

New tool helps clinicians assess patients who develop COVID-19 symptoms

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When patients arrive in emergency departments and hospitals with symptoms consistent with COVID-19, it's critical to isolate them to avoid the potential spread of infection, but keeping patients isolated longer than needed could delay patient care, take up hospital beds needed for other patients, and unnecessarily use up personal protective

equipment. A team led by investigators at Massachusetts General Hospital (MGH) has now created a tool to guide frontline clinicians through diagnostic evaluations of such patients so that they'll know when it's safe to discontinue precautions. The tool was developed and validated in a study published in *Clinical Infectious Diseases*.

In the spring of 2020, due to the risk of false-negative test results, the Infectious Diseases Society of America recommended repeating a COVID-19 test in [patients](#) with moderate to high probability of COVID-19; however, there was little guidance about what factors led to a patient being low or high probability. "So a team of infectious [disease](#) specialists at MGH worked around the clock to review admitted patients one by one to provide guidance about who needed additional testing and whose probability of COVID-19 was low enough that isolation could be discontinued," says Caitlin Dugdale, MD, an infectious disease physician at MGH and one of the study's co-first authors.

The effort led to the creation of a tool called the COVID Risk cALculator (CORAL), a clinical-decision support system embedded within the electronic health record. It was developed based on a rigorous review of the medical literature and the experience of a team of infectious disease specialists.

When using CORAL for a patient with symptoms of COVID-19, a clinician answers several questions about the patient's risk factors, symptoms and imaging findings, and is guided through a standardized COVID-19 diagnostic workup of the patient based on up-to-date guidelines.

"We designed the CORAL tool to be easy for frontline clinicians to use and also to help ensure patient and health care personnel safety," says Erica Shenoy, MD, Ph.D., an infectious diseases physician and infection control expert and co-senior author of the study, who has served as the

infection control clinical lead for Mass General Brigham's electronic health record for several years. "By standardizing the approach to the assessment of patients with symptoms of COVID-19, we minimize the chance that a patient with a false-negative test escapes detection, which could put other patients and health care personnel at risk of exposure."

In the study, CORAL dramatically reduced the time required by clinicians to assess patients, and it decreased the average time that hospitalized patients were kept in isolation during evaluation for COVID-19. Among 2,000 patients assessed with CORAL, none had a positive COVID-19 test within seven days after discontinuation of precautions via CORAL.

Since CORAL's launch in May 2020, it has been used more than 30,000 times and is now in place at eight acute care hospitals in the Boston area, as well as four rehabilitation hospitals. An outpatient version of CORAL was launched in October 2020 and is in use in hundreds of Mass General Brigham affiliated practices.

Importantly, CORAL can be rapidly adapted as new guidelines or research related to COVID-19 diagnostics emerge.

More information: Erica S Shenoy, MD, PhD, COVID-19 Diagnostic Clinical Decision Support: a Pre-Post Implementation Study of CORAL (COvid Risk cALculator), *Clinical Infectious Diseases*, 2021;, ciab111, doi.org/10.1093/cid/ciab111

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