BACK TO THE FUTURE: RESEARCH FRONTIERS IN CRITICAL RESPIRATORY CARE.

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Objective: To review the recent developments in clinical practice and clinical engineering as they relate to improved management of respiratory diseases in critically ill patients and patient outcomes.

Background and Review: Intensive care resources rarely match demands regardless of how much money is invested in providing acute care services. It is thus imperative to balance costs and benefits to ensure equitable distribution of resources. Improvements in respiratory care involve many different aspects of the patients “intensive care journey”. The impact of the following on patient outcome will be reviewed:

- Newer modes of ventilation to improve patient synchrony with mechanical ventilation
- New concepts and methods of ventilation in ARDS
- The importance of education and training to support and standardise treatments
- Development of protocolised care; the good, the bad and the ugly side of managed care.
- Using high quality audit to improve practice and to generate hypotheses for future clinical research

Summary: Poor application of up-to-date clinical practice and/or misunderstanding of the complexities in the multimodal care in patients with severe respiratory disease remain one of the greatest challenges in critical care medicine.