Adoption of COVID-19 triage strategies for low-income settings

Despite major advances in epidemic preparedness, Africa remains uniquely susceptible to novel coronavirus disease 2019 (COVID-19). According to the Infectious Disease Vulnerability Index,[1] 22 of the 25 countries most susceptible to an infectious disease outbreak are in Africa. The high prevalence of HIV, tuberculosis, and other pathogens might potentiate the severity of COVID-19 and contribute to diagnostic uncertainty. Health-care systems and human resources are already spread thin. And although the young age of the population (with more than half aged younger than 20 years) might prove protective, it also means that Africa has much to lose in terms of disability-adjusted life years. On Feb 27, 2020, the first case of COVID-19 in sub-Saharan Africa was reported in Nigeria, making spread in the region more probable.[2]

While preparing a response to COVID-19 outbreak in Uganda, we read Jinnong Zhang and colleagues' work with great interest.[3] We commend the authors for distilling complex information regarding triage and clinical care for patients who have a novel pathogen, for which there is little evidence, into a succinct flowchart. Unfortunately, many aspects of their algorithm would not be feasible in our setting. Chest CT, complete blood counts with differential, and C-reactive protein are all central to their algorithm, and none are routinely available in Uganda.

To train front-line health workers in Uganda to triage patients effectively, we propose a modified COVID-19 screening algorithm (figure) for use in resource-limited settings that do not have established local transmission.

Our algorithm triages patients initially on the basis of fever (subjective or measured) or cough—symptoms that are near ubiquitous among patients with COVID-19.[4] If these symptoms are combined with epidemiological risk, then patients are isolated, appropriate infection prevention and control measures are implemented, and testing for severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is initiated. This approach is simple and uses readily available technology. The most advanced tool required is a thermometer.

Elimination of chest imaging is an important departure of our proposed approach. Although an important part of clinical care, we could not envision a situation in which chest x-ray findings would change who was prioritised for testing. Furthermore, chest x-ray is not available at a large proportion of health facilities in Uganda,[5] and we did not want to ask health workers to navigate an impossible flowchart.

Our algorithm is not intended to lead the health worker to every possible diagnosis. Rather, it is meant to be a rapid and simple tool to decide who requires isolation and targeted testing for SARS-CoV-2. Tuberculosis and community-acquired pneumonia are particularly common in this setting and their presentation could easily mimic COVID-19. The astute clinician should consider these and other disease processes as part of a comprehensive clinical evaluation.

The rapid pace of information means that the ideal approach is likely to change over the coming weeks. Should SARS-CoV-2 continue to spread, the utility of an epidemiological risk question will rapidly fade. For now, we hope this is a simple and reasonable approach that will be helpful for other countries in our region as they prepare for what is to come.

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*Rodgers R Ayebare, Robert Flick, Solome Okware, Bongomin Bodo, Mohammed Lamorde
rayebare@idi.co.ug

Global Health Security Department, Infectious Disease Institute, Makerere University, Kampala 22418, Uganda (RRA, SO, ML); Department of Internal Medicine, Johns Hopkins Hospital, Baltimore, MD, USA (RF); and WHO Uganda Office, Kampala, Uganda (BB)

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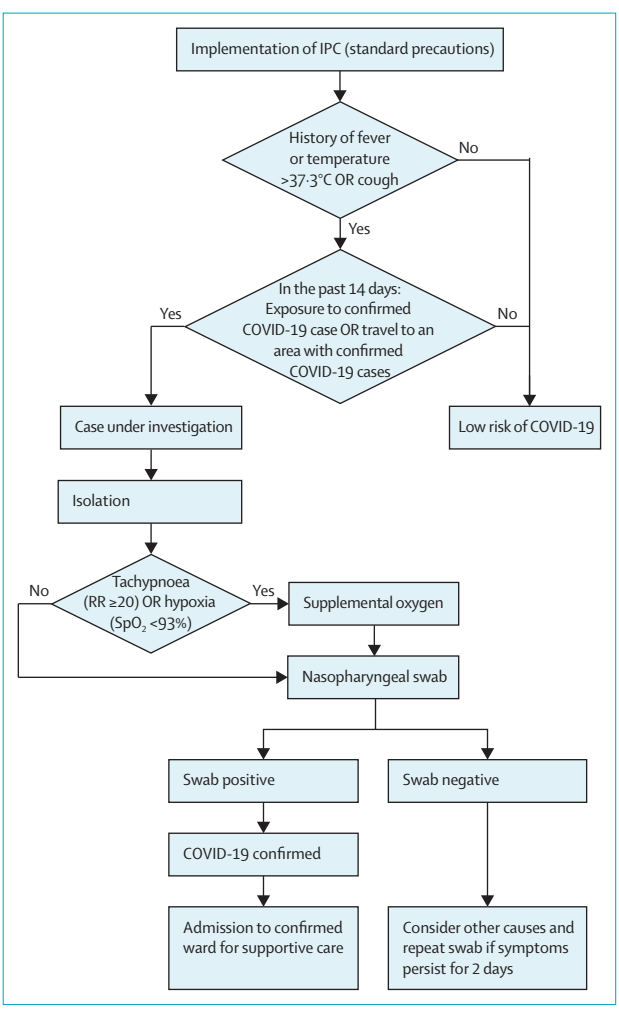

***Figure*: Proposed COVID-19 triage algorithm for low-income settings without established local transmission**
IPC=infection prevention and control. COVID-19=novel coronavirus disease 2019. RR=respiratory rate. SpO_2=oxygen saturation.