New tool helps predict outcomes for COVID-19

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A study published in the *American Journal of Emergency Medicine* this month reports on an assessment tool developed by Kaiser Permanente researchers and physicians that helps ensure patients get the right care, when they need it, by accurately predicting the probability that patients with COVID-19 symptoms will experience severe disease or even death.

"As the pandemic surges again across the country and hospitalizations are increasing, front-line physicians often must make quick decisions to hospitalize or discharge patients with COVID-19 symptoms," said Adam Sharp, MD, an emergency medicine physician who also is a researcher for the Kaiser Permanente Southern California Department of Research & Evaluation. "We created a risk assessment that looks at many different patient variables that might predict a critical poor outcome—without any lab or diagnostic testing."

The risk score is particularly helpful to physicians in making these decisions at the time of the emergency department visit, Dr. Sharp said.

The assessment tool, called the COVAS score because it looks at comorbidities, obesity, vital signs, age, and sex, has already been incorporated into the electronic health record system throughout Kaiser Permanente in Southern California, where it guides clinical decisions in emergency departments and urgent care centers. In this study, the COVAS score accurately predicted the probability of death or the need for critical respiratory care within 7 days for patients seen at Kaiser Permanente emergency departments in Southern California.

"I have used this tool successfully with my own patients in the emergency department and it helps provide necessary information to make informed decisions with patients," Dr. Sharp said. "It can help to reassure low-risk patients, and alternatively can encourage those at high risk to receive hospital-based care that may speed their recovery."

Researchers conducted a retrospective study of 26,600 emergency department visits by adults for symptoms suspicious for COVID-19 at 15 Kaiser Permanente hospitals in Southern California between March 1, 2020, to April 30, 2020, a period of time when substantial community spread of COVID-19 was prevalent in the region but immediate COVID-19 test results were not.

The results inform front-line health professionals and health systems about which patients with COVID-19 symptoms, which include fever, cough, difficulty breathing, and fatigue, are at greatest risk of death or respiratory decompensation that would require ventilation or high-flow oxygen.

Previous studies have focused on hospitalized patients, with little information about those treated outside of the inpatient setting. This work examines emergency department patients with suspected COVID-19 and provides helpful information to front-line physicians to inform care decisions, particularly during surges when hospital capacity can be limited.

Provided by Kaiser Permanente

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