Commentary

Experience of setting up of Control room for COVID-19 at NCDC, New Delhi

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Abstract

Significant public health events of the 21st century include epidemic prone diseases such as severe acute respiratory syndrome (SARS), Middle East respiratory syndrome (MERS), influenza A (H1N1), Ebola virus disease, and coronavirus (SARS-COV-2). Preparedness as well as risk mitigation strategies play an integral role for the success of responses to such health emergencies. An extraordinary cluster of cases of respiratory disease of unknown cause triggered a series of events that constituted a public health risk across the globe through international spread from China and was declared a Public Health Emergency of International Concern (PHEIC) on 30 January, 2020 by the World Health Organization (WHO). To monitor implementation of activities in order to contain the local transmission of COVID-2019 in India, a control room was established at the National Centre for Disease Control (NCDC), New Delhi on 23rd January, 2020 under the Integrated Disease Surveillance Project (IDSP). The main objectives of the control room were to alleviate the concerns and address queries of passengers arriving from the affected countries and also to provide the general public information regarding the measures to be taken as well as the contact details of the respected district health authorities for further necessary action. A total of 183 hunting lines were established at the NCDC, Noida, TB Centre, and the National Health Authority (NHA) Hyderabad and Bengaluru by March 2020. A total of 79,013 calls, 1,04,779 emails, and 1,787 international calls were received w.e.f. 23 January to 30 March, 2020 at the NCDC control room. The NHA Bengaluru and Hyderabad Control room received 3,52,176 calls w.e.f. 15 March to 30 March and TB Noida control room received 55,018 calls w.e.f. 16 March to 30 March, 2020. This prompt action of the center to set up a control room at the NCDC gave the states enough grace period to train their staff and start their individual help lines for addressing people's queries and allay fears.

Keywords: Control room, Covid-19, pandemic

Background

The World Health Organization (WHO) China Country Office on 31 December 2019 was informed of cluster of cases of unknown etiology, which was detected in Wuhan City situated in the Hubei Province of China. The number of patients reported to the WHO by the authorities in China from 31 December 2019 to 3 January 2020 with pneumonia were 44.[1] The causal agent could not be identified during this period.[1,2] The WHO had by then declared COVID-19 to be a Public Health Emergency of International Concern and an epidemic on 30 January 2020.[1] On 3rd January, the WHO was contacted through the International

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Health Regulations (IHR) mechanism from the National Centre for Disease Control (NCDC), New Delhi for the current scenario and following that, sequential meetings were held on 7th and 11th January at the NCDC, which is the national focal point for the IHR. Joint Monitoring Group meetings were held on 8th January and 15th January, 2020 to review COVID-19 outbreak in China, its spread, and public health implications for India. Major decisions were taken.[3] All major international airports got prepared for point of entry surveillance including provision for thermal scanning. The NCDC issued advisories and circulated prescribed formats for reporting to all State Surveillance Officers. The Integrated Disease Surveillance Project (IDSP) was prepared for community surveillance and contract tracing, and the National Institute of Virology (NIV), Pune was fully prepared to test the suspect samples and subsequently all Viral Research and Diagnostic Laboratories (VRDLs) were activated for such sample testing. Dr Ram Manohar Lohia (RML) Hospital, New Delhi, was the designated hospital with the isolation facilities to manage cases referred by the Airport Health Organization (APHO), Delhi. The Emergency Medical Relief informed that enough deterrent stock of personal protective equipment was available for supply to Central Government hospitals, APHOs, Port Health Organizations (PHOs), and even State Governments. To contain the spread of this disease, the Ministry of Health and Family Welfare (MoHFW) has released travel advisories, which mentions prohibition of travel from and to China, the Republic of Korea, Islamic Republic of Iran, Japan, Italy, France, Spain, and Germany. Persons having travel history from these countries were quarantined for 14 days. All tourist visas were suspended. An intensive information, education and communication (IEC) campaign was rolled out, guidelines for surveillance, contact tracing, quarantine, diagnosis, laboratory tests, and management were also released. Maintenance of routine personal hygiene guidelines were also rolled out by the MoHFW, which included more frequent handwashing with soap and water or using of an alcohol-based hand sanitizer, cough etiquette, avoiding touching of face, and maintaining social distance at all times and especially with people who are unwell or showing symptoms of COVID-19 such as fever, cough, breathlessness, etc.

India reported its first case on January 30, 2020 from Kerala where a student had travelled from Wuhan, China, to India. There has been a sharp rise of cases in India since then. The WHO declared COVID-19 as a pandemic on 30th January, 2020. To monitor implementation of activities to contain the local transmission of COVID-2019, a control room was established at the NCDC, New Delhi on 23rd January, 2020 under the IDSP. This article explains the process of setting up of a control room at the central level, its functionality, and subsequent rolling it out to the states.

Methodology

A control room was established on 23rd January, 2020 at Strategic Health Operations Centre (SHOC), National Centre for Disease Control (NCDC), New Delhi. The main objectives of the control room were to address the concerns and queries of passengers arriving from China and other affected countries and also of the general public and provide them measures to be taken as well as the contact details of the respected district Health authorities for further necessary action. Strategic planning for smooth implementation of activities was undertaken through.

Capacity building and logistics

For managing the control room, a duty roster was made on weekly basis, which was duly approved by the competent authority. Manpower including technical staff, deputy directors, assistant directors, and additional directors from various departments including microbiology, biotechnology, entomology, mycology, public health personnel, virology, biochemistry, and parasitology were assigned control room duties on rotation basis.

Before the operationalization of the control room, all the above-mentioned staff were sensitized with the existing literature on COVID-19. They were given a set of frequently asked questions on COVID-19, which included queries regarding its epidemiology, transmission, prevention and control, risks, various do's and don'ts and various information for international travel, etc., They were also provided with the copies of updated contact list of District Surveillance Officers, State Surveillance Officers, Public Health officers, Airport Public Health Officers, important contact numbers from the Mo HFW, the WHO situation reports, State helpline numbers, Ministry of External Affairs helpline numbers, and important embassy numbers.

For any unsolved query at their level, they referred these queries to the higher officials of the concerned department. Clinical queries were referred to the Assistant Director of Epidemiology, the NCDC, movement-related queries were referred to the respective district/state helplines numbers and further to District Surveillance Officer or State Surveillance Officer.

Supervision and feedback

All the activities of control room were supervised and reviewed by senior officers on daily basis and control room coordinator and reviewed by Director, NCDC. The data collected from the control room was communicated to the IDSP, Epidemiology and Director General of Health Services twice daily at 8 am and 8 pm, respectively.

Results

Initially, a single 24 * 7 line was operational, and staff was posted in two shifts (Shift I - 08:00 am to 08:00 pm and Shift II- 08:00 pm to 08:00 am). Two additional hunting lines were started on 30th January, 2020 due to increased call load. Subsequently, the NCDC started 10 hunting lines on 5th February, 2020 and additional 20 on 5th March (+10) and 12th March, 2020 (+10), respectively giving a total of 30 dedicated lines for COVID-19 with a dedicated national helpline number 1075 and another toll-free number

1800-112-545. In addition to that, the NCDC also created one email address (ncov2019@gov.in) for COVID-19 queries.

Expansion of the control rooms beyond the NCDC

As the number of COVID-19 cases rose, the National Health Authority (NHA) control rooms at Hyderabad and Bengaluru were converted into COVID-19 control rooms with 40 phone lines, and they were operational between 6:30 am to 10:30 pm and 25 lines between 10:30 pm to 6:00 am as on 15th March, 2020. Noida TB control room was converted into COVID-19 control room with 28 dedicated lines between 7:00 am to 11:00 pm and 6 phone lines between 11:00 pm to 7:00 am as on 16th March, 2020.

Status of hunting lines

As on 22nd March 2020, a total of 183 hunting lines were active during the day shift. There were 25 lines at the NCDC Delhi, 28 at Noida TB control room, 90 lines at Hyderabad NHA, and 40 lines at Bengaluru NHA. A total of 56 hunting lines were active during the night shift along with one email helpline. There were 10 lines at NCDC Delhi, 6 lines at Noida TB control room, 10 lines at Hyderabad NHA, and 30 lines at Bengaluru NHA.

Origin of calls

These call centers received various national as well as international calls. It received various international calls from China, Thailand, Hongkong, USA, Australia, Canada, Qatar, Indonesia, Singapore, Korea, Dubai, UK, Italy, USA, London, Taiwan, New York, South Korea, Russia, Malaysia, and UAE. Calls and queries from Ministry of Tourism, Indian Offices of China Embassy, Gates foundation, the South East Asia. Regional Office (SEARO), and the WHO were also received. There were several queries from the AIIMS Delhi, Airport Public Health Offices and Public Health Offices, State Bank of India, and various hospitals. Maximum calls received between January to February (N = 510) were from India 221 (43%) followed by Italy 77 (15%) as shown in Figure 1.

Number of calls received

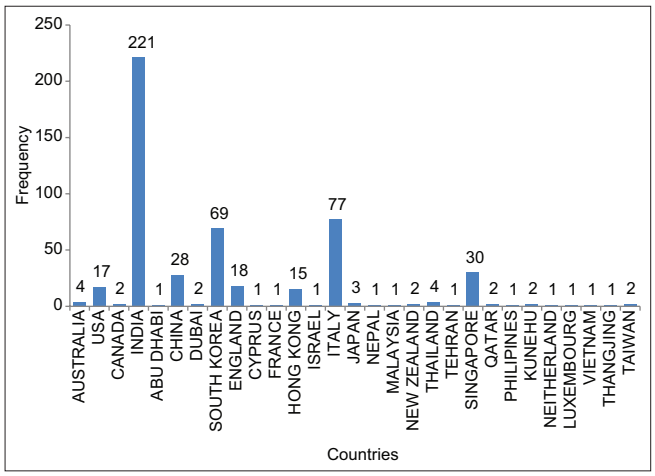

Figure 1: Origin of calls received at call centers in Control room

The NCDC control room received a total of 79,013 calls, 1,04,779 emails, and 1,787 international calls w.e.f. 23 January to 30 March, 2020. NHA Bengaluru and Hyderabad Control room received 3,52,176 calls w.e.f. 15 March to 30 March and TB Noida control room received 55,018 calls w.e.f. 16 March to 30 March, 2020. Figure 2 shows the proportion of calls received via telephone and email and international calls.

Types of queries

The types of queries changed as the situation evolved in India and internationally. Primarily the telephonic queries included details about COVID- 19 and administrative issues such as immigration or emigration. Several basic questions about what exactly is COVID, signs and symptoms, prevention, mode of spread, etc., Many had problems to differentiate common cold from COVID-19. Queries from hospitals included the guidelines for transporting COVID-19 samples, referral, isolation, and treatment. Then, there were many administrative queries for crossing Indian borders and government guidelines between foreign country and India. There were also questions regarding the quarantine facility and duration for those who have arrived in India from COVID-19 affected nations. There were several queries regarding the self-declaration form, COVID-19 free health certificate, and COVID-19 in animals.

Discussion

The prompt action of the center to set up a control room at the NCDC gave the states enough grace period to train their staff and start their individual helplines for addressing people's queries and allay fears. The NCDC has released the set of standard operating procedures to set up a control room at a district or state. A control room with dedicated helpline number was set up at State and District headquarters. It was manned by the State and District Surveillance Officer, respectively, to provide general public various information regarding COVID-19 transmission, preventive measures to be followed, and the need for timely reporting to health facilities. The surveillance officers also had the role to look into the availability of essential services for COVID-19 patients as well as to facilitate in the administrative orders on perimeter control. Data managers were also deployed especially from the IDSP/NHM and they have been made

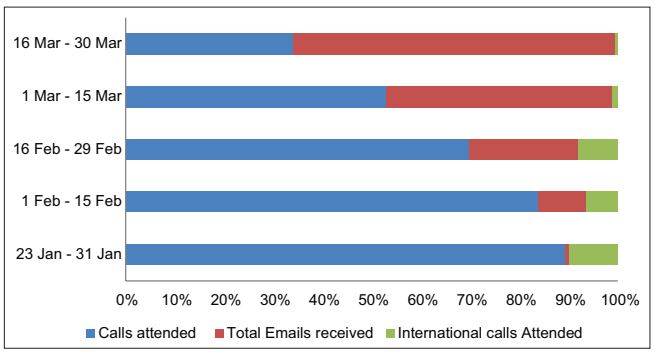

Figure 2: Bar graph showing the proportion of calls and emails received w.e.f 23 Jan to 30 Mar, 2020

responsible for collecting, collating, and analyzing data from field and health facilities so that the daily reports for the total number of suspects, confirmed case, critical cases on ventilator, total deaths, and number of contacts under surveillance are available to all the stakeholders for timely and prompt action. Such control rooms are also being set up at the geographic quarantine zone to facilitate collection, collation, and dissemination of data from various field units to District and State Control Rooms. The Control Room at State Government Headquarters is also responsible for alerting neighboring districts for detection of COVID-19 clustering of cases.

Risk reduction and preparedness for such crises-like situation in the ongoing pandemic has gained wider recognition. Setting up of such control rooms at various State and National Headquarters for risk mitigation, generating alerts, and as call centers for prompt query solving will have to be complemented by involving stakeholders at all levels of health care delivery system. In the wake of various outbreaks that has happened across the globe, it has been identified that a community-based preventive approach has always helped in responding to the crises.[4] Indian has also strengthened its primary health care and is focused to improve the service delivery through creation of health and wellness centers under the Ayushman Bharat Scheme. During this pandemic, it was observed that increasingly more people preferred to stay at their homes for isolation rather than going to tertiary care and other private hospitals. In such scenario, the role of primary care physicians be it at the primary health center (PHC) or community health center (CHC) level has helped in providing the services to patient's doorstep. Apart from that, the data that were generated through surveillance activities have helped them in planning for defining containment zones and perimeter control in their areas as well as contact tracing through active surveillance and testing at doorstep or in community. The primary care physicians have been instrumental in provision of other essential health care services like those for chronic diseases such as diabetes, hypertension, and those on palliative care. Thus, primary care physicians have multiple roles to play along with their clinical expertise, they demonstrate the leadership skills for collaboration and working with other staff, skills for effective communication in viewing patients and treating them as a part of community and generating awareness related to COVID-19 appropriate behaviors, and should have the skill of capacity building of the staff for appropriate counselling and delivery of IEC messages for the same.

Limitations

As the officers and staff involved were not well versed with the different local and foreign languages, there were difficulties in communication. Communication lines were through the Mahanagar Telephone Nigam Limited (MTNL) System with pilot number and the hunting lines. However, this system was not able to meet the rising demands due to increase in numbers of callers. The newer technology i.e., interactive voice response system (IVRS) is now planned by the Govt. of India to get health care and guidance over the call. The facility is targeted for the citizens, who cannot afford smart phones and, thus, are unable to download the Aarogya Setu app. The toll-free number 1075 can be called upon by citizens. The system calls them back and asks simple questions in their mother tongue. There was no established mechanism for call back or feedback.

Conclusion

The setting up of control rooms have thus, guided in the process of establishing various administrative and policy decisions in terms of preventing and controlling this pandemic as well as devising testing strategies for lockdown and interstate and international travels. The information generated through this channel has also helped in developing risk communication strategies through creating awareness among the general public and focusing on the high-risk groups identified through surveillance activities. Provisions have also been made for communication between adjacent districts, for contact tracing, and follow up of persons exiting the containment zones. Thus, setting up of control rooms at central, state, and district level is one of the key strategic interventions and complements with strengthening of the health system, especially the primary health care that will help to keep the disease under control.

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Conflicts of interest

There are no conflicts of interest.

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