



**SPECIAL SUPPLEMENT**

Pain Management  
in the ICU

# Innovation

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# Innovation

The burden of critical illness is a major concern in healthcare. This burden is expected to continue to increase as our population ages. Our cover story **Innovation** highlights the growing problem of critical illness and the need to develop improved practices and implement new and advanced solutions to meet the expected challenges. Our contributors envision the ICU of the future and discuss the changing needs of critical care patients and critical care practice.

Frederic Michard, Tong J Gan and Rinaldo Bellomo highlight the importance of finding patients before they crash and discuss the recent advances and perspectives for ward monitoring with wearable sensors and smart algorithms.

Federico Gordo, Ana Abella, and Beatriz Lobo-Valbuena summarise developments in mechanical ventilation that they believe are shaping the present and will shape the future ahead.

Fernando Jose da Silva Ramos and Jorge Ibrain Figueria Salluh talk about data driven management for intensive care units and discuss the clinical and practical application of current available cloud-based data analytics to benchmark in real-time and to optimise clinical care in the ICU.

Nutrition is another important element of critical care. Pierre Singer and Liron Elia discuss technology innovations in delivering accurate nutrition and how malnutrition can be prevented by enforcing nutritional guidelines and using innovative approaches.

Juan B. Ochoa Gautier talks about the value of physicians and their contribution to the healthcare system and economic growth. He highlights the need to understand the real value of physicians and to encourage them to be creative and innovative.

Theodoros Kyprianou introduces our new Informatics and Technology section. He talks about the role of disruptive and hybrid technologies in acute care. He outlines the issues that will be the focus of this new section and how it will serve as an open forum to discuss the role technology can play in acute, emergency and intensive care medicine.

Extravascular lung water remains a useful guide for monitoring pulmonary oedema and vascular permeability in sepsis, acute respiratory distress syndrome and heart failure. Mikhail Kirov, Vsevolod Kuzkov and Lars Bjertnaes highlight the present clinical rationale for extravascular lung measurement as a key to personalisation of haemodynamic therapy.

Innovation is all about new initiatives and advanced strategies in the ICU. Claire Irwin and Sharon Parkinson discuss the Sleep Guardians, a new quality improvement initiative implemented by the Lancashire and South Cumbria Critical Care Network (LSCCCN). The role of the sleep guardian is to promote protective sleep throughout the night for patients in critical care and to ensure that all invasive nursing or medical interventions are performed before lights go out.

We also discuss another initiative - the acute kidney injury service launched at the Lancashire Teaching Hospitals NHS Foundation Trust. The goal of this initiative is to utilise the expertise and clinical knowledge of an established team of senior nurses familiar with assessing, planning, implementing and escalating the care of patients with an acute kidney injury.

In our Management section, Sethina Watson talks about communication myths of anaesthetists followed by Vishal Bakshi who discusses the role of the Physician Assistant in critical care and how they can play a leading role in the safe, efficient, value-based delivery of healthcare for the critically ill patient.

Susan East, a patient speaker at The American Thoracic Society International Conference in Washington DC, talks about one of the most burning issues in healthcare - humanising care. East, a three times ARDS survivor shares her experience as an ICU patient and highlights the need to humanise the ICU.

Our interview section features Bernd Saugel, Professor of Anesthesiology and Consultant in the Department of Anesthesiology, Center of Anesthesiology and Intensive Care Medicine, University Medical Center Hamburg-Eppendorf. Prof. Saugel is a specialist in anaesthesiology, intensive care medicine, and internal medicine. His primary field of research is the haemodynamic management of high-risk patients having surgery and critically ill patients. Prof. Saugel talks to ICU Management & Practice about future technologies and how the use of ultra-small and highly sensitive sensors can make monitoring systems wearable and wireless and how that can allow integrated monitoring.

Innovation is the key to improving patient outcomes and patient satisfaction. Embracing technology and implementing new and advanced initiatives can pave the way for the new ICU. ■

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

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