Response to COVID-19 Pandemic in India: How can we Strengthen Our Response?

The first case of COVID-19 in India was reported from Kerala on 30th January,[1] a month after its detection in China,[2] and on the day, it was declared as Public Health Emergency of International Concern[3] by the World Health Organization (WHO). Admirably, the health department of Kerala along with local self-government successfully contained the disease by active contact tracing, home quarantining, isolation and case management using people-centered primary health-care approach,[4] and laid foundation for India’s public health response. While three cases in quick succession in a span of 4 days in Kerala forewarned the imminent pandemic, the subsequent lull till March 4 provided a long window of opportunity to prepare for its containment and mitigation.

Creditably, the Government of India (GoI) responded with several proactive measures to prevent the emerging epidemic and demonstrated high level of political and administrative commitment with the Prime Minister himself leading key anti-COVID-19 initiatives. Government’s response to the pandemic started in January through a series of travel advisories and initiation of screening for fever of incoming international travelers at ports of entry.[5] Asymptomatic passengers were screened, home quarantined and followed up, while those with symptoms were tested and if positive, isolated and provided care. Health ministry formulated public health strategy to contain the infection in consultation with Indian Council of Medical Research (ICMR) and National Center for Disease Control (NCDC) with support from other relevant ministries of the government.

On March 11, when the WHO declared COVID-19 as pandemic, Ministry of Health and Family Welfare (MoHFW) and Ministry of Home Affairs (MHA) invoked Epidemic Disease Act (1897) and Disaster Management Act (2005)[6] to enhance the powers of central government to implement prevention activities across the country. Furthermore, the State Disaster Response Fund was allocated to States to contain and mitigate the spread.[7] In addition to widespread health messaging, nation-wide curfew was imposed to promote awareness about the importance of nonpharmacological interventions, dispel myths and misconceptions, and allay undue fears. The response was periodically reviewed, and regular guidance was provided on the various aspects of containment and mitigation measures. New guidelines or notifications were issued (a) to ramp up testing by increasing laboratory network and involving private laboratories, (b) to enhance health-care facilities by increasing bed strength and ventilator support, (c) to create quarantine facilities for those who cannot be home quarantined, (d) to sustain immunization and other non-COVID health care services, and (e) to improve availability of essential items such as masks and sanitizers through regulatory notifications.[8] The response was multi-sectoral and multi-ministerial and took recourse to legal approach for public health action.

At this stage, MHA (GoI) initiated two notable measures: (a) nationwide lockdown[9] which was implemented on March 24 with stringent restrictions and extended till May 30 in four phases with gradual and context wise relaxation[10] and (b) creation of eleven empowered groups to guide and advise the government on the various aspects related to prevention and control of the epidemic and to monitor the implementation of containment plan.[11] Avowed purpose of the nation-wide lockdown was to curb the spread and flatten the epidemic curve of COVID-19 to enable the central and state governments to enhance health care infrastructure to deal with possible surge in COVID-19 cases. WHO experts, while praising it as “robust,[12] far-sighted and courageous,”[13] also cautioned that lockdowns alone will not eliminate coronavirus and effective systems for containment should be in place.[14] The outcome of this intervention was a mixed bag. When lockdown was implemented on March 24, the cumulative number of COVID-19 cases was 567, and by May 31, when the fourth phase of lock down ended, it climbed to 190,609.[15] Some of the modelling exercises claimed that it managed to slow down the spread though could not contain it. However, the slow down came at considerable social, economic, and humanitarian cost, particularly affecting the poorer sections of the population and migrant workers.[16] Understandably, this became a point of fierce debate.

The Empowered Groups, regularly designed and disseminated a series of clinical and nonclinical guidelines, Standard Operating Procedures and Protocols related to diagnosis, testing, surveillance, and management of COVID-19 cases and other related issues for adaptation by the states. Emphasis has been placed on public health approach to tackle this pandemic as is reflected in the statement of Member (Health), NITI Aayog at FICCI Webinar that “in order to control COVID-19, it is imperative that the public health approach should be implemented effectively on the ground, involving the government, civil agencies, communities, and all concerned stakeholders”. He also highlighted the role of “community volunteers in addressing the individual behaviors” which are critical in controlling this disease.[17]
In addition, the Central government came up with several initiatives such as free testing and treatment under Ayushman Bharat, additional insurance cover of INR 50 lacs for frontline health care and sanitation workers, negotiation of loans from World Bank and Asian Development Bank, Emergency relief and “Make in India packages”[18] In a figurative sense, no stone was left unturned but the utilization varied between the states.

Wide diversity in epidemiological parameters of COVID-19 between and within states, necessitated use of modern technologies for centralized policy decision and decentralized and contextualized response in the states. GoI as well as many state governments collaborated with private sector and academic institutions to use Information and Communication Technologies, Artificial Intelligence, and Big data analytics for efficient risk triage, contact tracing, geo fencing, and quarantine management of participants. Arogya Setu, a national level user friendly mobile application to inform and advise people on their risk of exposure to COVID 19, vastly strengthens surveillance capabilities, but has invited criticism because it has few safeguards to protect individual’s privacy.[19]

Despite political will, high level of commitment, a slew of legal measures, and impressive public health response, there has been rapid surge in cases and deaths post lockdown. Currently, the country has the dubious distinction of having the third largest number of cases after the USA and Brazil at 19.6 lakh total confirmed cases and 40,700 deaths as of August 5, 2020, including the day’s addition of 56,256 cases and 919 deaths.[20] However, there are multiple epidemics in the country with different levels and trajectories and a national average can neither describe the situation in the country nor inform local planning. Lately, ICMR undertook a representative national survey whose results released recently showed 0.73% positivity for IgG antibodies for the virus as of Mid-May[21] a survey by NCDC revealed that about 23% of Delhi residents are positive[22] indicating variable but significant spread in the country. However, some consider the current burden of cases (898/million) or deaths (22/million) is low compared to many advanced countries. While such statistics are good from epidemiological perspective, absolute cases are truly reflective of the extent of burden on the health systems which are not adequately prepared for such pandemics. The results of these serosurveys in conjunction with some immunological studies outside the country[23] unravel the issues around herd immunity and necessitate fresh look at our containment plans in high-transmission cities or areas.

The current pandemic is the largest in the recent past and not necessarily the last. Despite country’s comprehensive response, cases and deaths have been surging. A critical appraisal of our response to identify what could have been done more or differently would provide lessons for future. In our perception, the following issues merit attention: (a) Lock down and its impact, (b) Community mobilization and participation in epidemic containment and promoting health awareness, (c) strengthening of health systems with focus on primary health-care workers, (d) Provision for routine health needs, (e) Adequate testing, (f) Information, education and communication, and behavior change, (g) Health information systems and databases for planning and guidance, and (h) Involvement/participation of public health experts for localized and context specific planning. We will briefly present our views below.

Nationwide lockdown, notwithstanding the “perceived” success in containing the spread of the virus, had drawn wide attention and fierce debate for its negative socioeconomic impact. Sudden announced with inadequate planning led to the closure of workplaces, resulting in the loss of livelihoods for millions of migrant workers in different cities. Unaware of an assured assistance from the government, they started to return to their hometowns and villages in the process violating disease containment measures and exposing themselves to many a malady. This, in fact, has increased the chances of spread of the virus into hitherto low prevalence areas. Adequate preparation before lockdown coupled with holistic, context specific, comprehensive, and participative planning would have helped the pandemic response. Rationale of such stringent lockdown was also questioned by a section of epidemiologists because an immunogenic viral disease such as COVID-19 is bound to resurge until herd immunity is achieved either naturally or through immunization.[24] Some argue that herd immunity as a strategy to contain the pandemic is fraught with enormous mortality and avoidable long-term consequences such as cardiomyopathy among those who recover. However, the surge in the cases and deaths post lockdown clearly shows that we could not avert the feared mortality from Covid-19.

On the other hand, there was excess non-COVID mortality during lockdowns because access to health-care facilities was adversely affected.

Community participation is essential for effective disease control. One of the fundamental principles of primary health care in managing pandemics is developing capacities of local community and their active involvement, as acknowledged by current policy-makers also. However, we seem to have ignored this. Its importance is demonstrated by Andhra Pradesh where Village Volunteers and ASHA workers played a critical role in tracking Jamaat returnees and travelers, early detection of symptomatic individuals and their referral to hospital, contact tracing and monitoring those under quarantine, and in creating health awareness.[25,26] Similar approach was key to the success in Kerala (family returning from Italy to Pattanathitta)[27] and Punjab (pilgrims returning from Nanded)[28] also. However, some states seem to have ignored this principle as evidenced in the context of people returning from abroad slipping out of quarantine and participating in large gatherings.[29,30]

Most of the measures undertaken in response to the current pandemic were actually to address the gaps in our health.
system resulting from chronic neglect and inadequate epidemic preparedness. Strengthening health systems and effective utilization of primary health care workforce to track contacts and monitor them under home quarantine were one of the best practices from Kerala which, unfortunately, has not been adopted by many states. More recently, at peak of the epidemic Delhi changed its policy to home isolation of mild and asymptomatic cases and successfully monitored them using Pulse Oximeters, which reduced the pressure on overwhelmed hospitals. With today's progress in technology, one way to improve the efficiency of health work force is to equip them with appropriate gadgets and Apps. We strongly advocate the creation of public health cadre, and allocation of higher resources (2.5% of GDP) to health sector, as recommended in National Health Policy 2017, in order to strengthen the health systems to face such crises.

Care of routine health needs such as immunization, reproductive and MCH care, treatment and services for HIV/AIDS, tuberculosis, malaria, and chronic noncommunicable diseases is urgently needed to avoid millions of preventable nonCOVID-19 deaths. Therefore, sound and consistent investments in primary healthcare are a prerequisite to build and maintain strong health systems to effectively deal with health disasters and disease pandemics in future.

Initially, testing was restricted to symptomatic individuals with a history of international travel or exposure to confirmed case, health-care providers and frontline workers owing to inadequate laboratory facilities and limited availability of reverse-transcription polymerase chain reaction test kits. Asymptomatic travelers were quarantined for 14 days and were tested on developing symptoms or before release from quarantine. By this approach a significant proportion of asymptomatic individuals harboring the virus can elude the screening barriers to become a hidden source of infection, and need attention in our testing policies. However, over time-testing facilities have been scaled up, nucleic acid test and rapid antigen test were introduced, indigenous serological kits were developed and testing, in general, has been significantly strengthened. However, in some states such as Bihar and Telangana, testing is woefully low and needs to be addressed.

The role of media in community awareness generation is crucial. Significant time and space have been devoted to create the awareness about the disease and its outcomes, risk profiles and disease prevention, and health promotion messages. TV channels regularly interviewed experts and held panel discussions. However, expert panels mostly comprised eminent health-care managers, clinicians, bureaucrats, and academicians with little or no experience of handling large scale disease epidemics. Surprisingly, Interactions with Public Health Specialists or Programme Managers with practical experience of managing disease outbreaks, disasters, and disease eradication initiatives were rare. Many a time, print media too displayed preference to controversies and miseries of people rather than success stories and best practices which would have promoted protective behaviors. These efforts appear to have resulted in creating fear complex and stigmatization. This pandemic has highlighted the need to orient our media about how they can play a constructive role in such crises.

Comprehensive Health Management Information System for COVID-19 is conspicuous by its absence. Currently, data pertaining to ILI and SARS flows to Integrated Disease Surveillance Program under NCDC and laboratory data to ICMR. Some states have their own databases. For efficient monitoring of the pandemic and for timely and locally appropriate response, one needs a standard well-defined set of indicators and centralized data base with access to experts so that data can be analyzed from different perspectives to inform policy and program. Similarly, Hospital Information Systems have been the most deficient component of hospitals caring for COVID-19 patients in most of the cities which have multiple health-care facilities. Patients were often found running from one hospital to another for admission in public sector hospitals. There was no centralized updated information in public domain on the number of vacant beds available in different hospitals in the city on any given day. Importance of accurate and timely information for health-care providers and patients has never been felt as much as it is appreciated now. Besides, much is desired in coordination between the public and private sector hospitals in terms of cross referrals, treatment protocols, fee for service, and adherence to guidelines.

Involvement/participation of public health community would immensely benefit public health action for epidemic control. Contributions of this community are pivotal in policy formulation at national level, its translation into program at state level, and its implementation at district level and beyond. We have already mentioned earlier that creation of dedicated public health cadre should be a priority for the country to address crises of this nature. The country has enormous expertise in public health and epidemiology. However, the extent to which this expertise has been utilized in policy formulation, epidemic monitoring, program development, and implementation has become a point of contention. There also is a thinking and anticipation in some circles that instead lamenting about their noninvolvement, the eminent members of India’s public health community should actively contribute by analyzing and communicating about the relevance and adaptability of successful global strategies and best practices. However, transparency and access to databases are essential to encourage such forums which can indeed greatly help the cause of the country.

To summarize, India’s COVID-19 pandemic has progressed to be the third largest in terms of confirmed cases despite early preemptive efforts, public health approach-based response and a strict national lockdown. Although it is
claimed that national lockdown managed to slowdown the spread of the virus, the negative socioeconomic impact, primarily affecting the poorer sections of the population, has drawn criticism in many quarters. In clusters and cities where early outbreaks occurred, serosurveys indicate higher infection prevalence and decline in new cases. Authors opine that though the response is comprehensive, certain elements in it need strengthening and they have been discussed.

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