

Clinical, Organisational Factors and COVID-19 Mortality



Coronavirus disease 2019 (COVID-19) is one of the most significant challenges faced by critical care workers worldwide. During the COVID-19 pandemic, an unprecedented number of patients with COVID-19 associated pneumonia were admitted to the ICU. As a result, most healthcare facilities faced capacity issues and had to designate clinical areas to accommodate these patients and provide them with the necessary critical care. Unfortunately, despite the support provided, mortality remains high, particularly in ventilated patients.

In the ESICM UNITE-COVID, a multicentre, international, point-prevalence study, the researchers discuss the global burden of COVID-19 admissions and examine the association between clinical and organisational characteristics and outcomes in critically ill COVID-19 patients. The study included 4994 patients from 280 ICUs in 46 countries (Europe 60%, Asia 22%, South America 6%, North America 6%, and Africa 6%) with a confirmed SARS-CoV-2 infection admitted to the ICU between February and May 2020.

The ICUs included in the study all had to increase their capacity from 4931 beds to 7630 and had to deploy healthcare staff from other areas. The number of patients per ICU nurse increased from 2.0 to 2.4 (during the pandemic surge; the number of intensivists available for clinical care increased from 4.5 to 5.4, and the number of residents providing clinical care increased from 4.3 to 6.2. Non-ICU nurses and physicians were employed in 85% and 58% of the ICUs, respectively.

One thousand nine hundred eighty-six patients were admitted to surge capacity beds. Invasive ventilation at admission was used in 46.5% of the patients and was required during ICU admission in 85.8% of the patients. 84.7% of the patients were sedated during their stay for a median of 14 days. Vasoactive drugs were used in 75.4% for a median of 8 days, and renal replacement therapy (RRT) was required in 24.3% of the patients. Extracorporeal membrane oxygenation (ECMO) was used in 4.5% of patients for 17 days.

The 60-day mortality was 33.9%, and the ICU mortality was 32.7%. The primary factors associated with poor patient outcomes were old age, invasive mechanical ventilation and acute kidney injury. The same associations were confirmed in mechanically ventilated patients. The researchers report that admission to surge capacity beds was not associated with mortality.

Overall, these findings show that while many ICUs had to increase bed availability and staff to manage the patient surge during COVID-19, admission to a surge bed was not associated with increased mortality.

Source: [Intensive Care Medicine](#)

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