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## Quarantine for COVID-19 its Laws and Limitations

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### ABSTRACT

The Coronavirus disease began back in December 2019 as pneumonia without a definitive causative organism in the city of Wuhan, in Hubei province of China. This is the second pandemic that China has given birth to, the former being in 2003. Since the beginning of this pandemic, the Centre for Disease Control and Prevention (CDC) announced that this is primarily a droplet infection. Studies have also shown that show that the large virus-laden droplets are the main focus of infection and the CDC advices to maintain at least a two-meter distance between people and personal hygiene. Although quarantine carries a paradoxical history, a virus whose predominant mode of spread being respiratory droplets can be contained by simply staying indoors. The strategy of quarantine has its own demerits. Unless carried out meticulously, it involves the mingling of individuals who might have been exposed which undoubtedly increases the risk of diseases transmission. This in itself, is an act of negligence by the medical fraternity unless provided with proper facilities. Restricting the movement of populations is also an essential part of a strategy which comes at the cost of paralyzing the economy. Hospitals and other institutional quarantine facilities open up all over the globe in attempts to curb the spread of the novel coronavirus. Nevertheless, quarantine a strategy is a controversy because such a strict yet systemic approach can cause political, economic and socio-ethical unrest within a nation.



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transmission of disease. Often, this technique was practiced in an attempt to curb the spread of communicable diseases by implementing strict quarantine on those who may have been exposed to potential pathogens and the period of quarantine is prolonged until they no longer propose a threat to the unexposed (Conti, 2008). The ill-liberal execution of quarantine was one of the many ways by which mankind thought they could tackle the current pandemic situation of Covid-19, which was spreading ruthlessly around the globe.

### History of quarantine

The history of quarantine paradoxically indicates that mankind fails to gain an understanding from history itself. The practice of quarantine was first introduced in the year 1377, when the deadly plague hit Dubrovnik on Croatia's Dalmatian Coast, on learning that medicines are ineffective, people

### INTRODUCTION

According to the thesaurus, a quarantine is the strict restriction of the movement of living beings and goods confined to a particular period of time with which it is intended to put a complete stop to the

began to keep away from infected people and objects which could even remotely transmit the infection. But in due course of time, by the occurrence of yellow fever during the eighteenth century in the Mediterranean ports of France, Spain, and Italy, it was made compulsory by the governments to follow the principles of quarantine. On the contrary, the nineteenth century, had yet another, frightening scourge, cholera, that left mankind oblivious. The first wave of the cholera outbreak, had the health officials adopting strategies similar to those that had been used during the time of plague. Nevertheless, quarantine was irrelevant as a primary mode of prevention of cholera. Throughout the cholera epidemic, Sardinia, an Italian island, the one and only island to duck the repercussions of cholera, owing to the tireless monitoring of the army who received strict instructions to prevent any disembarkment onto the coast.

Furthermore, during 1918–1919, in a world that was torn apart by war, the multifaceted health surveillance systems, weren't able to contain the influenza pandemic, which hit the world not in a single wave but in three waves. The western health agencies implemented many known disease-containment strategies yet failed. Physicians suggested the use of certain preventive measures like respiratory hygiene and social distancing. Regardless of how these measures were put into motion too late and in an uncoordinated yet unorganized manner. Command over the situation by the government officials seemed to be focused on reassuring the public than putting in efforts to curb the transmission of the virus. Moreover, being in the midst of warfare, it took a toll on the communication systems, which further led to misinterpretation regarding the disease-control decisions and devices, such as face masks. The SARS pandemic that first took birth in the year 2003 from Guangdong, China, turned a new page in the history of quarantine. SARS was soon to spread throughout the nations owing to the fact that it was an air-borne pathogen and became a global threat.

This rapid transmission is to be held accountable for the high mortality rate. This swift relay of the disease is traced back to a lack of immunity in the general population and resistant to potent antivirals. The notion of quarantine is profoundly rooted in culture and it regains peak interest only during the course of epidemics. Throughout the course of the 2003 SARS pandemic, quarantining was the main plan of action coupled with other strategies, proved effective in stopping the further transmission in 3 months. For decades, the use of these practices have proven to be the foundation of responses

in the time of such dangerous epidemics. Nevertheless, the practice of quarantine and other measures for limiting the spread of infectious diseases has always been a controversy because such a systemic approach could raise political, economic and socio-ethical concerns and calls for a meticulous consideration between disease control and public interest. In a world where communicable diseases are showing exponential growth, a historical approach can provide clarity about the current implication of a valid public health strategy (Tognotti, 2013). According to studies comparing the influenza pandemic to SARS, the latter had a lower infectivity rate and a longer incubation period, which gave the authorities ample amount of time to institute a series of disease control strategies that were fruitful. No one anticipated that in a few years' time there would be the horrific turn of events, where the world would be at risk of yet another virus which would force nations to implement quarantine response to a tremendous health challenge.

### **Why consider quarantine?**

Quarantine is one of the terms which is being widely used during these days of the pandemic. To some, although it raises great unrest, it is one of the full-proof strategies adopted by the government officials by which they aim to curb the spread of Covid-19. Other terms being used throughout this time are social distancing and isolation. In contrast to quarantine, a person who has a contagious disease is isolated from those around them. This is done in order to limit the transmission as much as possible among of infection among the common masses. Social distancing, on the other hand, means maintaining adequate physical proximity between 2 individuals to prevent the spread of the virus. Avoiding public gatherings and staying indoors as much as possible is essential during these trying times. In the event of unavoidable circumstances, maintaining a safe distance of 2 meters around you and others can keep you safe. In general, any gathering should be dissolved or conducted over the web as it makes you a target of contracting the disease. In case of a suspected exposure to coronavirus, such individuals have been asked to self-quarantine themselves or are provided institutional quarantine. But the approach to any confirmed cases of corona-virus who happened to be at any mass gatherings requires a completely different approach. The health officials are to come up with meticulous contact-tracing and keep an immediate family in quarantine to closely monitor them for development of any disease-like symptoms (Wendy and Sinha, 2020).

### **Who is to be quarantined?**

A person or people who were exposed to the coronavirus at a public gathering or people who were possibly exposed during an international travel are most likely to be put to quarantine. A close contact is said to be someone who has been in close proximity with an infected person for a long duration of time. Coming in contact with the secretions or objects used by the patient can put an individual at risk for Covid-19. The public health sectors identify those in contact with a confirmed case of Covid-19 by a strict contact tracing strategy. The recommended duration of quarantine for Covid-19 is up to 14 days. The motive behind quarantine during such a pandemic is to break the chain of spread and prevent the disease from entering a stage of community spread.

### Where to quarantine?

Institutional quarantine is the most likely and most ensuring mode of quarantine, where those quarantined can be continuously monitored and evaluated for development of any disease like symptoms and can be further managed appropriately and in time without any further delay ([Dickens et al., 2020](#)). However, due to a sudden rise in the cases, some individuals are asked to home quarantine. Basic necessities for any institutional quarantine facilities in a community-based setting are as follows:

#### 1. The locality of such facilities

- Situated in the outskirts of a city
- Far from crowded and densely populated areas
- Well trained security personnel

#### 2. Functional infrastructure

- Rooms separated from one another with an occupancy of 5-10
- Each bed-space must be well separated from all sides.
- Well LIT, well-ventilated and electricity are some basic requirements.
- Potable drinking water
- Telephone to be provided
- Other services like mess services, laundry services and housekeeping services
- Properly covered bins as per bio-medical waste should be strictly maintained.
- Clean toilets to be provided

#### 3. Social support resources to be provided

4. Monitoring the contacts: contacts can be monitored daily for fever and respiratory symptoms.

### Risk assessment

As a result of the working of a quarantine camp, it is vital to assess the risk associated with contracting the Covid-19 infection. It takes into consideration biohazard risk precaution levels and is accordingly labeled as:

#### Low risk

These places are those that have the least contact with the quarantine center such as areas of the kitchen where food is cooked.

#### High risk

Areas that directly deal with treatment and testing of suspects and patients where the concentration of infectious particles are high. According to the above guidelines, areas with a high risk of transmission of the virus must be under strict vigilance according to the infection prevention control measures to prevent the further spread of infection from patients to health care workers and so on to the public.

### Establishment of infection prevention control (IPC) measures

With respect to the risk assessment strategy, the probability of spread of infection from those possibly infected in the quarantine facility to those uninfected can be estimated. A distinctive blueprint of the quarantine facility should be prepared, and the movement of health care and other personnel should be outlined meticulously. The precise enclosure should be maintained around the quarantine facility to prevent the entry of stray animals. Strict security should be maintained around the facility. To limit the further spread, it is ideal that all personnel entering the quarantine facility use the personal protection equipment (PPE) as per the instructions. Proper training and assistance should be provided.

Designated areas should be earmarked for PPE donning and doffing. The nursing staff assigned in these quarantine facilities, especially in the donning and doffing off stations should ensure that the sequence is followed properly. Another group of well-trained individuals are to be assigned to regulate the movement of staff entering the facility. A register is to be strictly maintained of all the details of those who enter or exit the facility. Nursing staff are also to ensure that all the people are labeled while entering the building. The quarantine facility should be decontaminated daily. Disinfectants should be used to sanitize the floors, toilets and the rooms used for quarantine.

## Biomedical waste (BMW) management

Biomedical waste disposal is a crucial step in proper disease containment. It is ideal that foot-operated dustbins be used for waste disposal. Not only should the PPE be worn according to the correct sequence while donning and doffing but also strict instructions to be followed while disposing of the PPE kit as well as mask and gloves used in yellow biomedical waste disposal bags. There should be a designated area outside the facility collection and disposal of these bags. The biomedical waste bags must be gathered periodically by those in charge of biomedical waste disposal. Regular disinfection with freshly prepared 1% hypochlorite solution should be done in at the sites of waste disposal. All personnel concerned with the quarantine facility should be well oriented to the measures of waste disposal, both general wastes and hazardous biomedical waste. The following sequence describes the method of generation of hazardous biomedical waste at a quarantine camp:

- Generation of hazardous waste
- Accumulation of bags
- Handling and storage
- Transport and disposal

## Discharge from quarantine facility

People who are quarantined can be discharged at the end of 14 days, which is also considered the end of the incubation period if their samples test negative on resampling. They should be advised to self-monitor themselves at home for the next 14 days. They are instructed to immediately report to the District Surveillance officer if they develop any symptoms suggestive of Covid-19. The District Surveillance Units and State Surveillance Units are provided with the contact details of those quarantined so that they can conduct active surveillance for the next 14 days under the Central Surveillance Unit, IDSP ([Guidelines for Quarantine facilities, 2020](#)).

## Limitations of institutional quarantine for covid-19

Quarantine has been the keystone in disease-control strategy since age-old times, including other strategies like isolation, sanitary cordons, fumigation, disinfection, and strict regulation and restriction of the movement of infected persons. Although quarantine and travel bans are the responses against newly emerging infectious diseases, these primeval tools are usually of little importance for infections occurring herein the medieval period, and if imposed in a

haphazard manner, they could end up being counterproductive. Institutional quarantine facility as an approach to break the chain of spread has its own drawbacks as it involves people who were exposed and people who might have been exposed to be quarantined together, increasing the chances of disease transmission. Studies show that the healthy are getting infected from a few in quarantine. This could be due to the inadequate measures taken up by those in the authority of managing such institutional quarantine centers.

Another downside of such an institutional facility is the lack of adequate manpower and infrastructure. Yet another stumbling block in the path of such an approach is the unwillingness of those who have to be quarantined due to the fear of further exposure to someone who may be asymptomatic yet in the infectious period. Due to these pitfalls, there is no fool-proof line of action when it comes to any such institutional quarantine facility. After all, mankind is bound to learn from their mistakes, especially during the period of a pandemic, a trial and error method is our best teacher. Nevertheless, our main aim being to curb the further spread of the disease and since it is observed that there are certain loopholes to the approach of such institutional quarantine facilities, other methods of quarantine can be tried, and one such approach is home-quarantine ([Suraksha, 2020](#)).

## What is home quarantine?

'Home quarantine' is an upcoming terminology which is being used relentlessly in this era of the pandemic. It fundamentally refers to quarantining yourself at home and avoiding contact with anybody else, if you have developed, or been exposed to an infection disease, until the infectious period or incubation period of the disease is over, or until you know that you have not contracted the illness to which you have been exposed to. The advantage of this methodology is the ability to staying at your own place, where you can rest and recover in the convenience of your own house.

## Who should be home quarantined?

According to the Government of India, there has been a revised protocol as to who all needs to be home quarantined. Home quarantine is applicable to:

- Those who were in contact of a confirmed case of Covid-19
- Family members of a confirmed case of Covid-19
- Asymptomatic confirmed case of Covid-19



- Family quarantine for an entire family who has tested positive for Covid-19
- Anyone who has travel history from a red zone

A contact is someone who has been in association with an infected person or has been exposed to a contaminated environment within a 14-day period before the onset of illness or during the 14-day incubation period.

A contact of a Covid-19 patient is:

- Someone from the same household
- Someone in direct physical contact with a Covid-19 patient's infectious secretions without recommended personal protective equipment (PPE) or with a possible breach of PPE
- Someone who travelled with a Covid-19 patient.

### Duration of home quarantine

The duration of home quarantine is also for 14 days irrespective of contact. These individuals are instructed to reach out to medical services in the unlikely event of developing any disease-like symptoms ([Guidelines for home quarantine, 2020](#)).

### Home quarantine and mental health

Life during the lockdown period was nothing but a roller coaster ride for the people of the world. Nations all over the globe were affected by majorly. Taking into consideration the uncertainty that Covid-19 has brought along with it, the mental health of humanity was at stake. People continued to live indoors, coping with the fear and anxiety of contracting the disease. Studies conducted showed that living in isolation from the world can trigger various mental health conditions producing confusion and frustration. This can be aggravated by inadequate general and financial supplies. To negate this effect of quarantine, individuals shouldn't be confined indoors for periods more than necessary and must be provided with proper instructions for their well-being. They should also be updated regarding the current situation so that they can be prepared with food and supplies ([Samantha et al., 2020](#)).

### CONCLUSION

To summarize, quarantine is a way of preventing the spread of the disease and by self isolation helps a person to recover from the effect of the virus or pandemic. However unpleasant an experience it may be quarantine can be useful in slowing down the

spread of the pandemic. General quarantine measures entail self-isolation of up-to 14 days with the inclusion of some form of a Covid-19 test towards the end of this period. Research has shown that fewer fatalities were observed in quarantine conforming cities than in cities where no measures were taken. There is some indication that the second waves of the pandemic, currently in full swing in most of Western Europe and North America will peak on or around the Christmas and New Year period, traditionally a time of large gatherings and family meetings. If festivities go ahead as 'normal', then it is highly likely that the second wave of the pandemic will not abate anytime soon. Yet another well-known phrase to sum up the survival of the human race during this Covid pandemic would be 'Prevention is better than cure'.

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### Conflict of Interest

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