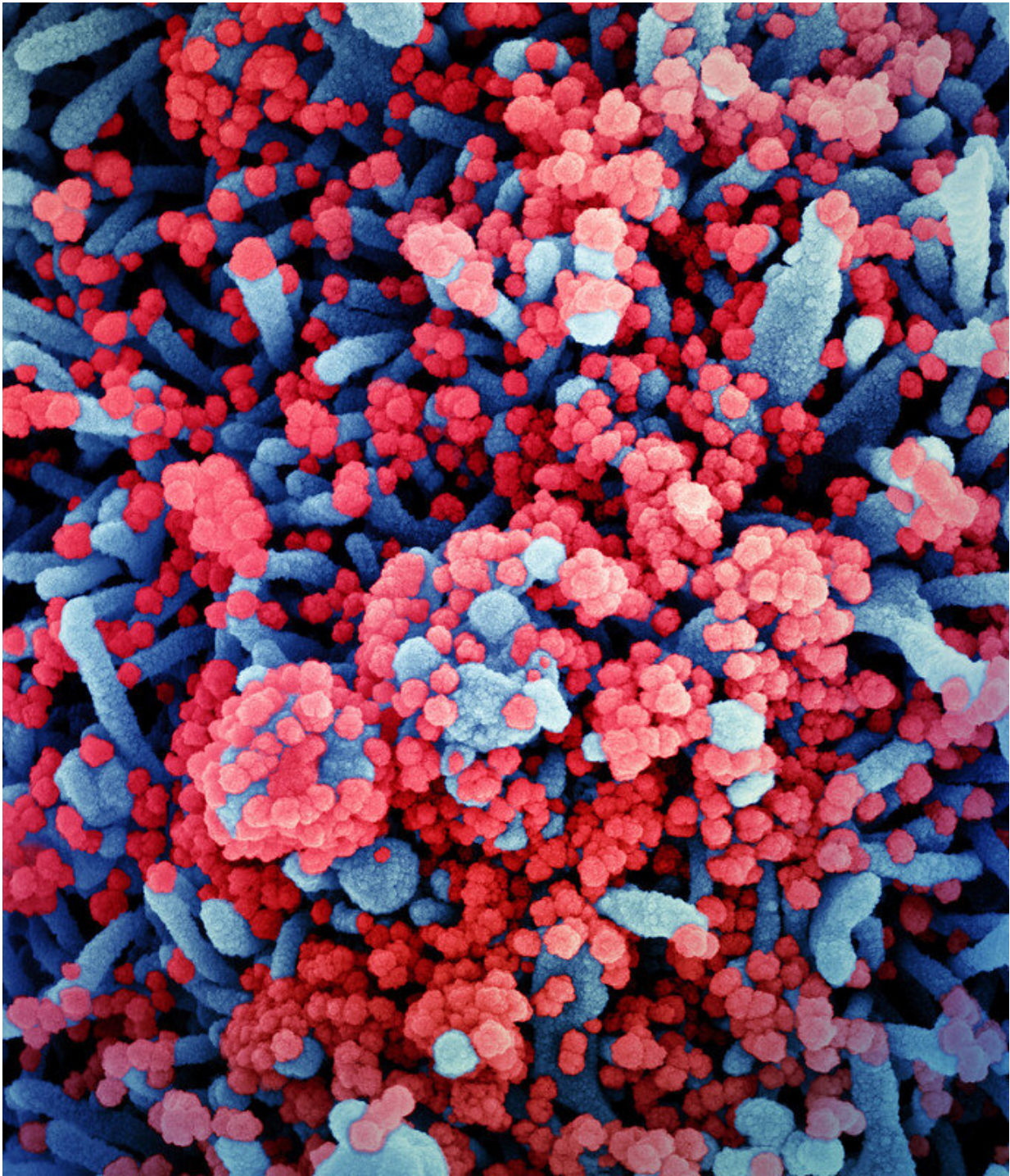


Large US study confirms COVID-19 complications: Lung, kidney and cardiovascular issues

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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

A large study of patients in the United States who contracted coronavirus disease 2019 (COVID-19) confirms many complications of the disease, according to new research in *CMAJ (Canadian Medical Association Journal)*.

"Understanding the full range of associated conditions can aid in prognosis, guide treatment decisions and better inform patients as to their actual risks for the variety of COVID-19 complications reported in the literature and media," writes Dr. William Murk, Jacobs School of Medicine & Biological Sciences, University at Buffalo, Buffalo, New York, with coauthors from Aetion, Inc., HealthVerity, Inc. and the University of Toronto.

Using de-identified outpatient and inpatient medical claims from a United States health database, researchers identified 70 288 patients who had a COVID-19-related health visit between March 1 and April 30, 2020. More than half of all patients were admitted to hospital, and approximately 5% were admitted to the intensive care unit. The median age was 65 years, and 55.8% were female. The authors looked at all possible diagnostic codes and identified those that increased in frequency after the onset of COVID-19.

The most common complications associated with COVID-19 were pneumonia, respiratory failure, [kidney failure](#), and sepsis or [systemic inflammation](#), consistent with other studies. The absolute risk of someone with COVID-19 having these serious conditions was 27.6% for pneumonia, 22.6% for [respiratory failure](#), 11.8% for kidney failure and 10.4% for sepsis or systemic inflammation.

The researchers also found associations with a range of other lung and cardiovascular conditions, such as collapsed lung, blood clotting

disorders and heart inflammation, although the risk of these was relatively low. Contrary to results of other studies, COVID-19 did not appear to be associated with a higher risk of stroke.

"This study provides estimates of absolute risk and relative odds for all identified diagnoses related to COVID-19, which are needed to help providers, patients and [policy-makers](#) understand the likelihood of complications," write the authors.

"Diagnosis-wide analysis of COVID-19 complications: an exposure-crossover study" is published December 8, 2020.

More information: William Murk et al. Diagnosis-wide analysis of COVID-19 complications: an exposure-crossover study, *Canadian Medical Association Journal* (2020). [DOI: 10.1503/cmaj.201686](https://doi.org/10.1503/cmaj.201686)

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