

Outcomes for patients with COVID-19 admitted to Australian intensive care units during the first four months of the pandemic

TO THE EDITOR: Burrell and colleagues captured data from 77 hospitals containing 91% ($n = 204$) of coronavirus disease 2019 (COVID-19) intensive care unit (ICU) cases during the first four months of the pandemic.¹ Overall mortality ($n = 30$, 15%) for mechanically ventilated and non-ventilated patients in this study was lower than other published data. In contrast, overseas reports have indicated mortality rates for patients with COVID-19 admitted to ICUs of 40%, 44%, 60% and 70% in the United Kingdom, China, Italy and the United States, respectively.² Evidence indicates that within developed countries, mortality rates associated with COVID-19 vary according to physiological parameters but also markedly according to location.³ Low ICU bed occupancy and the distribution of cases across a large number of institutions¹ has positively influenced Australian COVID-19 mortality rates.

Less obvious is the role and effect of critical care nurses. ICU nurse to patient ratios in Australian units were 1:1 and 2:1 for 77.8% and 7.5% of ICU days, respectively.¹ Mortality is affected by local practice³ and in countries where

ratios of 1:6 or more are common,² mortality rates in ventilated patients can exceed 80%.⁴ Globally, point-of-care pandemic practice in ICUs has involved fewer critical care nurses, variously supported by redeployed nurses without critical care qualifications or experience.

Critical care nurse expertise augments pre-emptive rather than reactive strategies for ICU patient management. In the study by Burrell and colleagues, invasive ventilation was instituted for 119 (58%) patients: 79 (66%) of these on day 1, increasing to 94/113 (83%) by the end of week 1.¹ Eighty-five (42%) patients were able to be supported with either non-invasive ventilation, high flow oxygen therapy or supplemental oxygen, monitored and managed by critical care nurses. Within an ICU model of care, critical care nurse staffing levels, skills mix, advanced practice functions and level of education ensure the high quality and safety of care delivery. Australian critical care nurses are expert clinicians with advanced education, training and experience who directly influence patient outcomes at the micro (patient and family), meso (unit or organisation) and macro (policy) level.⁵ Clearly elucidating workforce issues and composition is critically important for documenting models of care and associated outcomes in critical care.

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- 1 Burrell AJC, Pellegrini B, Salimi F, et al. Outcomes for patients with COVID-19 admitted to Australian intensive care units during the first four months of the pandemic. *Med J Aust* 2021; 214: 23–30; erratum, 483. <https://www.mja.com.au/journal/2021/214/1/outcomes-patients-covid-19-admitted-australian-intensive-care-units-during-first>
- 2 Le Grande C, Dow A. Best doctors and nurses: Australia leads world in COVID-19 ICU survival rates. *The Age* (Melbourne) 2020; 14 July. https://www.theage.com.au/national/best-doctors-and-nurses-australia-leads-world-in-covid-19-icu-survival-rates-20200714-p55byq.html?fbclid=IwAR2MuVLj9lePJSK-i5lenYebfyCB1hf1MTyaT5d2fANr_TKx-TWmRDDMG8k (viewed May 2021).
- 3 Phua J, Weng L, Ling L, et al. Intensive care management of coronavirus disease 2019 (COVID-19): challenges and recommendations. *Lancet Respir Med* 2020; 8: 506–517.
- 4 Richardson S, Hirsch JS, Narasimhan M, et al. Presenting characteristics, comorbidities, and outcomes among 5700 patients hospitalized with COVID-19 in the New York City area. *JAMA* 2020; 323: 2052–2059.
- 5 Chamberlain D, Pollock W, Fulbrook P, et al. ACCCN workforce standards for intensive care nursing: systematic and evidence review, development, and appraisal. *Aust Crit Care* 2018; 31: 292–302. ■