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Editorial

COVID-19 Severity Scoring Tool for low resourced settings

Despite containment efforts, infection with SARS-CoV-2 has reached pandemic status. More than three-quarters of the world's nations and territories have been affected, and cases are being found in previously unaffected areas each day [1]. At the time of writing, there were 500,000 confirmed cases worldwide, with nearly 25,000 deaths [1]; these numbers are expected to grow in the coming weeks and months. Although data surrounding the novel coronavirus are rapidly evolving, initial estimates depict a dire situation: 20% of infections lead to severe or critical disease [2]. Mortality has varied across settings, but early data suggest a case fatality rate near 4% [4,5].

It is increasingly likely that the countries with the least capacity to respond will soon be affected on a large scale [6]. There, highly vulnerable populations, compromised by malnutrition and comorbid diseases, face a greater risk of developing severe and critical disease [3]. Early recognition, resuscitation and referral have proven key to effective responses, yielding lower mortality [7]. These processes are, however, significantly more challenging in low-resource settings (LRS) [3,6]. Most LRS have scarce critical care resources, with limitations in the availability of oxygen and other basics, as well as healthcare provider shortages [8,9]. Immediate targeted efforts are needed to assist these settings in managing large numbers of acutely ill COVID-19 patients.

Although substantial literature has been generated surrounding the initial response, much of it describes provisions of frontline care in higher-income regions: predictably, evidence is lacking to inform responses in LRS. In light of this, the African Federation for Emergency Medicine (AFEM) has developed a set of tools tailored to supporting frontline providers who are facing this crisis in LRS.

Using advanced machine learning on hospital-based data from 13,500 COVID-19 patients, AFEM partnered with Surgisphere to develop a COVID-19 Severity Scoring Tool. The tool aims to aid frontline providers in rapidly determining which patients presenting to Emergency Units (EUs) with suspected or confirmed COVID-19 require respiratory interventions. The tool assigns patients into a severity category that aligns to WHO's classification: critical, severe and moderate/mild. By definition, critical patients require ventilation; severe patients require oxygen; moderate patients have pneumonia but no oxygen need, and mild patients only have upper respiratory tract disease. An early assessment suggests that the tool correctly classifies 93.6% of patients, overestimating 5.7% and underestimating 0.8% of patient severities.

COVID-19 clinical guidance has also been developed for clinicians working in LRS. In line with both WHO guidelines for severe acute respiratory infections and the WHO Basic Emergency Care course, this document provides direction on the urgent management of acute respiratory distress in adult patients with confirmed or suspected SARS-CoV-2 infection. Practical and realistic strategies are presented for EU

care of patients of all severity levels, with the assumption that there is no easy access to more advanced testing such as troponin or CT scan.

We know that these tools refer to need for respiratory interventions, and recognise that most LRS hospitals have few or no ventilators and very limited oxygen supply. In these settings, the number of patients will significantly outweigh available resources. These tools are intended to assist with clinical management in these settings, but we can never replace clinical decision making at the bedside. We are offering these tools to assist you in this battle. It can be downloaded from the AFEM website's resources section: <https://afem.africa/resources/>.

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