**Health system response to Covid-19: an ethical imperative to build a resilient health system in India**

Vijayaprasad Gopichandran\*, Sudharshini Subramaniam\*\*

\*Assistant Professor, Department of Community Medicine, ESIC Medical College and PGIMSR, KK Nagar, Chennai 600078, Email: [vijay.gopichandran@gmail.com](mailto:vijay.gopichandran@gmail.com)

\*\*Assistant Professor, Institute of Community Medicine, Madras Medical College, Chennai 600003, Email: [sudharshini.subramaniam90@gmail.com](mailto:sudharshini.subramaniam90@gmail.com)

**Corresponding Author:**

Vijayaprasad Gopichandran

Assistant Professor

Department of Community Medicine

ESIC Medical College and PGIMSR

KK Nagar, Chennai 600078

Email: [vijay.gopichandran@gmail.com](mailto:vijay.gopichandran@gmail.com)

**Health system response to Covid-19: an ethical imperative to build a resilient health system in India**

**Background**

China reported cases of a severe form of pneumonia in December 2019 from the Wuhan city, Hubei Province. The virus causing this illness was identified as the novel Coronavirus 2019, which has now been christened as Covid-19. The illness is characterised by fever, cough, body pains and in a few cases progression to acute respiratory distress syndrome (ARDS) which marks a very serious damage to the lungs.(1–4) Apart from Wuhan, China, the virus has spread to 26 other countries as on 18 Feb 2020. Of these 26 countries, the cases of Covid-19 have been exported directly from China in 23. As on 18 Feb 2020, a total of 73,332 confirmed cases, 1870 deaths have been reported globally. The World Health Organization declared this as a Public Health Emergency of International Concern (PHEIC) on the 30 Jan 2020.(5)

India has instituted several measures to address the Covid-19 outbreak including airlifting of more than 600 people from Wuhan, screening them for the illness at the port of entry, quarantining them in special facility at Manesar, Haryana and opening an isolation ward for patients with symptoms of infection at the Indo-Tibetan Border Police Hospital in New Delhi. National Institute of Virology in Pune has set up a research unit which is trying to sequence the genome of the virus and isolate it for further research. Thermal screening to identify people with fever has been initiated at 21 airports and several seaports. Three confirmed cases of Covid-19 have been reported in Kerala, all of whom are being treated in an isolation ward after Kerala declared a state disaster. The contacts of all these confirmed cases have been traced and are under close surveillance for the onset of symptoms.(6)

While China is making intense efforts to contain the outbreak, Covid-19 threatens all the weak and developing health systems of the world including the Indian health system. The massive pandemics in recent times of Zika, Ebola and now Covid-19 provide warning signals for India to invest in building resilient public health systems.

**Is India prepared for an outbreak of this magnitude?**

In situations of infectious disease outbreaks of this magnitude there is a definite need for strong public health measures to contain it. The health system is overburdened, the human resources are burnt out and there is a scarcity of resources requiring difficult allocation decisions. In case of infectious diseases, the risk of person-to-person and source-to-person transmission is high. Well planned public health measures can effectively contain this transmission. The government has an ethical obligation to act in the spirit of stewardship to serve this cause.

While mass quarantine has been possible in China, which is an authoritarian state, it may not be as easy in more liberal democracies.(7) Moreover, mass quarantines are useful only if the quarantine is leak proof. In diseases which are of high infectivity potential, even a small leak in the quarantine can lead to wide spread of the infection. A mass quarantine of the proportions as seen in China is very difficult to achieve in India. Imposing such a restriction will warrant a suspension of constitutional rights. The Epidemic Diseases Act of 1897 has legal provisions to impose restrictions in times of outbreaks. This Act has also been heavily criticized of being draconian and not relevant in the current scenario in India.(8) A revised draft Public Health (Prevention, Control and Management of epidemics, bio-terrorism and disasters) Bill was tabled in 2017, but it still remains to be passed. There is a need for a sound legislation which is sensitive to social determinants of health and illness and supports containment of such outbreaks in a spirit of stewardship.

The ability of China to trace contacts and effectively put them under quarantine reflects the strength of its public health surveillance system. Many countries including India, do not have robust disease surveillance systems. The lack of a disease surveillance system throws open the country to severe vulnerability of attack by infectious diseases.(9) Establishing a robust disease surveillance system is essential to understand the course of emerging and re-emerging infections. India needs a strong and sensitive public health surveillance in order to keep track of outbreaks.

In China, in many places people are forbidden from coming out in public spaces without N95 face masks. The N95 masks are expensive. Therefore, access to these masks are limited. This greatly imposes restrictions on the movement of the poor, who cannot procure masks. In China the sale of masks went up so high, that there is a shortage of masks. The poor, who cannot access the masks, are also the people who most need to be able to go out work.(10) India has a strong capacity to manufacture masks. There are two major manufacturers of the N95 masks who export it for industrial use to Europe, Middle East and the United States. The Government of India banned the export of these masks in the first week of February 2020.(11) This ban was in the background of the Covid-19 outbreak and the possible need for these masks within the country. If there is an actual outbreak, India will need much more masks and personal protection supplies than these two companies can manufacture, for protecting its millions of health workers and billions of people.

Restriction of international travel has posed serious losses in trade between countries. Since the outbreak coincided with the Lunar New Year break in China, the immediate effects of the travel ban on economy has not been evident. However, this economic impact is slowly unravelling. Not only this, the economy of many countries depends on exports from China. These poorer countries are also affected by this outbreak. If India experiences such a massive outbreak, and travel bans are slapped on it, the economy will suffer seriously.

One of the major positives of the outbreak for China has been the rapid building of the new hospital, which China accomplished within a short span of 10 days. This infrastructure will continue to serve the population of Wuhan even after the outbreak. India may have to invest in stronger quarantine and isolation infrastructure to address such risks. Health care workers are at the vanguard of this battle against the Covid-19 illness. Their work contributes substantially to the treatment, recovery and containment of the illness. However, this also throws these frontline workers at risk of contracting the illness. During the SARS-CoV outbreak of 2002, health care workers were 21% of all the people who were affected. Death of a nurse during the recent Nipah virus outbreak in Kerala also created a lot of discussion on the protection of health care workers in these outbreak situations. The health care workers are often over-worked and are denied leaves of absence during outbreaks and public health emergencies. They are separated from their families for prolonged durations of time. The work pressure, restriction of liberties, the fear of infection and separation from their families puts them in a high level of psychological stress. The reciprocity principle demands that the state protect the interests of the health care workers who place their lives in danger in order to care for those who are infected.(12)

The importance of appropriate health journalism during the outbreak can never be overstated. There is a tight balance between communicating information about the outbreak and preventing panic among the public. A very popular newspaper in India carried a news article that covered a study on bats and bat hunters of Nagaland. While the actual paper had not link with the Covid-19 outbreak, the headline of the article read “Coronavirus: Wuhan institute’s study on bats and bat hunters in Nagaland to be probed”. This created a lot of confusion and panic during the sensitive time of the outbreak. The article wrongly mentioned about a secret research collaboration between India and China.(13) This goes against the journalistic principle of not creating panic during times of public health emergencies. The Covid-19 outbreak has given one more opportunity for India to realize that we are grossly underprepared for an outbreak of this magnitude.

**Importance of resilient health systems in times of global outbreaks: the Indian scenario**

India is on high alert at present to prevent Covid-19 from spreading rapidly within the country. All government hospitals are geared up to respond to the outbreak. When three cases of Covid-19 were reported to be imported from Wuhan into Kerala, the state declared a disaster and took all measures to curtail the outbreak.(14) Rather than strengthening the health system in a sustainable manner, they have set up make-shift isolation wards in the existing government medical college hospitals and have re-directed resources from other essential services to prepare services to provide quarantine and isolation facilities. The special isolation ward in medical college teaching hospitals have deprived beds for other patients. The cots, beds, IV stands, human resources and other resources that would usually be allotted to some other patients in the ward are being redirected to the isolation wards. The health systems in the states are not geared for this sudden and unexpected expense. The struggling public health system needs systemic strengthening before it can stand the test of an outbreak of such magnitude.

A resilient health system is one in which the institutions, personnel, policy makers and the important health system actors prepare for and effectively respond to crises, at the same time maintaining core system functions. There is a dire and immediate need to make the Indian public health system resilient. Health systems are complex adaptive systems and therefore improvements in multiple levels of the system can substantially add up and lead to improved resilience.(15)

The foremost important component of a resilient health system is a committed leadership and governance framework and financing mechanism that is responsive to crisis situations. The Indian health system is facing a gradual weakening of the public health infrastructure at the cost of a rising private health sector. The National Health Protection Mission – Ayushman Bharat (NHPM-AB), which is promoted as one of the largest state health insurance schemes in the world, provides for in-hospital treatment at secondary and tertiary level of care for the poor through both the public as well as the empanelled private sector health facilities. This runs the risk of further weakening the public health sector in favour of the private sector. Though there is provision for improvement of services at Health and Wellness Centres at the primary care level under the NHPM-AB, the budget allocation for this component is miniscule compared to the massive allocation for the hospital-based health insurance.(16) There is a need for specific budget allocation to preventive and public health activities in order for the system to be resilient to crises.

Another important function of the health system that provides it resilience is a strong health information system. Information is power, and there is a need for a strong surveillance system to actively know when an outbreak is happening. The International Health Regulations 2005 mandates every member country to have a robust surveillance system. The Integrated Disease Surveillance Project (IDSP) in India is functional, but weak.(17) The only outbreaks that India has detected and managed in recent times are the ones which are well known such as cholera, measles, chickenpox, dengue, malaria or the ones which are fatal such as the acute encephalitis syndrome of Bihar and Uttar Pradesh or the Nipah in Kerala. The IDSP and the infectious disease surveillance system are still weak and need strengthening. There is no reason to believe that outbreaks like Covid-19 are not happening in India. It is probably just that we are not picking them up due to a weak surveillance machinery.

India also faces a major health human resource crunch.(18) The Nipah virus outbreak in Kerala was a great lesson on how the health system can be stretched out during a dangerous outbreak. The hospitals and health systems were understaffed, and many contractual labourers had to be employed in the last minute. The health system at the time of such outbreaks will not only require hospital workers, but will also need people to carry out public health work in the community such as interviewing patients, their families, tracing contacts, implementing quarantine in communities etc. For the Indian public health system to become resilient, it needs to invest on human resources. A strong public health cadre with good remuneration and satisfaction and pride in their work is essential.

Making the health system resilient is an ethical imperative because resilient health systems prevent deaths during the crisis, prevent the rapid spread of illness, are prepared to address the crisis, continues to provide basic essential services at the time of crises, does not come to a standstill because of the crisis and is equitable and accessible to all.

**Reference:**

1. Chen N, Zhou M, Dong X, Qu J, Gong F, Han Y, et al. Epidemiological and clinical characteristics of 99 cases of 2019 novel coronavirus pneumonia in Wuhan, China: a descriptive study. Lancet [Internet]. 2020;6736(20):1–7. Available from: http://dx.doi.org/10.1016/S0140-6736(20)30211-7

2. Huang C, Wang Y, Li X, Ren L, Zhao J, Hu Y, et al. Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. Lancet. 2020;6736(20):1–10.

3. Wu JT, Leung K, Leung GM. Nowcasting and forecasting the potential domestic and international spread of the 2019-nCoV outbreak originating in Wuhan, China: a modelling study. Lancet [Internet]. 2020;6736(20). Available from: http://dx.doi.org/10.1016/S0140-6736(20)30260-9

4. Lu R, Zhao X, Li J, Niu P, Yang B, Wu H, et al. Genomic characterisation and epidemiology of 2019 novel coronavirus: implications for virus origins and receptor binding. Lancet [Internet]. 2020;6736(20):1–10. Available from: http://dx.doi.org/10.1016/S0140-6736(20)30251-8

5. World Health Organization [WHO]. Statement on the second meeting of the International Health Regulations (2005) Emergency Committee regarding the outbreak of novel coronavirus (2019-nCoV) [Internet]. Geneva; 2020. Available from: https://www.who.int/news-room/detail/30-01-2020-statement-on-the-second-meeting-of-the-international-health-regulations-(2005)-emergency-committee-regarding-the-outbreak-of-novel-coronavirus-(2019-ncov)

6. Bhargava B, Sudan P. Prepared for the coronavirus. The Hindu [Internet]. 2020 Feb 11; Available from: https://www.thehindu.com/opinion/op-ed/prepared-for-the-coronavirus/article30785312.ece

7. Hamblin J. A Historic Quarantine: China’s attempt to curb a viral outbreak is a radical experiment in authoritarian medicine. The Atlantic [Internet]. 2020 Jan 24; Available from: https://www.theatlantic.com/health/archive/2020/01/china-quarantine-coronavirus/605455/

8. Rakesh PS. The Epidemic Diseases Act of 1897: public health relevance in the current scenario. Indian J Med Ethics. 2016;1(3):156–60.

9. Klingler C, Silva DS, Schuermann C, Reis AA, Saxena A, Strech D. Ethical issues in public health surveillance: a systematic qualitative review. BMC Public Health [Internet]. 2017 Apr 4;17(1):295. Available from: https://pubmed.ncbi.nlm.nih.gov/28376752

10. Buckley C, Wee S-L, Qin A. China’s Doctors, Fighting the Coronavirus, Beg for Masks. The New York Times [Internet]. 2020 Feb 14; Available from: https://www.nytimes.com/2020/02/14/world/asia/china-coronavirus-doctors.html

11. Thacker T. Exports ban ties hands of N95 mask producers. The Economic Times [Internet]. 2020 Feb 12; Available from: https://economictimes.indiatimes.com/news/economy/foreign-trade/exports-ban-ties-hands-of-n95-mask-producers/articleshow/74091865.cms?from=mdr

12. Chang D, Xu H, Rebaza A, Sharma L, Dela Cruz CS. Protecting health-care workers from subclinical coronavirus infection. Lancet Respir Med [Internet]. 2020 Feb 16; Available from: https://doi.org/10.1016/S2213-2600(20)30066-7

13. Panneerselvan A. Journalism in the time of an epidemic. The Hindu [Internet]. 2020 Feb 10; Available from: https://www.thehindu.com/opinion/Readers-Editor/journalism-in-the-time-of-an-epidemic/article30778257.ece

14. ET Online E. Kerala declares coronavirus outbreak as state disaster. The Economic Times [Internet]. 2020 Feb 4; Available from: https://economictimes.indiatimes.com/news/politics-and-nation/kerala-declares-coronavirus-outbreak-as-state-disaster/articleshow/73910377.cms?from=mdr

15. Kruk ME, Myers M, Varpilah ST, Dahn BT. What is a resilient health system? Lessons from Ebola. Lancet [Internet]. 2015 May 9;385(9980):1910–2. Available from: https://doi.org/10.1016/S0140-6736(15)60755-3

16. Gopichandran V. Ayushman Bharat National Health Protection Scheme: an Ethical Analysis. Asian Bioeth Rev [Internet]. 2019;11(1):69–80. Available from: https://doi.org/10.1007/s41649-019-00083-5

17. Phalkey RK, Shukla S, Shardul S, Ashtekar N, Valsa S, Awate P, et al. Assessment of the core and support functions of the Integrated Disease Surveillance system in Maharashtra , India. BMC Public Health [Internet]. 2013;13(1):1. Available from: BMC Public Health

18. Nandan D, Agarwal D. Human resources for health in India: urgent need for reforms. Indian J Community Med [Internet]. 2012 Oct;37(4):205–6. Available from: https://pubmed.ncbi.nlm.nih.gov/23293430