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## Impact of Multimorbidity on Long-Term Outcomes After ICU Discharge



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Critical care admissions continue to increase year after year. There is also increasing evidence that demonstrates discharge from critical care as the start of a challenging process for both patients and caregivers, with many survivors going through physical, social, cognitive, and emotional problems in the years following discharge.

It is clinically proven that people who survive critical illness usually have poor long-term outcomes, and their use of healthcare services also increases. In particular, patients diagnosed with sepsis and those with pre-critical care physical health issues are at greater risk of poor outcomes. However, there is still little data about the interplay between multimorbidity and long-term outcomes.

In this study, researchers investigate how baseline patient demographics impact mortality and healthcare utilisation in the year following discharge from critical care. They use data from the UK Biobank to answer three key questions. First, do critical care patients have a different mortality rate or readmission risk use than hospitalised patients who do not need critical care? Second, what are the main causes of death in the post-critical period? And finally, what is the interplay between mental and social health issues and utilisation of healthcare services following critical care?

The analysis included 3112 patients. Two cohorts were created. The primary cohort included patients with a critical care admission, while the second cohort was a group of hospitalised patients with similar baseline characteristics but not admitted to critical care. Several comorbidities were included in the analysis, such as, depression, dementia, diabetes, obesity, alcohol abuse, CHF, drug abuse, and psychoses, among others. The primary outcome was mortality during follow-up.

As per the results of the analysis, hospital mortality in the critical care group was 14.8% vs 3.3% in the hospital cohort. Mortality for the critical care group at 30 days post-discharge was 15.9% vs 4.5% in the hospital cohort. At one year, mortality was 19.7% in the critical care group and 8.5% in the hospital group. At three years, this figure was 25.8% vs 13.1%. After adjustment, there was no difference in longer-term mortality between the critical care and hospital cohort across the follow-up period.

Emergency admissions, increased age, longer hospital length stay and being male increased long-term mortality. It was observed that pre-hospitalisation emotional health issues such as depression were associated with increased long-term mortality; comorbidities such as renal disease and liver disease were also associated with increased mortality. Smoking had a significant impact on survival. Mortality was more than double in patients with two or more comorbidities compared to those without any.

The rate of hospital readmission was 30% higher in the critical care cohort compared to the hospital cohort. Critical care patients experienced a 29% increased risk of hospital admission than the hospital cohort, and their healthcare utilisation was higher in the year following discharge.

Overall, these findings show increased resource use for critical care survivors in the year following discharge. However, the researchers were unable to replicate past findings of increased longer-term mortality. Multimorbidity, lifestyle factors and socioeconomic status were found to influence long-term outcomes in critical care survivors.

Source: [CHEST](#)

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