CORRESPONDENCE

De-isolating Coronavirus Disease 2019 Suspected Cases: A Continuing Challenge

To THE EDITOR—As of 15 February 2020, Singapore had screened a total of 991 suspected cases for coronavirus disease 2019 (COVID-19), of which 72 cases tested positive, 812 cases tested negative, and the remaining 107 had pending results [1]. Besides optimizing sample type to increase yield and ease of collection [2], the challenge in clinical management of suspected cases lies in deciding whether they may be de-isolated or if further isolation and repeat testing are required.

No single indicator may be effectively used to decide on de-isolation of a suspected case. In our series of positive cases, samples from 1 suspected case only returned positive on the fifth repeated sample (nasopharyngeal swab), on the seventh day of clinical illness. Current evidence suggests that transmission of COVID-19 may be possible even from asymptomatic contacts [3], and polymerase chain reaction testing may not return positive initially [4]. Our suspected case was kept isolated because of a high index of clinical suspicion, with a clinically compatible illness and history of close contact with a laboratory-proven COVID-19 case. While multiplex respiratory virus panels, in general, may be helpful in the evaluation of other viral acute respiratory infections (ARIs), even the detection of an alternate respiratory pathogen may not definitively exclude COVID-19 infection. Dual infections can occur in 10%–20% of viral ARIs, as has been reported with severe acute respiratory syndrome coronavirus and Middle East respiratory syndrome coronavirus [5]. In our case series, 1 patient with confirmed COVID-19 by a nasopharyngeal sample also exhibited clinical symptoms compatible with dengue fever. This was laboratory confirmed by dengue NS1 antigen test. (P. L. Lim, personal communication, February 2020).

There were 2 notable operational challenges in the de-isolation of suspected cases. With substantial numbers of suspected cases admitted for isolation and the need to hold patients for repeated testing, there was a need to manage isolation room occupancy. However, for patients who needed ongoing inpatient care for other reasons, we also needed to address the risk of inadvertent nosocomial amplification, to reduce the risk of transmission from patients who had tested negative early in their clinical illness. A rigorous framework was required to help clinicians de-isolate COVID-19 patients safely.

At the National Centre for Infectious Diseases, we have used the algorithm shown in Figure 1 as our decision-making matrix to decide on the disposition of our patients.

As with other respiratory viruses, factors such as sample type (lower respiratory samples being preferable in patients with pneumonia) and specimen collection technique will contribute to the sensitivity and ease of diagnostic testing. We addressed the challenge of delayed positivity in coronavirus testing in relation to illness onset, by repeating testing for patients who are within the first 7 days of respiratory symptoms, and for whom COVID-19 is still suspected despite initial negative tests. Our algorithm incorporates epidemiological and clinical features needed to decide the disposition of suspected cases, while acknowledging that microbiologic testing might be negative early in the course of illness. With emerging data and further understanding of COVID-19, this algorithm may be refined further and its performance assessed prospectively.

Note

Potential conflicts of interest. The authors: No reported conflicts of interest. All authors have submitted the ICMJE Form for Disclosure of Potential Conflicts of Interest.

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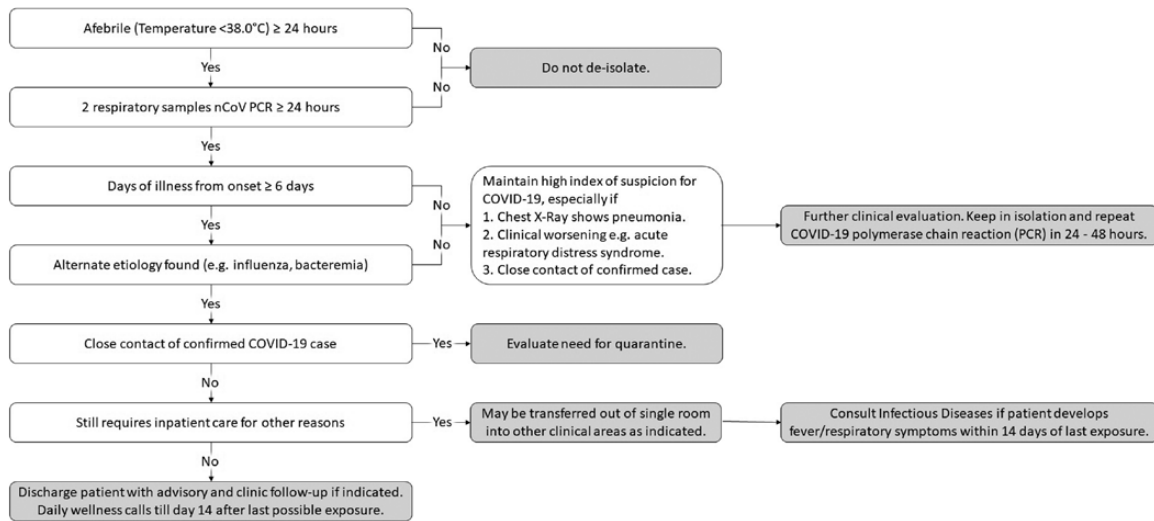
Figure 1. National Centre for Infectious Diseases de-isolation criteria for coronavirus disease 2019 suspected cases.
Abbreviations: COVID-19, coronavirus disease 2019; nCoV, novel coronavirus; PCR, XXX.