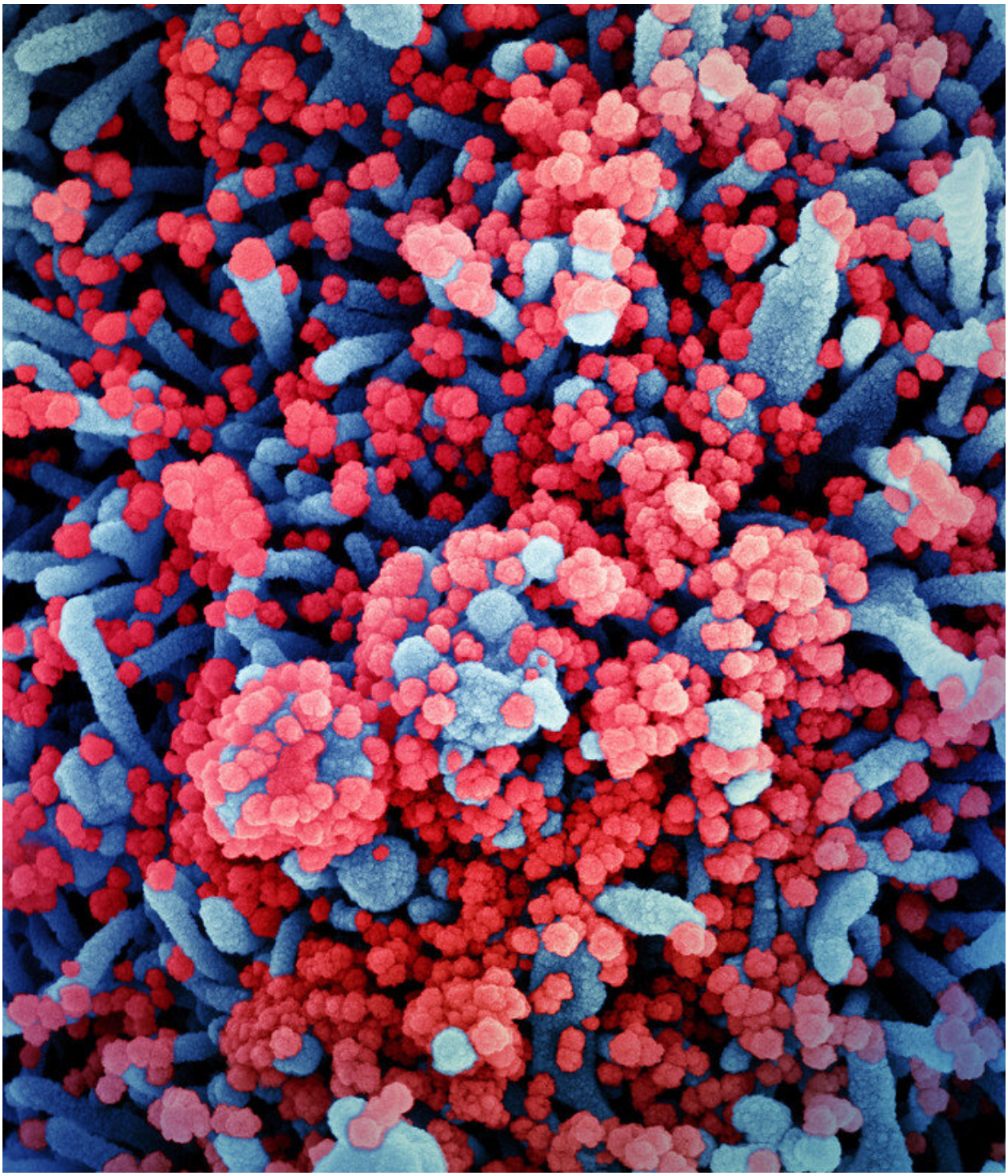
COVID-19 mixed with flu increases risk of severe illness and death

March 26 2022



Colorized scanning electron micrograph of a cell (blue) heavily infected with SARS-CoV-2 virus particles (red), isolated from a patient sample. Image captured at the NIAID Integrated Research Facility (IRF) in Fort Detrick, Maryland. Credit: NIAID

Adults in hospital who have COVID-19 and the flu at the same time are at much greater risk of severe disease and death compared with patients who have COVID-19 alone or with other viruses, research shows.

Patients with co-infection of SARS-CoV-2, which causes COVID-19, and influenza viruses were over four times more likely to require ventilation support and 2.4 times more likely to die than if they only had COVID-19, experts found.

Researchers say the findings show the need for greater flu testing of COVID-19 patients in hospital and highlight the importance of full vaccination against both COVID-19 and the flu.

The team from the University of Edinburgh, University of Liverpool, Leiden University and Imperial College London, made the findings in a study of more than 305,000 hospitalized patients with COVID-19.

The research—delivered as part of the International Severe Acute Respiratory and emerging Infection Consortium's (ISARIC) Coronavirus Clinical Characterisation Consortium—is the largest ever study of people with COVID-19 and other endemic respiratory viruses.

ISARIC's study was set up in 2013 in readiness for a pandemic such as this.

The team looked at the data of adults who had been hospitalized with COVID-19 in the UK between 6 February 2020 and 8 December 2021.

Test results for respiratory viral co-infections were recorded for 6965 patients with COVID-19. Some 227 of these also had the influenza virus, and they experienced significantly more severe outcomes.

Dr. Maaike Swets, Ph.D. student at the University of Edinburgh and Leiden University, said: "In the last two years we have frequently witnessed patients with COVID-19 become severely ill, at times leading to an ICU admission and the employment of an artificial ventilator to help with breathing. That an influenza infection could give rise to a similar situation was already known, but less was understood about the outcomes of a double infection of SARS-CoV-2 and other respiratory viruses."

Professor Kenneth Baillie, Professor of Experimental Medicine at the University of Edinburgh, said: "We found that the combination of COVID-19 and flu viruses is particularly dangerous. This will be important as many countries decrease the use of social distancing and containment measures. We expect that COVID-19 will circulate with flu, increasing the chance of co-infections. That is why we should change our testing strategy for COVID-19 patients in hospital and test for flu much more widely."

Professor Calum Semple, Professor of Outbreak Medicine and Child Health at the University of Liverpool, said: "We are seeing a rise in the usual seasonal respiratory viruses as people return to normal mixing. So, we can expect flu to be circulating alongside COVID-19 this winter. We were surprised that the risk of death more than doubled when people were infected by both flu and COVID-19 viruses. It is now very important that people get fully vaccinated and boosted against both viruses, and not leave it until it is too late."

Dr. Geert Groeneveld, doctor at Leiden University Medical Center's infectious diseases department, said: "Understanding the consequences of double infections of SARS-CoV-2 and other respiratory viruses is crucial as they have implications for patients, hospitals and ICU capacity during seasons that SARS-CoV-2 and influenza circulate together."

Professor Peter Openshaw, Professor of Experimental Medicine at Imperial College London, said: "Being infected with more than one virus is not very common but it's important to be aware that co-infections do happen. The vaccines that protect against COVID-19 and flu are different, and people need both. The way that these two infections are treated is also different so it's important to test for other viruses even when you have a diagnosis in someone who is hospitalized with a respiratory infection. This latest discovery by the ISARIC consortium again adds significantly to improving the way we manage patients."

The findings have been published in *The Lancet*.

Provided by University of Edinburgh