

Experimental AI Tool Predicts COVID-19 PATIENTS LIKELY TO DEVELOP RESPIRATORY DISEASE

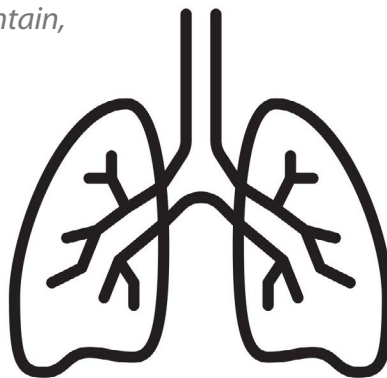
► **Trend Watch:** AI being used to track, contain, and understand coronavirus

An artificial intelligence tool accurately predicted which patients newly infected with the COVID-19 virus would go on to develop severe respiratory disease, according to a new study published in the journal *Computers, Materials & Continua*. The work was led by NYU Grossman School of Medicine and the Courant Institute of Mathematical Sciences at New York University, in partnership with Wenzhou Central Hospital and Cangnan People's Hospital, both in Wenzhou, China.

The study also revealed the best indicators of future severity and found that they were not as expected.

"While work remains to further validate our model, it holds promise as another tool to predict the patients most vulnerable to the virus, but only in support of physicians' hard-won clinical experience in treating viral infections," says corresponding study author Megan Coffee, M.D., Ph.D., clinical assistant professor in the Division of Infectious Disease & Immunology within the Department of Medicine at NYU Grossman School of Medicine.

"Our goal was to design and deploy a decision-support tool using AI capabilities — mostly predictive analytics — to flag future clinical coronavirus severity," says co-author Anasse Bari, Ph.D., a clinical assistant professor in Computer Science at the Courant Institute. "We hope that the tool,



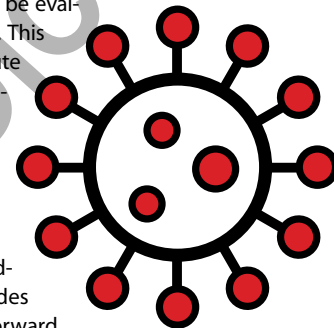
when fully developed, will be useful to physicians as they assess which moderately ill patients really need beds, and who can safely go home, with hospital resources stretched thin."

The new AI tool found that changes in three features — levels of the liver enzyme alanine aminotransferase (ALT), reported myalgia, and hemoglobin levels — were most accurately predictive of subsequent, severe disease. Together with other factors, the team reported being able to predict risk of Acute Respiratory Distress Syndrome with up to 80% accuracy.

Limitations of the study included the relatively small data set and the limited clinical severity of disease in the population studied. The latter may be due in part to an as yet unexplained dearth of elderly patients admitted into the hospitals during the study period. The average patient age was 43.

Partners HealthCare COVID-19 SCREENER

In response to coronavirus disease (COVID-19), Partners HealthCare created the COVID-19 Screener, an automated tool to help assess whether you should be evaluated for COVID-19. This tool is not a substitute for professional medical advice, diagnosis, or treatment. It is only for screening related to COVID-19.



The Partners Covid-19 Screener provides a simple, straightforward chat interface, presenting patients with a series of questions based on content from the U.S. Centers for Disease Control and Prevention (CDC) and Partners HealthCare experts. In this way, it can screen enormous numbers of people and rapidly differentiate between those who might really be sick with Covid-19 and those who are likely to be suffering from less threatening ailments. Development is now under way to facilitate triage of patients with symptoms to most appropriate care setting, including virtual urgent care, primary care providers, respiratory illness clinics, or the emergency department.

Using a similar screening tool developed with Microsoft, Providence St. Joseph Health system in Seattle was able to rapidly differentiate between those who might be sick with Covid-19 and those who might be suffering from less threatening ailments. In its first week of use, Providence's tool served more than 40,000 patients, delivering care at an unprecedented scale.

Beyond screening, artificial intelligence is being used to monitor COVID-19 symptoms, provide decision support for CT scans, and automate hospital operations.

Zhongnan Hospital in China uses an AI-driven CT scan interpreter that identifies Covid-19 when radiologists aren't available. China's Wuhan Wuchang Hospital established a smart field hospital staffed largely by robots. Patient vital signs were monitored using connected thermometers and bracelet-like devices. Intelligent robots delivered medicine and food to patients, alleviating physician exposure to the virus and easing the workload of healthcare workers experiencing exhaustion.

And in South Korea, the government released an app allowing users to self-report symptoms, alerting them if they leave a "quarantine zone" in order to curb the impact of "super-spreaders" who would otherwise go on to infect large populations. ^{PV}

Artificial Intelligence RESEARCH COLLABORATIVE TARGETS COVID-19



A new research consortium jointly managed by UC Berkeley and the University of Illinois at Urbana-Champaign (UIUC) is aiming to build artificial intelligence techniques that will help combat COVID-19. The new c3.ai Digital Transformation Institute (c3.ai DTI) is dedicated to accelerating AI development to speed the pace of digital transformation of business, government, and society. Members of the institute include C3.ai; Microsoft Corporation; UIUC; UC Berkeley; Princeton University; the University of Chicago; the Massachusetts Institute of Technology; and Carnegie Mellon University.

In its first call for research proposals, c3.ai DTI is inviting scholars, developers, and researchers to use AI to combat COVID-19 and advance the science for mitigating future pandemics. This is the first in what will be a series of bi-annual calls for digital transformation research proposals.

C3.ai DTI will focus its research on AI, machine learning, big data analytics, ethics, and public policy. The institute will support the development of new algorithms, data security, and cybersecurity techniques. In addition to the annual research awards, the institute will offer access to free Azure Cloud and C3 AI suite resources, awards for curriculum development, and grants to support published research.

C3.ai DTI will work to find AI solutions to the worldwide pandemic quickly, applying novel innovations to reduce the impact of the virus.

New eBook

Telehealth: The Past, Present and Future

Coming in June 2020

Telehealth: The Past, Present, and Future

is an electronic publication which provides an overview of:

- Relevant terminology
- Major players
- Categories of telemedicine
- HCP and patient perspectives
- Key factors in the evolution of telemedicine
- Impact of COVID-19
- Predictions for the future

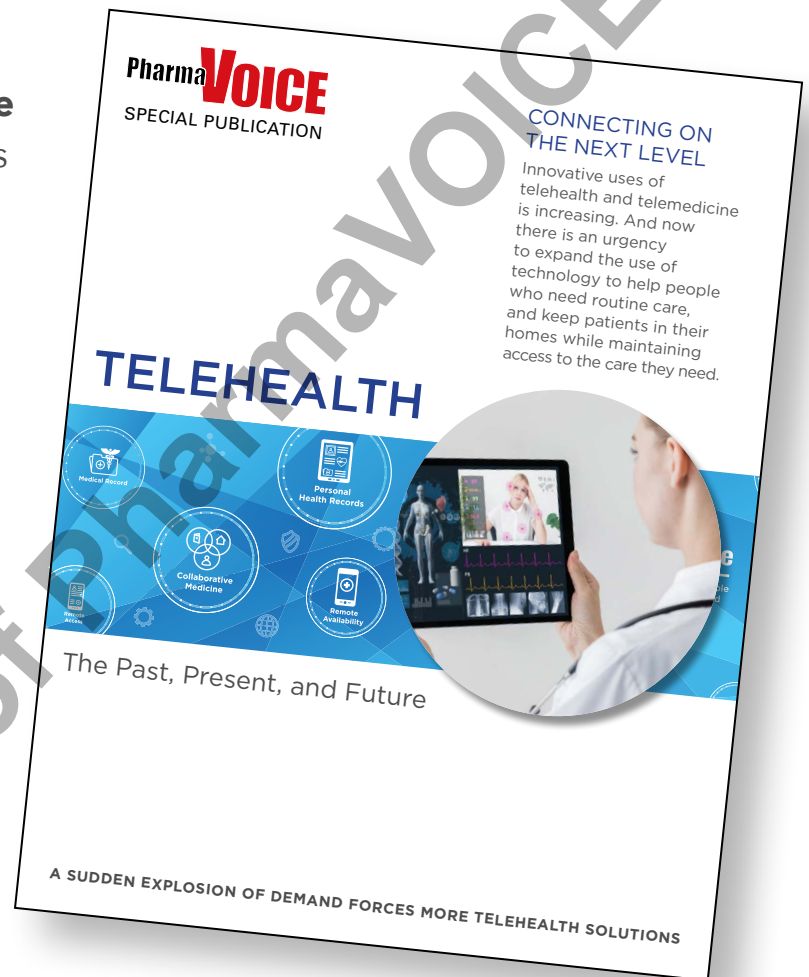
Telehealth is entering a new age.

This eBook will be released on June 10, 2020, in advance of the **Virtual DIA Annual Meeting**.

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