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Letter to the Editor

Kerala's first 100 days of facing the COVID-19 pandemic: a story of public health success

Sir,

The southern state of India-Kerala, where the first coronavirus disease 2019 (COVID-19) cases were reported in the country has come to lime light with its pandemic containing strategies and minimum case fatality rate at hundred days.[1] The state's unparalleled containment and testing strategies was lauded by the Indian Council of Medical Research (ICMR) and referred to it as the "Kerala model".[2]

As soon as the first returnee from Wuhan was reported on January-23, entry screening of travelers from China were instituted at all the three international airports. Asymptomatic travelers were advised home quarantine for fourteen days and monitored daily by health-staff for symptoms. The same day (26 January, 2020) that the World Health Organization (WHO) issued warning to South-East Asian countries, the state prepared and circulated COVID-19 management guidelines to all levels of healthcare.[3,4] The first case was identified from a quarantined individual on 29 January, 2020 who was shifted to a COVID-19 designated hospital. Subsequently, two more cases were reported among quarantined returnees from Wuhan on 2 February 2020 and 3 February 2020. Home quarantine was chosen as the initial control measure since the first episodes were all imported. The index case was the primary case pointing to the sensitivity of the surveillance system.

The next episode started on 8 March 2020 with 6 cases among travelers to Italy and their contacts followed by travelers to middle-East. Stringent immigration screening was instituted - those with symptoms were transferred directly to COVID-19 hospitals while asymptomatic were sent for home quarantine. As COVID-19 outbreaks began to be reported outside the state on 11 March 2020, screening of interstate travelers was started at all major railway stations. Whenever a case was identified, a route map was prepared, the travel, home and hospital contacts listed, and their risks assessed. These contacts were kept in home-quarantine and traced for 28 days. Those with symptoms were transported to hospitals for free treatment according to the national protocol. Special corona care centers were established for those unable to self-quarantine.

The epidemic progressed slowly without any signs of propagation. By the end of April, 500 cases were reported. Of these, 80% were travelers to affected countries and 19% were traceable family contacts.[3] There were a few cases (1%) where the contact could not be established. Thus, even at 100 days, there were no signs of community transmission and cases were limited to local transmission. There were 3 deaths reported from the state with case fatality rate of 0.3% and of the 27,150 tests, the positivity rate was 1.8% which was far lower than the national rates.[3] To rule out unknown community transmission, the state integrated disease surveillance project and prevention of epidemic and infectious diseases cells started early symptom surveillance of influenza like illnesses/severe acute respiratory illness and each death due to ARDS was investigated for COVID-19.

Following recommendations by the state expert groups, the state government implemented all the steps for "crushing the curve".[5] Initially, the samples had to be sent to National Virology laboratory, Pune but by 2 February 2020, the viral diagnostic laboratories in the states were upgraded with SARS-COV2 testing capability and the numbers were scaled up to 16-one in each district. Daily media briefing on the status and strategies was done by the state chief minister.

As part of social distancing measures, the schools were closed, large gatherings were banned and the public was requested to avoid religious gatherings. This happened one day before the WHO declaration of COVID-19 as a pandemic on 11 March 2020.[3,4] District wise "break the chain "campaigns were started on 16 March 2020. By 20 April 2020, the government ordered mandatory use of masks in public places. For implementing reverse isolation, vulnerability mapping and listing was already done at grass roots level by field workers. The department of health performed regular facility mapping and gap analysis. Accordingly, plans for surge was also formulated.

As per " stringency index ' different modes of measures implemented early can reduce the curve height.[6] In the state's favor in these endeavors is the fact that it has the best public health system in the country according to NITI Aayog (National Institution for Transforming India).[7] The success of public health campaigns rely largely on public behavior. In Kerala, the public health literacy and exposure to media are added advantages that played a pivotal role. It is success borne out of decades of social reformation. This is also the reason why other regions may not be able to achieve the same level of success but there are important lessons to be learned.

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