

Respiratory Controversies in the Critical Care Setting

The past decade has seen numerous advances in the understanding and practice of respiratory care in the critical care setting. The need for respiratory support is a major indication for intensive care unit admission and greatly influences the duration of intensive care stay. Despite substantial research advances in both the adult and pediatric populations, numerous clinical controversies continue to exist regarding the many aspects of the respiratory care of the critically ill patient.

One area of respiratory care that sparks intense debate is the optimal ventilatory management of the critically ill patient. The Acute Respiratory Distress Syndrome (ARDS) Network has clearly demonstrated that adult patients with acute lung injury should be ventilated with a tidal volume of 6 mL/kg.¹ However, should all mechanically ventilated adult patients be ventilated with the same low tidal volume? What about pediatric patients? The ARDS Network published tables that recommend certain positive end-expiratory pressure (PEEP) levels and fraction of inspired oxygen (F_{IO_2}) levels for adult patients with acute lung injury.² But do these tables provide the best evidence-based guide to balancing PEEP and F_{IO_2} settings in adults? Again, what about children? Furthermore, should recruitment maneuvers routinely be used in the management of acute lung injury and ARDS? Beyond conventional ventilation, does high-frequency ventilation offer clear benefits in adult ARDS patients?

Important controversies also exist for non-ARDS patients. Inhaled antibiotics are effective in patients with cystic fibrosis.³ However, are inhaled antibiotics effective for the prevention and treatment of ventilator-associated pneumonia in patients without cystic fibrosis? Capnography has clearly become the standard of care to confirm tracheal positioning of the endotracheal tube.⁴ However, should every mechanically ventilated patient be monitored with capnography from intubation to extubation? Should weaning protocols be utilized with all patients receiving mechanical ventilation? Furthermore, is noninvasive ventilation indicated for all forms of acute respiratory failure?

This and the next issue of *RESPIRATORY CARE* include 13 articles focused on respiratory care controversies that are commonly encountered in the management of the critically ill patient. Our primary goal is to query the status quo by highlighting valuable lessons learned from the medical

literature to better enable clinicians to make informed decisions. These controversies were selected to provoke thought and speculation, to stimulate discussion, and to encourage further scientific investigation. While some answers to the clinical controversies are provided in this and the next issue of *RESPIRATORY CARE*, most of the questions are yet to be definitively answered.

This is the first of the 38 *RESPIRATORY CARE* Journal Conferences that focuses on key respiratory care controversies, with each article presented as a pro/con debate. It should also be noted that this is the first Journal Conference to focus on the care of both pediatric and adult patients. For each controversy, both sides of the argument are presented in a single paper. It is our hope that by presenting both sides of each debate as scientifically as possible, the reader will be able to see the various issues at hand and gain a better insight into the controversy. It should be noted that the views presented may or may not reflect the personal opinions of the authors.

We are grateful to David Pierson and the contributing presenters/authors of this *RESPIRATORY CARE* Journal Conference for their dedication, expertise, and willingness to “go out on a limb” and try this unique format for a publication. Their incredible enthusiasm, flexibility, and, of course, tremendous expertise have been essential to the success of this conference. We also very much appreciate the support of *RESPIRATORY CARE* and the American Respiratory Care Foundation for their assistance with and sponsorship of this important Journal Conference. We look forward to continuing to advance the respiratory care of the critically ill patient over the next decade, during which we may hope to see the answers to these controversies.

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Elk jousting in Banff, Alberta, Canada,
Site of the conference,
Respiratory Controversies in the Critical Care Setting
Photo courtesy of David J Pierson