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Initial Experience of an Emergency Department in Shenzhen in Responding to the Emerging Wuhan Coronavirus Pneumonia



To the Editor:

Since the emergence of a cluster of patients with pneumonia caused by a novel coronavirus (COVID-19) in Wuhan, Hubei, China, in December 2019, emergency departments (EDs) in China have instituted special measures to manage patients with potential exposure to the virus. We describe our initial experience in managing the current outbreak caused by COVID-19.

Shenzhen is a metropolis in southern China with a population of greater than 12 million. Our ED is located in the Futian district of Shenzhen, serving a population of 1.5 million. The annual census is approximately 170,000. On January 10, 2020, the ED set up a designated clinic for enhanced surveillance, in addition to hospitalwide infection control measures in response to the spread of COVID-19. ED patients with fever or symptoms of acute respiratory illness and with travel history to Hubei or having close contact with patients with confirmed cases of COVID-19 infection or febrile persons in Hubei within 14 days before symptom onset are referred to this clinic directly from ED triage. Patients then undergo a series of investigations; specifically, computed tomographic (CT) scan of the lungs and reverse transcriptase–polymerase chain reaction assay for common respiratory viruses. If a patient's lung scan shows changes suggestive of infection, further diagnostic testing, including that for the COVID-19, is arranged. Infection by COVID-19 is a notifiable disease. Every patient has a legal obligation to comply with treatment.

Between January 10 and February 3, 2020, there were 9,059 patients attending the ED. A total of 419 patients were referred to the designated clinic. COVID-19 pneumonia was diagnosed in 20 of them, which corresponds to a positive predictive value of 4.8% (20/419) of the screening criteria. The clinical symptoms of our patients were largely similar to those reported elsewhere.¹ Five patients (25%) did not have respiratory symptoms but

had fatigue, myalgia, or nausea instead. All patients except 1 were stable, which contrasts with the findings in a case series of 99 patients, of whom 17% developed acute respiratory distress syndrome.²

From the ED perspective, several lessons are apparent. Effective screening procedures in the ED are essential. A positive predictive value of 4.8% of our screening criteria is low, but it can be explained by the low prevalence of the disease in Shenzhen (245 cases as of February 3). Clinical features do not seem helpful in diagnosis because 25% of our patients did not have respiratory symptoms. Therefore, the importance of clinical vigilance cannot be overemphasized. CT scan is preferred to chest radiograph in aiding diagnosis because the sensitivity and positive predictive value of the latter for pneumonia are poor.³ To the best of our knowledge, there has been no research published on COVID-19 by the emergency medicine community. Because interdisciplinary collaboration is critical to manage the outbreak, we look forward to more ED-based research.

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