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### Editorial: Extracorporeal Membrane Oxygenation



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The use of extracorporeal membrane oxygenation (ECMO) in critical care is growing. From its initial use back in the 1950s in cardiac surgery, it is now an important tool for life-saving organ support, with clear indications for use in neonates and growing use in paediatric ICUs. ECMO for adult patients is also expanding in use (over 400% between 2006 and 2011 in the USA, for example (Sauer et al. 2015)). In our cover story we hear about ECMO in immunocompromised patients, its use with trauma patients, and the role of the perfusionist in European ECMO centres.

First, Matthieu Schmidt and Alain Combes consider the use of ECMO in immunocompromised patients with acute respiratory distress syndrome (ARDS). It is controversial, as these patients are at greater risk of ECMO-related complications. However, pending evidence from large-scale trials, Schmidt and Combes recommend ECMO for severe cases in patients in whom there is prospect of a cure. Thomas Bein then explores why and when to use extracorporeal lung assist with trauma patients, despite the challenges that are immense even for a high-level trauma centre. Perfusionists perform a key role in the operating room (OR) during cardiac surgery. However, when the technology is used outside the OR, roles and responsibilities are varied. Leen Vercaemst reports on a survey by the European Extracorporeal Life Support Organization that explored the perfusionist role across Europe.

Our 2016 series is on Biomarkers. Pedro Póvoa, Jorge Salluh, Vandack Nobre and Ignacio Martin-Loeches review what is new in biomarker-guided antibiotic therapy and describe an algorithm for decision-making using time/ clinic course and biomarker level.

The Matrix section starts with a look at medication safety. James Hanison and Tony Thomas outline strategies to reduce risks, with a caveat that technology is not necessarily the solution. Next, Caleb Fisher, Darshi Karalapillai, Daryl Jones and Rinaldo Bellomo review the tools available to diagnose frailty, its application to perioperative and critically ill patients and who can administer these tools. While patient frailty is an important factor in patient outcome, there is no consensus definition of "frailty" and the two main frailty models are validated for community use rather than at the bedside.

In the ongoing fight against hospital-acquired infection antimicrobial copper is increasingly recognised as a key tool. Angela Vessey explores the evidence and the cost benefits for replacing high touch surfaces such as bedrails and IV poles with equipment that includes copper alloys. Another potentially cost-saving tool in the ICU is bedside ultrasonography. Nidhi Nikhanj shares six proven steps from his organisation based on their introduction of point-of-care ultrasound in critical care. In the final article in the Matrix section, Sven Zenker starts from the observation that critical care has the highest density of quantitative data derived from direct physiological measurement. However, the tools to turn this measurement into understanding to drive better protocols are not yet routinely available. Zenker explores the reasons and suggests possible solutions.

In our Management section this year we will hear not only from intensivists, but from other members of the critical care team. We start appropriately in this issue with the patient at the centre. Catherine White, who is a critical care survivor working for the ICUsteps charity, explains why patients and families should be involved in ICU service planning and research and provides pointers for intensive care teams on the best way to promote involvement.

Next Ella Segaran explores the role of the dietitian in critical care, a role that is fundamental and looks set to grow even further, as advanced-level dietitians in the UK have just gained supplementary prescribing rights. Then Girendra Sadara and Victoria Treadway explain why a librarian on ward rounds can assist the critical care team as a 'knowledge mobiliser'. Last, Hans Flaatten looks at the vexed issue of bibliometrics and new methods of looking at publication impact in this age of social media.

My colleague Professor Todd Dorman is a long-standing member of the ICU Management & Practice Editorial Board. He just became President of the Society of Critical Care Medicine, and I am delighted that he could take time for an interview in this issue.

Our Country Focus is Denmark. Prof. Ingrid Egerod is an active critical care researcher, and she is interviewed about the state of critical care in

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Denmark. Last, Prof. Anders Perner writes about the recently-established Centre for Research in Intensive Care, a focal point for critical care researchers in Denmark.

This issue will be out at the International Symposium on Intensive Care and Emergency Medicine in Brussels. I hope to see you there!

As always, if you would like to get in touch, please email [editorial@icu-management.org](mailto:editorial@icu-management.org).

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