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Personalised/ Precision Medicine

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The progress towards, and potential of, personalised/ precision medicine in intensive care is the theme for our cover story. We are making progress in moving away from therapies based on poorly characterised patient populations to more personalised treatment of critically ill patients, although true precision medicine, based on individual genes, environment and so on lies some way in the future. Andrew Prout and Sachin Yende discuss the challenges of precision medicine in sepsis and suggest potential implementation strategies. Ignacio Martin-Loeches, Lieuwe Bos and J. Perren Cobb consider precision medicine for acute respiratory distress syndrome, and suggest that in the post-genomic era, precision medicine is more likely to provide the next big advances in ARDS diagnosis, treatment and outcomes.

The World Health Organization recently issued its first global priority list of antibiotic-resistant bacteria (https://iii.hm/8xt). This follows the 2013 publication of a similar list by the U.S. Centers for Disease Control and Prevention. It is certainly time to take antimicrobial resistance seriously, as Jan de Waele argues in the first article in the Matrix section this issue. While data on the scale of the problem in ICUs is limited, the ICU team needs to do all it can to ensure appropriateness of antibiotic therapy in patients with infections due to multidrug resistant (MDR) pathogens while minimising antibiotic exposure in all ICU patients in the ICU, he argues. Next, Jeroen Schouten describes a stepwise approach to implementing antimicrobial stewardship in the ICU. He advises starting with the basics, targeting one problem at a time, and taking a structured approach with the Plan-Do-Study-Act cycle.

Fabienne D. Simonis, Marcus J. Schultz and Antonio Artigas discuss the evidence on the benefit of protective ventilation strategies in patients without ARDS, including the use of low tidal volumes, higher levels of PEEP and lower driving pressure levels. They look forward to the results of several ongoing randomised controlled trials.

Next, Giuseppe Citerio puts the case for quantitative EEG in the ICU. It's both useful and feasible, he says, and he describes how it was implemented in his neurointensive care unit, supported by a neurophysiologist. Continuing in neurocritical care, Timothée Abaziou and Thomas Geeraerts explain the use of brain ultrasound as a promising tool to visualise most of the intracranial structures, allowing estimation of risk posed by life-threatening conditions.

In the late 1990s, albumin came under fire for increasing mortality in critically ill patients, and use declined in many countries. Neil J. Glassford and Rinaldo Bellomo outline the case for and against albumin administration in sepsis, concluding that clinical judgement and physiological reasoning, rather than strength of evidence, are still the primary drivers for the administration of albumin in critically ill patients.

Our Management section begins with an article on the patient perspective, from Julie Vermeir and Darryl O'Callaghan, who describe their 'virtual Everest'—the journey they took as husband and wife after Darryl was critically injured in a road accident. They now use that experience as consumer representatives in a large hospital.

Human factors specialists can make healthcare safer for both staff and patients in many ways, as explained by Svetlena Metzger. Their roles can

include mitigating risks, investigating incidents, testing equipment and re-designing processes. Next, Fiona Coyer and Jeff Lipman outline the establishment of a Intensive Care Nursing Professorial Unit, which aims to build an active research culture and support intensive care nurses in evidence-based practice.

Even in the 19th century, Florence Nightingale observed the beneficial effects of music on patients. Former ICU patient, Helen Ashley Taylor, describes a project from Music in Hospitals™, which brings professional musicians into the ICU.

Patient safety expert, Peter Pronovost, is interviewed for this issue. We asked him to share his thoughts on progress on safety since the publication of To Err is Human, what the ICU of the future should be like, and much more.

China is the subject of our Country Focus. Bin Du summarises the state of intensive care medicine in this vast country—as a discipline it was relatively recently recognised as a specialty, and postgraduate education and more participation in research is needed, he says.

The *ICU Management & Practice* team will be at the International Symposium on Intensive Care & Emergency Medicine (ISICEM) , which meets for the 37th time this month in Brussels. Hope to see you there As always, if you would like to get in touch, please email JLVincent@icu-management.org

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