

Detection and Management of a COVID-19 Hotspot within a Tertiary Care Hospital

Sir,

A total of 34 million confirmed cases of coronavirus disease (COVID)-19 were reported globally by the World Health Organization as on September 30, 2020, affecting a total of 212 countries, areas, or territories. Total cases in India have peaked to 4.8 million as of September, with Maharashtra being the worst hit case, the tally being 1 million.^[1] Mumbai is among India's highly dense cities. There are many establishments where migrant and daily wage workers reside in an overcrowded condition, which entails a potential threat to the spread of COVID-19.

The tertiary care hospital, where the present outbreak investigation was conducted, is one of Mumbai's most crowded government hospitals. It drains hundreds of COVID-19 patients from all over Mumbai. There are three canteens on campus,

i.e., resident medical officer canteen, boys' canteen, and central canteen. The central canteen, frequented by doctors, patients, and relatives, recently emerged as a hotspot after 21 out of 28 canteen workers turned out to be COVID-19 positive. The central Canteen is a building with two floors and a carpet area of 2500 square feet. Each floor consists of a bathroom, toilet, and a kitchen. It supplies food boxes (i.e., breakfast, lunch, and dinner) to all the COVID-19 patients admitted in the tertiary care hospital along with takeaways for health-care workers, patients' relatives, etc.

On June 11, 2020, 54-year-old male working in the tertiary care hospital's central canteen presented at the outpatient department (OPD) with symptoms of cough and anorexia. He did not have any history of traveling or contact with any COVID-19 patient. Considering his age and severity of

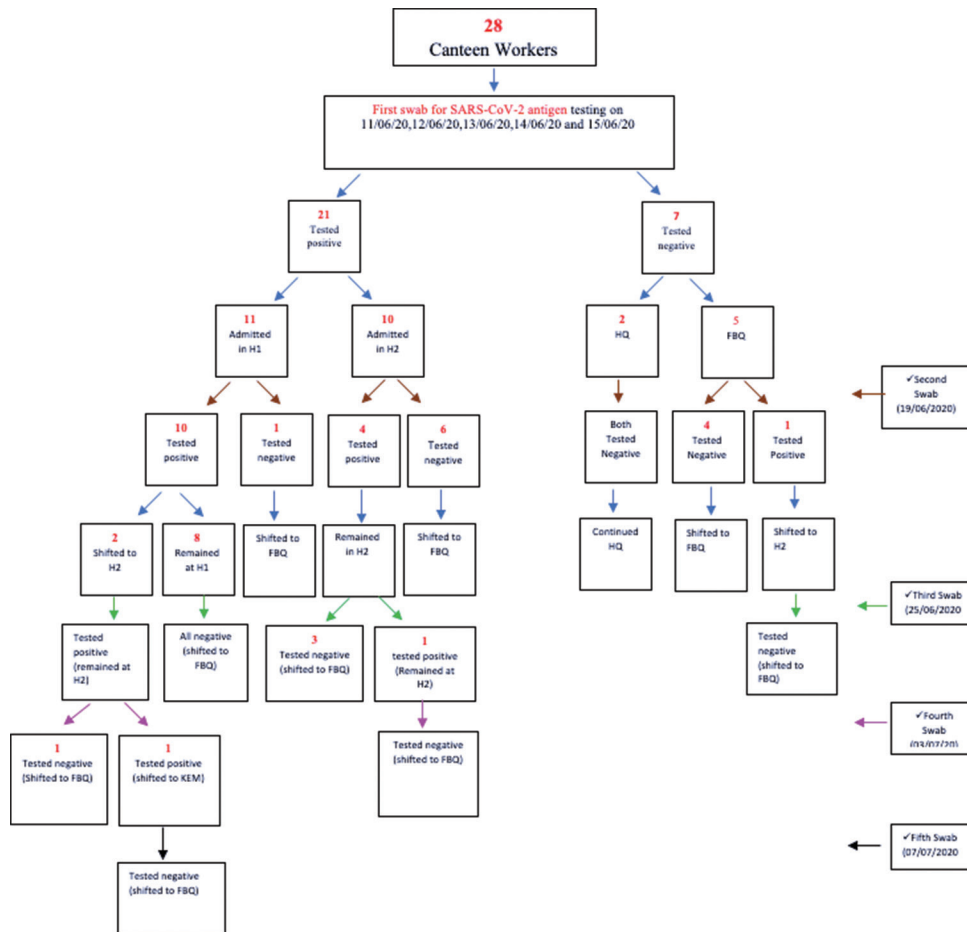


Figure 1: Management workflow to contain the COVID-19 hotspot in a tertiary care hospital, Subsequent swabs were done for CC workers who tested positive, till the attainment of negative test status. *No swabs were done for patients who were shifted to FBQ, *Duration of stay at FBQ was 14 days. H1: Tertiary Care Hospital, H2: Hospital situated 1 km from H1, HQ: Home quarantine, FBQ: Facility Based Quarantine

symptoms, he was prescribed reverse transcription-polymerase chain reaction (Rt-PCR) for SARS-CoV-2 antigen detection and found to be positive. The next day on June 12, 2020, four other workers from the same canteen presented with cough and fever and all came positive for COVID-19 on RT-PCR. The canteen services were immediately shut as the other twenty workers who were asymptomatic became a potential threat to the people taking food parcels from the canteen. It was decided to test all the canteen workers as they fitted into the criteria of high-risk contact.^[2] All the positive canteen workers were admitted to different places depending on severity of their symptoms. All negative workers were provided facility based quarantine (FBQ) for 14 days^[3] and then shifted to canteen.

The last person tested negative on July 3, 2020. Figure 1 depicts the management workflow for containing the hotspot. The contact tracing team recommended that the canteen should be opened 14 days following the day of the negative report, i.e., on or after July 17, 2020. The canteen was intermittently sanitized with sodium hypochlorite till the first batch of canteen workers arrived.

The mean age group was 32 years, and all were males. The majority had been working for more than 10 years. The workers were distributed among themselves according to the work profile, which included cooking, cleaning, food parcel packing, washing utensils, and overall management. Out of 21 canteen workers who tested positive on their first swab, only seven were symptomatic. The majority of them complained of cough. Two of the workers reported fever, whereas only one had a complaint of breathlessness. The three of the canteen workers developed severe symptoms and were kept on oxygen inhalation. Out of these three, one had diabetes mellitus, and another had recently recovered from pulmonary tuberculosis. Fifteen workers had taken hydroxychloroquine (HCQ) prophylaxis, with the mean duration of consumption being 4 weeks. The average duration of stay at the hospital and FBQ was 20 days, with the range being 14-37 days.

The COVID-19 pandemic and the consequential lockdown have negatively affected the small-scale industries and daily wagers. It is essential to prevent such hotspots formation in future by active surveillance of high-risk areas. The first case of the canteen worker came positive on June 11, 2020, and the last case to be discharged was on July 17, 2020. The canteen activities were started after this. This gap of 37 days could have been reduced to 28 if all the tests were performed on the same day. Here, the role of contact tracing is vital because early detection of a potential hotspot can help curb the spread of infection. It will also ensure minimal loss to the daily wagers as the business can be resumed on time. Overcrowded places should be frequently visited by health authorities to detect any suspicious cases and ensure adequate physical distancing. The protective effect of HCQ prophylaxis is controversial, and further studies could help establish their roles in containing such outbreaks. Following this outbreak, all the other canteens of the tertiary care hospital

were also visited to identify any potential threat. Health education regarding physical distancing, hand hygiene, and the importance of mask was given to all the workers. All the workers were directed to report immediately to the OPD if they experience any influenza-like symptoms. The threat is not only to the workers but also to the people who use the services. The outbreak investigation can serve as a tool to formulate guidelines at the national level to contain such hotspots and prevent their formation. This case study proved beneficial in managing a potential outbreak at nursing students' hostel of the same tertiary care hospital. The knowledge helped contain infection spread at many such locations, and no such hotspot formation has been reported on campus for 2 months.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

Gajanan D. Velhal, Niharika Pant, Aditi Dey

Department of Community Medicine, Seth G.S. Medical College and K.E.M. Hospital, Mumbai, Maharashtra, India

Address for correspondence: Dr. Niharika Pant,

Department of Community Medicine, Seth G.S. Medical College and K.E.M. Hospital, Mumbai - 400 012, Maharashtra, India.

E-mail: drniharikapant@gmail.com

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Access this article online

Quick Response Code:



Website:

www.ijcm.org.in

DOI:

10.4103/ijcm.IJCM_877_20

How to cite this article: Velhal GD, Pant N, Dey A. Detection and management of a COVID-19 hotspot within a tertiary care hospital. *Indian J Community Med* 2021;46:355-6.

Received: 09-10-20, **Accepted:** 15-02-21, **Published:** 29-05-21

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