Critical care survival rates in COVID-19 patients improved as the first wave of the pandemic developed

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Meghan L Bateson, Joanne M McPeake

1School of Health and Life Sciences, University of the West of Scotland, Paisley, UK, 2School of Medicine, Dentistry and Nursing, University of Glasgow, Glasgow, UK

Correspondence to: Meghan L Bateson, School of Health and Life Sciences, University of the West of Scotland, Blantyre, Renfrewshire, UK; meghan.bateson@uws.ac.uk


Implications for practice and research
► It is essential that clinicians understand the evolving outcomes of patients admitted to hospital with COVID-19 in order to improve services and undertake further, targeted research.
► In parallel with research evaluating the treatment of COVID-19, future research must address the impact of care delivery and organisation on patient-centred outcomes.

Context
During the first 12 months of the COVID-19 pandemic affected more than 87 million individuals worldwide and caused almost 2 million deaths. Over the course of the first wave of the pandemic, UK national data suggested that there may be an improvement in survival for those patients admitted to hospital with COVID-19. However, measurement issues such as increased testing capacity, and changes in patient-level characteristics such as age and pre-existing comorbidities, may account for this observation. The aim of this cohort study was to establish trends in 30-day mortality among critically ill patients with suspected or confirmed COVID-19 over 4 months (March–June 2020) and evaluate if patient-level characteristics contributed to the outcomes noted.

Methods
Data were obtained from the COVID-19 Hospitalisation in England Surveillance System (CHESS), which collects data on patients with COVID-19 admitted to critical care. At the time of this study, 108 English National Health Service trusts had submitted data to CHESS. Unadjusted 30-day mortality rates were calculated separately for high-dependency unit (HDU) and intensive care unit (ICU) patients by week of admission over the 4-month analysis period. The effect of age, gender, comorbidities, ethnicity and hospital region on trends in mortality was also reported.

Findings
The study included 21 082 critical care patients of which, 15 367 received care in a HDU and 5 715 in an ICU. The number of patients admitted to critical care with COVID-19 rose sharply over the 4 weeks from 8 March to 5th April 2020. The unadjusted 30-day mortality of people with COVID-19 requiring critical care peaked in March 2020 with an HDU mortality of 28.4% and ICU mortality of 42.0%. Survival subsequently improved with unadjusted 30-day mortality dropping to 7.3% in HDU and 19.6% in ICU patients by the end of the analysis cycle. The improvement in survival was found to be unaffected by age, sex, ethnicity or comorbidity.