In the first issue of 2022, as we hope that the declining Omicron variant effect and booster vaccination attenuate intensive care services demand, *CCR* returns to recurrent issues in the management of critically ill patients. First, a report on the evolving management of refractory out-of-hospital cardiac arrest¹ raises the unresolved problem of how best to improve the system of care of such patients and whether the wider and faster application of extracorporeal membrane oxygenation (ECMO) assisted cardiopulmonary resuscitation (ECPR) is justified. As highlighted in the associated editorial,² the issue remains controversial and screams out for a randomised controlled trial of early ECMO in such patients. One can only hope that the next few years will see a concerted effort in Australia and New Zealand in such direction. Another unresolved issue pertains to severe metabolic acidosis in critically ill patients with focus on Indigenous populations.³ A similar focus on high risk First Nations patients comes from an assessment of outcomes of Indigenous patients enrolled in the ADRENAL trial.⁴

Mortality remains high and trials of intravenous bicarbonate are warranted. In this regard, pilot work is underway. Magnesium is a frequent therapy in critically ill patients and continuous magnesium infusion may be an option to decrease the incidence and severity of atrial fibrillation in the intensive care unit (ICU); however, the feasibility of such continuous therapy is uncertain. An article by Chan and colleagues⁵ shows the safety and feasibility of such magnesium infusion in vasopressor-dependent, ventilated patients to achieve moderate hypermagnesaemia and provides the background for future trials. How should we monitor patients with severe traumatic brain injury in the ICU in 2022? Can we use computer-assisted interpretation of data to improve the care of such patients? McNamara and colleagues⁶ make a strong case that such technology is now ready for prime time and present the logic for what is now an ongoing multicentre investigation. Plasma exchange is a complex and invasive procedure which is occasionally applied in the ICU. However, there is limited knowledge on the complications associated with its performance in the ICU setting. Chavda et al⁷ provide useful information on the predictors of such complications, which can be used

to make this therapy safer. Another way to make patients safer may relate to the environment of the ICU itself. Liu and colleagues⁸ report on the microbiological isolates effect of moving an ICU to a brand new environment with single rooms and separation of patients. Their work provides support for the importance of the physical structure is modulating the risk of infection and/or colonisation. The debate surrounding the preferential use of high flow humidified oxygen therapy versus non-invasive ventilation continues. Maia et al⁹ report the protocol and statistical analysis plan of the RENOVATE trial, which is currently taking place in Brazil. This study is likely to provide world-class evidence to help clinicians with their decision making. What is the role and evidence for the use of ketamine in ICU patients? In this issue of *CCR*, Casamento and colleagues¹⁰ address the limitations and knowledge gaps that surround the use of this agent and make the case for the conduct of trials, with particular focus on low dose analgesedation adjuvant therapy. Many clinicians have remained uncertain about the role of venovenous ECMO in patients with coronavirus disease 2019 (COVID-19). In their article, Burrell and colleagues¹¹ compared the long term outcome of 13 patients with Alpha COVID-19 treated with ECMO versus 23 patients also treated with ECMO for non-COVID-19 viral pneumonitis. They found much longer duration of ventilation, ICU stay, and hospital stay with COVID-19 but lower mortality (25% v 38%) and similar disability and health-related quality of life at 6 months. Whether such findings also apply to Delta COVID-19 will be of great interest in future analyses. Finally, and of great interest to College Fellows, this issue of *CCR* hosts an important exchange of views on the clinical exam (the so called “hot cases”) and how it can be improved.^{12,13} Such exchange would reassure current and would-be fellows that the College remains committed to the highest standards of training and assessment and to a continuing improvement approach to such goals.

Rinaldo Bellomo

Editor-in-Chief *Critical Care and Resuscitation*

doi: <https://doi.org/10.51893/2022.1.ITI>

References

- 1 Bernard SA, Hopkins SJ, Ball JC, et al. Outcomes of patients with refractory out-of-hospital cardiac arrest transported to an ECMO centre compared with transport to non-ECMO centres. *Crit Care Resusc* 2022; 24: 7-13.
- 2 Fisher CM. Out-of-hospital cardiac arrest: stay and play or scoop and run (to an ECMO centre). *Crit Care Resusc* 2022; 24: 5-6.
- 3 Serpa Neto A, Fujii T, Moore J, et al. Clinical outcomes of Indigenous Australians and New Zealand Māori with metabolic acidosis and acidaemia. *Crit Care Resusc* 2022; 24: 14-9.
- 4 Donaldson LH, Hammond NE, Agarwal S, et al. Outcomes following severe septic shock in a cohort of Aboriginal and Torres Strait Islander people: a nested cohort study from the ADRENAL trial. *Crit Care Resusc* 2022; 24: 20-8.
- 5 Chan JW, Yanase F, See E, et al. A pilot study of the pharmacokinetics of continuous magnesium infusion in critically ill patients. *Crit Care Resusc* 2022; 24: 29-38.
- 6 McNamara R, Meka S, Anstey J, et al. The Monitoring with Advanced Sensors, Transmission and E-Resuscitation in Traumatic Brain Injury (MASTER-TBI) collaborative: bringing

- data science to the ICU bedside. *Crit Care Resusc* 2022; 24: 39-42.
- 7 Chavda MP, Patel A, Bihari S. Membrane-based therapeutic plasma exchange in tertiary care ICU: demographic characteristics and predictors of complications. *Crit Care Resusc* 2022; 24:43-9.
- 8 Liu AJ, Wells A, Presneill J, Marshall C. Common microbial isolates in an adult intensive care unit before and after its relocation and expansion. *Crit Care Resusc* 2022; 24: 50-60.
- 9 Maia IS, Kawano-Dourado L, Zampieri FG, et al. High flow nasal catheter therapy versus non-invasive positive pressure ventilation in acute respiratory failure (RENOVATE trial): protocol and statistical analysis plan. *Crit Care Resusc* 2022; 24: 61-70.
- 10 Casamento A, Niccol T. Efficacy and safety of ketamine in mechanically ventilated intensive care unit patients: a scoping review. *Crit Care Resusc* 2022; 24: 71-82.
- 11 Burrell AJC, Serpa Neto A, Udy A, et al. Six-month outcomes following venovenous ECMO for severe COVID-19 and viral pneumonitis: 2019–2020 Australian experience. *Crit Care Resusc* 2022; 24: 83-6.
- 12 Hoffman KR, Nickson CP, Ryan AT, Lane S. Too hot to handle? Assessing the validity and reliability of the College of Intensive Care Medicine “Hot Case” examination. *Crit Care Resusc* 2022; 24: 87-92.
- 13 Cohen J, Pinder M, Angelico D, Keo F. Too hot to handle? Assessing the validity and reliability of the College of Intensive Care Medicine “Hot Case” examination [letter]. *Crit Care Resusc* 2022; 24: 93-4.