

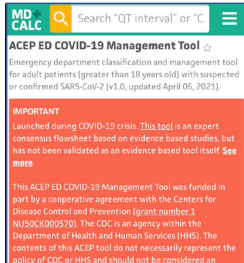


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ACEP ED COVID-19 Management Tool

The ACEP ED COVID-19 Management Tool is an emergency department classification and management tool for adult patients (aged ≥ 18 years) with suspected or confirmed SARS-CoV-2 (v1.0, updated April 6, 2021).

Click the thumbnail above to access the calculator.

■ About the Score

The American College of Emergency Physicians (ACEP) Emergency Department COVID-19 Management Tool is intended to guide severity classification, risk stratification, and diagnostic and management decisions in adult patients (aged ≥ 18 years) with suspected or confirmed SARS-CoV-2 (COVID-19) infection in the emergency department.

There is no need to apply this tool to patients who are not being evaluated for COVID-19. If the patient is considered to have mild disease, this tool may help avoid further testing.

This algorithm is not intended to be a substitute for clinicians' clinical judgement. The algorithm is not exhaustive in regard to diagnostic and treatment recommendations for patients with COVID-19 and COVID-like illness. Presenting symptoms or condi-

tions that may be manifestations of COVID-19 could also be manifestations of other serious disease (eg, myocardial infarction, pulmonary embolism, stroke), which may require additional specific diagnostic and therapeutic interventions not discussed in this tool.

Imaging, laboratory tests, treatment, and disposition should be considered based on disease severity and risk for disease progression. The United States Centers for Disease Control and Prevention (CDC) has [more information](#) on outcome risks associated with race, ethnicity, and access to health care resources. The *American Journal of Obstetrics and Gynecology* has published a [guideline](#) to assist with risk stratification of pregnant patients. The National Institutes of Health (NIH) maintains [recommendations](#) for appropriate diagnostic testing. [Recommendations](#) for respiratory support, intravenous fluids, and other interventions are also maintained by the NIH. Pharmacologic recommendations for patients with COVID-19 are evolving quickly; recommendations for pharmacologic management are maintained by the [NIH](#) and the [Infectious Diseases Society of America](#).

■ Evidence Appraisal

Step 1 - Severity Classification

The disease severity classification categories utilized by this tool (*mild, moderate, severe, critical*) are based on the classification categories adopted by the NIH COVID-19 Treatment Guidelines Panel, which were developed based on an early consensus of the literature describing the disease entity initially presenting in Wuhan, China, and subsequently identified as SARS-CoV-2.

Step 2 - Risk Prognostication

This section utilizes the PRIEST COVID-19 clinical severity score as a validated tool to predict a pa-

CALCULATOR REVIEW AUTHORS

Peter A. D. Steel, MA, MBBS

Department of Emergency Medicine, New York-Presbyterian/Weill Cornell Medical Center, New York, NY

Brian Fengler, MD

Department of Emergency Medicine, University of Tennessee Medical Center, Murfreesboro, TN

Christopher R. Carpenter, MD, MSc

Department of Emergency Medicine, Washington University School of Medicine in St. Louis, Saint Louis, MO

Stephen Cantrill, MD

Department of Emergency Medicine, Denver Health, Denver, CO

Sandy Schneider, MD

Department of Emergency Medicine, North Shore University Hospital, Manhasset, NY

patient's risk for end organ failure and/or mortality. The PRIEST study was a mixed prospective and retrospective observational cohort study undertaken in 70 emergency departments across the United Kingdom. A total of 22,445 patients were included; all were suspected to have COVID-19 and presented between March 26, 2020 and May 28, 2020. This tool was included because it did not require diagnostic testing (ie, laboratory tests, imaging) as part of the evaluation of the patient.

Step 3 - Risk Assessment

In this section, the user is asked if the patient has any additional risk factors that could increase the risk of severe disease, organ failure, and/or mortality. The CDC maintains consistently updated data on the outcome risks associated with race/ethnicity, socioeconomic status, and access to health care resources. Additional references (Bellou et al 2020; Ebinger et al 2020; Lokken et al 2021; Strausz et al 2021; Williamson et al 2020; Tartof et al 2020) are provided to summarize evidence for other risk factors.

Step 4 - Diagnostic Testing

This section follows the NIH guidelines for testing recommendations. Recommendations within this section will be updated as the NIH updates its guidelines. Evidence for exertional O₂ measurement is included from additional references (Greenhalgh et al 2020; Goodacre et al 2020; Paglia et al 2020).

Step 5 - Diagnostic Interpretation

Laboratory values that have been associated with risk of disease progression, severe disease, and/or mortality are included in this section. Abnormal value cutoffs were heterogenous across the studies, so the working group determined the most pragmatic values to display within this summary tool. The following references were included: Bellou et al (2020), Guan et al (2021), Hahm et al (2021), and Payán-Pernía et al (2020). Clinicians are advised in this section to check with their own facility's laboratory to determine the abnormal cutoff values that are used there.

Step 6 - Disposition

This section presents an approach to disposition of the patient based on severity classification. Most of the section was developed by consensus among the working group. Supplemental evidence was included

from Banerjee et al (2021), patient educational materials produced by the CDC (<https://www.cdc.gov/coronavirus/2019-ncov/if-you-are-sick/index.html>), and resources for patients from JAMA (eg, <https://jamanetwork.com/journals/jamapediatrics/fullarticle/2763176>).

Step 7a - Nonpharmacologic Treatment

This section cites 8 references that include recommendations for nonpharmacologic treatment of respiratory infections in general (eg, Patchett et al 2021), as well as for COVID-19 specifically (eg, Banerjee et al 2021). The recommendations are organized based on clinician assessment of disease severity. Some of the recommendations are consensus based.

Step 7b - Pharmacologic Treatment

This section is abstracted directly from the NIH COVID-19 treatment guidelines, the majority of which are evidence based. The entries are listed by severity of disease. When provided in the NIH guidelines, the strength of the recommendation and level of evidence for the recommendation are specified. **(See Table 1 for definitions.)** For example, the following recommendation is provided for moderate, severe, or critical COVID-19:

Remdesivir: For hospitalized patients who require minimal supplemental oxygen (BIIa).

■ Instructions

This tool is intended for use in patients aged ≥18 years. The evidence for management of COVID-19 is evolving quickly and recommendations may change.

■ Use the Tool Now

[Access the ACEP ED COVID-19 Management Tool on MDCalc](#)

■ Calculator Creators

- Stephen Cantrill, MD, FACEP
- Brian Fengler, MD
- Shannon Brown
- Christopher R. Carpenter, MD, MSc, FACEP, AGSF
- Brenna Farmer, MD, MBA, MS
- Kent C. Grimes
- Tara Khan, DO, MS
- Dan Mayer, MD
- Laura Melville, MD, MS

Table 1. National Institutes of Health Recommendation Rating Scheme

Strength of Recommendation	Quality of Evidence for Recommendation
A: Strong recommendation for the statement	I: One or more randomized trials without major limitations
B: Moderate recommendation for the statement	IIa: Other randomized trials or subgroup analyses of randomized trials
C: Optional recommendation for the statement	IIb: Nonrandomized trials or observational cohort studies
	III: Expert opinion

National Institutes of Health. Coronavirus disease 2019 (COVID-19) treatment guidelines. 2021. Available at: <https://www.covid19treatmentguidelines.nih.gov/about-the-guidelines/introduction/>.

- David Ng, MD, MS, FACEP
- Christopher Sampson, MD, FACEP
- Sandy Schneider, MD, FACEP
- Saman Shahid, MBBS
- Bradley Shy, MD, FACEP
- Peter A. D. Steel, MA, MBBS
- Edward H. Suh, MD

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All current citations are listed on page 7 of the [ACEP Emergency Department COVID-19 Management Tool](#).

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Contact EB Medicine:
Phone: 678-366-7933
Fax: 770-500-1316
3475 Holcomb Bridge Road
Suite 100
Peachtree Corners, GA 30092



Contact MD Aware:
Phone: 646-543-8380
12 East 20th Street
5th Floor
New York, NY 10003

ISSN info and disclaimer:

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