques to perform tracheostomy, such as percutaneous dilation techniques, are safe and efficient, allowing timely tracheostomy with low morbidity.

There are few data available to guide the timing of routine tracheostomy tube changes. Thus the paper by White et al is welcome. The first tracheostomy tube change carries some risk and should be performed by a skilled clinician in a safe environment. The risk associated with changing the tracheostomy tube then usually diminishes over time as the stoma matures. Endoscopy can be helpful to ensure optimal positioning of a replacement tracheostomy tube.

Although much has been written about the timing of extubation, little has been written about the timing of tracheostomy decannulation. Issues related to decannulation are discussed by O’Connor and White. The presence of a tracheostomy tube can be the source of a number of complications, which include tracheal stenosis, bleeding, infection, aspiration pneumonia, and fistula formation from the trachea to either the esophagus or the innominate artery. Final removal of the tracheostomy tube is an important step in the recovery from chronic critical illness and can usually be done once the indication for the tube placement has resolved.

As described by Deutsch, pediatric patients for whom tracheostomy is considered have different anatomy, medical conditions, and prognoses than adults. Even the tracheostomy tubes are different. Subglottic stenosis is an important indication for tracheotomy in children. This paper includes important discussions of the benefits, risks, impact on families, techniques for tracheotomy tube changes, and alternatives to tracheotomy.

We publish 2 case reports this month. The first, by Fuschillo et al, presents a case of severe respiratory and skeletal muscle involvement in a carrier of dysferlinopathy with chronic obstructive pulmonary disease. The second is by Chen et al and describes a case of mediastinal teratoma with pulmonary involvement presenting as massive hemoptysis in 2 patients. The Teaching Case of the Month is by Schumann et al and describes the removal of an aspirated foreign body with a flexible cryoprobe.