Frailty and mortality in patients with COVID-19

We read with interest the study by Jonathan Hewitt and colleagues,[1] investigating the association of frailty with mortality in 1564 patients diagnosed with COVID-19. We are interested in how treatment varied between patients in different frailty categories. Although the outcomes were adjusted for baseline patient factors, including age and comorbidities, we note that neither illness severity nor important process measures after admission to hospital, such as intensive care unit admission or mechanical ventilation, were reported. Without these data, it is hard to say to what degree frailty per se is intrinsically associated with increased mortality in COVID-19, or whether the reported mortality is perhaps related to the combination of a more severe illness and less intensive treatment type offered to patients with advanced frailty, consistent with the guidance from the National Institute for Health and Care Excellence and earlier work, which show greater treatment limitations in older, frail cohorts.[2,3]

The latest intensive care national audit & research centre report (published on June 19, 2020), incorporating 9949 critically ill UK patients with COVID-19, reports a median patient age of 60 years (*vs* 74 years in Hewitt and colleagues' cohort), with 90% of patients fully independent ("able to live without assistance in daily activities") before hospitalisation.[4] These numbers compare with 40% of this study's cohort being classified as having a Clinical Frailty Scale score of 6 or more (at least moderately frail); by definition requiring considerable assistance with daily activities.[5] Hewitt and colleagues'[1] study cohort, then, is not typical of the COVID-19 population being managed in UK intensive care units. Without more detail on how patients in this study were treated, and what effect this had on mortality, we are concerned that the statement "these findings support the use of frailty as a trigger for specialist resource allocation" is not supported by the data presented.

KR reports personal fees from Clinical Cardio Day-Cape Breton University, Centre de Recherche de l'Institut Universitaire de Gériatrie de Montréal, Jackson Lab (Bar Harbor, MA, USA), MouseAge (Rome, Italy), Lundbeck, Frontemporal Dementia Study Group, and SunLife Insurance (Japan); and is the President and Chief Science Officer of DGI Clinical, which in the last 5 years has contracts with pharmaceutical and device manufacturers (Baxter, Baxalta, Shire, Hollister, Nutricia, Roche, and Otsuka) on individualised outcome measurement; attended an advisory board meeting with Lundbeck in 2017; is the Associate Director of the Canadian Consortium on Neurodegeneration in Aging, which is funded by the Canadian Institutes of Health Research, and with additional funding from the Alzheimer Society of Canada and several other charities, as well as, in its first phase (2013-2018), from Pfizer Canada and Sanofi Canada; receives career support from the Dalhousie Medical Research Foundation as the Kathryn Allen Weldon Professor of Alzheimer Research, and research support from the Canadian Institutes of Health Research, the QEII Health Science Centre Foundation, the Capital Health Research Fund and the Fountain Family Innovation Fund of the QEII Health Science Centre Foundation. All other authors declare no competing interests.

Jai N Darvall, Rinaldo Bellomo, Paul J Young, Kenneth Rockwood, David Pilcher
jai.darvall@mh.org.au

Department of Intensive Care, Royal Melbourne Hospital, Melbourne, VIC 3050, Australia (JND, RB); Centre for Integrated Critical Care, The University of Melbourne, Melbourne, VIC, Australia (JND, RB); Australian and New Zealand Intensive Care Research Centre, Department of Epidemiology and Preventive Medicine, Monash University, Melbourne, VIC, Australia (RB, DP); Data Analytics Research & Evaluation Centre, The University of Melbourne and Austin Hospital, Melbourne, VIC, Australia (RB); Medical Research Institute of New Zealand, Wellington, New Zealand (PJY); Divisions of Geriatric Medicine & Neurology, and the Geriatric Medicine Research Unit, Division of Geriatric Medicine, Department of Medicine, Dalhousie University and Nova Scotia Health Authority, Nova Scotia, Canada (KR); Department of Intensive Care, Alfred Hospital, Melbourne, VIC, Australia (DP); and Centre for Outcome and Resource Evaluation, Australian and New Zealand Intensive Care Society, Melbourne, VIC, Australia (DP)

1 Hewitt J, Carter B, Vilches-Moraga A, et al. The effect of frailty on survival in patients with COVID-19 (COPE): a multicentre, European, observational cohort study. *Lancet Public Health* 2020; **5:** e444–51.

2 National Institute for Health and Care Excellence. COVID-19 rapid guideline: critical care in adults. NICE guideline [NG159]. March 20, 2020. https://www.nice.org.uk/guidance/ng159 (accessed March 29, 2020).

3 Darvall JN, Bellomo R, Paul E, et al. Frailty in very old critically ill patients in Australia and New Zealand: a population-based cohort study. *Med J Aust* 2019; **211:** 318–23.

4 Intensive care national audit & research centre. ICNARC report on COVID-19 in critical care. June 19, 2020. https://www.icnarc.org/DataServices/Attachments/Download/da19fd54–70b2-ea11–9127–00505601089b (accessed July 3, 2020).

5 Rockwood K, Song X, MacKnight C, et al. A global clinical measure of fitness and frailty in elderly people. *CMAJ* 2005; **173:** 489–95.