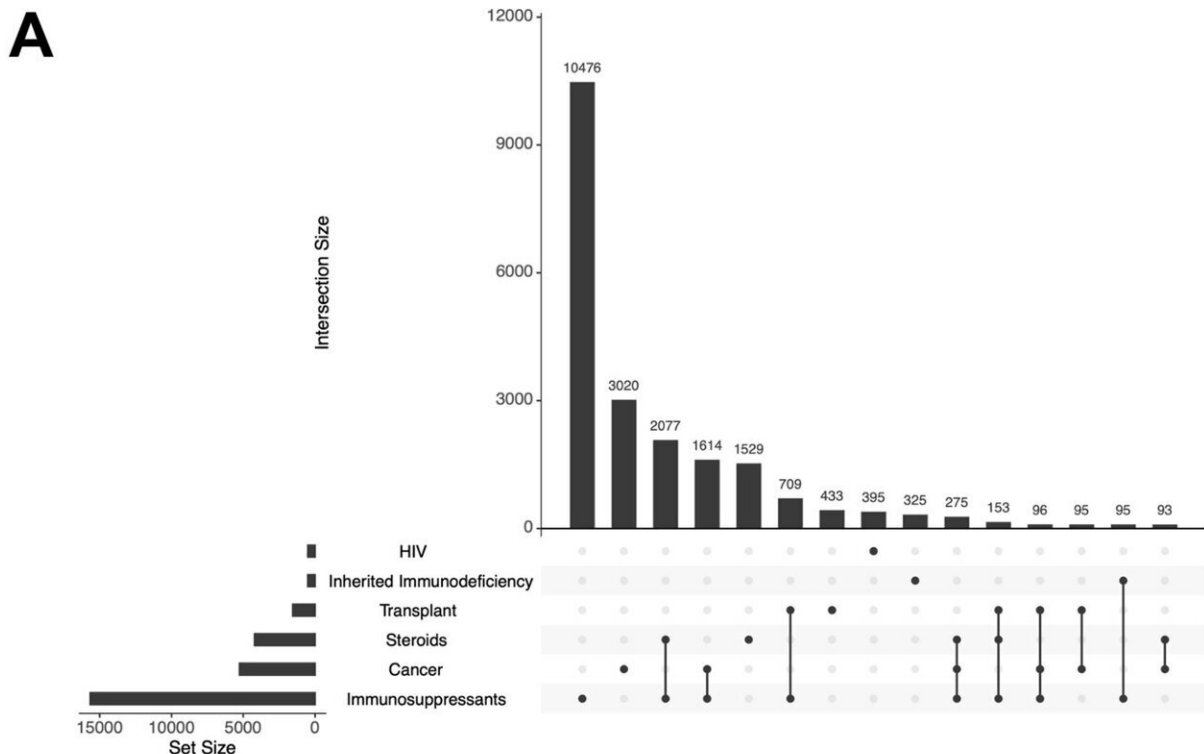


# Immunocompromised patients remain at higher risk of COVID-19 death in hospital

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**B**

Overlap between conditions giving rise to immunocompromise and illness severity. (A) Overlap between immunocompromising conditions for all combinations where there are 20 patients or greater. (B) Illness severity over the course of the pandemic, measured using the 4C Mortality Score by immune status and pandemic wave. Pink bars: immunocompetent, green bars: immunocompromised. (C) Physiological components of the 4C Mortality Score stratified by immune status and pandemic wave. Credit: *PLOS Medicine* (2023). DOI: 10.1371/journal.pmed.1004086

People with weakened immune systems remain more likely to die if hospitalized with COVID-19 than patients with normal immune systems, a new UK study has confirmed.

Previous studies have compared in-hospital mortality among [immunocompromised patients](#) with other COVID-19 [patient groups](#) with conflicting results. Some studies reported increased mortality, whereas others found no difference from other patient groups.

Using data from the world's largest study of hospitalized patients with the disease, a team of researchers from the University of Liverpool, University of Edinburgh, Imperial College London and University of Birmingham aimed to determine whether immunocompromised patients were at greater risk of in-hospital death, and how this risk changed over the pandemic.

The study analyzed data from more than 150,000 adult UK patients who were recruited to the ISARIC WHO Clinical Characterization Protocol UK prospective cohort study between January 2020 and February 2022.

The team's analysis showed that immunocompromised patients overall had a 44% higher risk of death in hospital than patients with normal immune systems. This difference remained even accounting for other important factors such as age, sex and the presence of other chronic medical conditions.

Over the course of the pandemic, although the risk of death for all patients decreased, the researchers found that risk decreased much more for immunocompetent patients and the gap widened for immunocompromised patients.

First author Dr. Lance Turtle, a Reader in Infectious Diseases at the University of Liverpool, said, "There is a general assumption that COVID is no longer a big problem. However, what we have shown here is that for patients who have a weakened immune system, perhaps because of [cancer treatment](#), or other [medical treatments](#), this is not true. COVID still poses a substantial risk to this group of patients, compared with patients with a normal immune system. This difference can still be seen even after the threshold of illness for admission to hospital is reached."

Despite the benefits of vaccination, immunocompromised patients still lag behind the general patient population in the improvements in outcomes after hospitalization. The authors urge [policy makers](#) to be aware of the increased risk of death in this patient group and say targeted interventions such as antiviral treatments, antibodies, and non-pharmaceutical interventions should continue to be used in this patient group.

The study is published in the journal *PLOS Medicine*.

**More information:** Lance Turtle et al, Outcome of COVID-19 in hospitalised immunocompromised patients: An analysis of the WHO ISARIC CCP-UK prospective cohort study, *PLOS Medicine* (2023). [DOI: 10.1371/journal.pmed.1004086](https://doi.org/10.1371/journal.pmed.1004086)

Provided by University of Liverpool

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