**Containing COVID-19 by Quarantine or Isolation: The Ethical viewpoint**

**Dinesh Prasad Sahu,** Community Medicine and family Medicine, All India Institute of Medical Sciences, Bhubaneswar

**Aravinda Chinnadurai,** Community Medicine and family Medicine, All India Institute of Medical Sciences, Bhubaneswar

**Binod Kumar Patro,** Community Medicine and family Medicine, All India Institute of Medical Sciences, Bhubaneswar

**Abstract**

The whole of the world is now affected by the COVID-19 pandemic. Very less is known about the novel virus. There is no vaccine or treatment available to date. So the oldest public health tools like quarantine and isolation become the only available containment measures. However, these containment measures have some ethical issues which make it difficult for the authority to implement. Considering the huge population of India, it is difficult to keep all the suspected people in institutional quarantine and it also becomes unethical to keep many suspected cases together. This situation can be complicated as there is a chance of infection from one symptomatic infected person to the other uninfected persons in the quarantine. Again, home quarantine requires the obligation of the person and the society has also the reciprocal obligation to assist the person.

**Introduction**

Pneumonia of unknown cause was detected in Wuhan city of Hubei Province of China on 31 December 2019.(1) This virus identified as a type of Coronavirus was renamed as Corona Virus Disease-19 (COVID-19) on 11 February 2020. Globally, COVID-19 has claimed around 43000 lives and more than 8 lakh people.(2) Now, it is one of the biggest pandemic involving 180 countries across the globe. The World Health Organization (WHO) has declared the COVID-19 outbreak as a public health emergency of international concern (PHEIC) on 30January 2020. As of May 4, a total of 42000 confirmed COVID-19 cases were reported in India with more than 1500deaths.(3) Maharashtra reported the maximum number of cases followed by Kerala, Tamil Nadu, and Delhi. Most patients have had a travel history to countries that have high numbers of COVID-19 cases.

The COVID-19 cases are increasing in India. The Prime minister of India announced to enforce the country-wide lockdown from 25th March 2020. India focused on social distancing measure like lockdown only to buy some preparedness time for the country. Meanwhile, WHO emphasises on steps like quarantine, testing and treatment. In the earlier days of transmission, India started quarantine and isolation facilities for the abroad travellers and also a mandatory ‘Self Reporting Form’. A Thermal screening protocol has been adopted at all entry points such as airports, seaports, and borders. Isolation (home/hospital) is advised for a period of 14 to 21 days when the samples are sent for testing. People who have symptoms of fever, sore throat, running nose, dyspnea, and especially those who have returned from affected countries, or were in close contact with confirmed cases are being tested for COVID-19.

This illness is characterized by fever, cough, and shortness of breath, and in few cases progression to acute respiratory distress syndrome which marks serious damage to lungs.(4) The symptoms are very similar to other viral illnesses. Till date, there is no specific medicine or vaccine available to treat or prevent COVID-19. Currently, the best way to prevent illness is avoidance to this virus. At present the public health measures to contain the spread of the virus include Quarantine, Isolation, social distancing, travel restriction, and contact tracing and follow-up.

Quarantine and Isolation are one of the oldest public health tools. Historically, quarantine referred to a 40-days period during which ships were detained from entering a port while coming from an infectious disease prevalent area. The modern definition of Quarantine is “restriction of the activities of healthy persons or animals who have been exposed to a communicable disease”. This limits the freedom for a period equal to the longest usual incubation period of the disease. This may be of two types: absolute or complete quarantine, and modified quarantine. In modified quarantine, the selective or partial restriction of movement is done based on a known difference in susceptibility. Modified quarantine includes personal surveillance, medical supervision, and segregation of individual or group; or establishment of a boundary between uninfected and infected persons. Quarantine was found effective during 2003 SARS epidemic.(5)

“Isolation is the separation, for the period of communicability of known infected persons in such places and under such conditions as to prevent or limit the transmission of the infectious agent”. Isolation is particularly effective in interrupating transmission in case of early detection. The COVID-19 virus lke other influenza virus can transmit even before the onset of clinical symptoms. However, for COVID-19 the viral shedding was highest when the patient is truly sick.(6)

**Discussion**

India is facing challenges in containing clusters due to local transmission. In view of rising cases of COVID-19, the containment action plan has been provided to all states. Now the question arises; Is it effective to implement quarantine and isolation? Is large scale quarantine ethically correct?

Epidemics have huge societal cost. This is evident from SARS corona virus epidemic in 2003, which has an estimated cost of at least US$40 billion.(7) This huge cost of infectious disease may reason in favor of quarantine and isolation even if there is uncertainty regarding the effectiveness of the above-mentioned measures. While making decisions in conditions of uncertainty, the expected benefits and harms need to be assessed. In the epidemic situation, the country has an obligation to minimize the spread of the infection, but in a way that is respectful to the individual and community risk. The rights of individuals and communities should be given importance while implementing quarantine, isolation and social distancing.(8) Public health measures like quarantine that involves huge cost should be reserved for situations where it can make a reasonable difference to the consequences. In India, there are few difficulties in implementing the quarantine and isolation. Firstly, the trust deficit in public health systrm and secondly, the fear and stigma attached to thosewho are being quarantined or isolated. However, this can be dealt with increasing expenditure in public health system and more focus on positive messaging rather than creating fear.(9)

Few ethical issues make the quarantine problematic to implement. First, quarantine confines those individuals who are not infected as seen in the case of Ebola, where the entire village of Sierra Leone was quarantined. Second, quarantine increases the chance of being infected as they are kept as close proximity to those who have been infected, but asymptomatic. Spatial containment was instituted under a greater good of general protection as the primary ethical principle rather than asserting the individual risk. Restriction of freedom in quarantine and isolation is sometimes described as coercion which means forcing someone to do something. In public health, compulsion is often reserved for cases where public health issues are a threat to the country’s security.(10) Mathematical models have suggested that some emerging infectious diseases can be successfully contained at the initial stage when there is a high probability that an asymptomatic but contagious individual will be placed in quarantine.(11) For easy reference, case definitions are proposed by WHO, but there is a high chance of misclassification. This may also increase the burden of quarantine centers.

Quarantine is the absolute measure of containment for a infectious disease like COVID-19. In the otherhand, a good compliance to the quarantine rules is essential for effective home quarantine. Absence of the good compliance may force the county to opt for facility based quarantine. For a country of 1.34 billion, it is very difficult to adopt the facility based quarantine. That forced the country to its final option, that is lock down. Whereas, isolation requires a huge investment. Owing to the fact that India has very few infectious disease specialist and very few infectious disease hospitals, it will be difficult for a country like India to adopt huge scale isolation strategy. Social distancing is particularly useful for community containmant. Ethical principles needed to guide community containment practice to protect the populaton’s health. At the same time there is potential conflicts with individual rights aof liberty. Law enforcement for thi restrictive interventions should be limited to the actual risk of community transmission.

To bring about more positive values, morally permissible forms of coercion and compulsion may be adopted when there is significant severity associated with the infectious disease. However, proportionality should be maintained between the implemented public health measure and the threat to public health. In the pandemic of COVID-19, home-based quarantine should be preferred as the current trend of case fatality of the disease is less and disease epidemiology is unclear. In this current pandemic situation, Italy has expanded its home-based quarantine to the entire country.(12) In developing countries like India, where the resources are limited large scale quarantine should not be considered because its effectiveness is questionable. Reciprocity must be considered. If the society asks the individuals to remain at home for others' benefit, society has a reciprocal obligation to assist them in obligation. Quarantine and implementation should be implemented on the transparency principle, the public health authorities have an obligation to communicate justifying their decision.(13)

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