

## Critical Care Response to Coronavirus Outbreak in Shenzhen, China



In December 2019, there was an outbreak of a novel virus in Wuhan, China. Termed nCOV or coronavirus disease by the WHO, this infection is now a major public health concern not only in China but globally. The 2019 nCOV pandemic has led to a major influx of infected patients to hospitals and in particular to intensive care units. In China, this has already strained medical facilities and healthcare workers.

To counter this pandemic, healthcare experts in Shenzhen, China created a central command and control structure which is now helping healthcare workers make quick and informed decisions about patient care, quarantine and travel. Unfortunately, this type of control measure is too little, too late.

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In the beginning, the virus was not deemed to be a major health hazard and the overall response from the healthcare system and the local government in Wuhan was slow. All of a sudden in January 2020, there was a rapid expansion of patients with the infection and healthcare workers started to encounter nosocomial transmission. At that time, very little was known about the coronavirus and the type of precautions that should have been taken were not in place. There was also a significant lack of backup resources.

COVID-19 occurred at the time of the Spring Festival Holiday which further limited human resources. Many people travelled during this time and this travel was associated with a high risk of transmission. During the initial outbreak in Wuhan it was not known if this was just the regular flu or something more serious and officials did not take any preventive measures or impose any travel restrictions as they did not want to create unnecessary panic. This later turned out to be a big mistake.

The problem with nCOV is that its clinical presentation is not specific. Patients present with a fever, cough and diarrhoea but these features are not specific for diagnosis. Initial blood work revealed hypoxaemia and lymphocytopenia. The initial CXR was also variable. Without a specific test, the early diagnosis was missed in many cases. What this caused was massive transmission of the virus to other people as well as to healthcare workers.

Once the severity of the situation was recognised, the level of response from cities and hospitals became more aggressive. People were asked to stay home, businesses were closed, and all non-essential travel within major Chinese cities was banned. In Shenzhen, two large hospitals were built only for patients with the coronavirus infection. The hospitals in turn developed an Infectious Disease Epidemic Plan which facilitated triage, followed by treating and containing the local outbreak. Infected patients were admitted to single bedded, negative pressure rooms in isolated units with intensive care facilities and continuous monitoring. Rooms had to be retrofitted with external HEPA filters and all non-essential surgery was cancelled. Non-coronavirus patients were transferred to other institutions for care.

Caring for COVID-19 patients has revealed that there is a substantial risk of transmission of the virus to healthcare workers. That is why healthcare workers have been asked to limit contact with patients and use personal protective equipment. Additional data indicates that virus shedding could last for three weeks, and that the virus could spread not only via aerosolised droplets but by close contact and fecal oral contact. In Shenzhen, the majority of patients with nCOV were managed with conservative care and with the use of antiviral medications, but death toll continues to increase.

Could the critical care response have been handled differently? One can only wonder but now that the severity of the situation is understood, both Wuhan and Shenzhen are doing their very best to contain transmission and provide optimum patient care.

Source: [Critical Care](#)  
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