

## Review Article

# Lockdown- of the people, for the people and by the people

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## ABSTRACT

COVID-19 pandemic affected almost all countries in world (except North Korea). Pandemic originated in Wuhan and spread its wings across the world. Many countries started taking war foot measures to control spread of pandemic, isolate its patients and impose lockdown over its population. People from various countries understood and the governments made people understand the effects of pandemic COVID-19. Lock down was implemented several times in history of mankind. The Plague pandemic, Cholera, Influenza pandemic of 1918 and SARS 2002 pandemic are known situations where lockdown was implemented to contain the damage caused. COVID-19 is probably the first time in history of mankind where lockdown was implemented in most of the world countries at same time in a never before seen magnitude. Number of countries under lockdown, number of days of lockdown and number of deaths caused by COVID-19 are never seen in history.

**Keywords:** COVID-19 pandemic lockdown, Lock down in past, Lockdown, Shutdown

## INTRODUCTION

Lockdown “an emergency measure or condition in which people are temporarily prevented from entering or leaving a restricted area or building (such as a school) during a threat of danger”.<sup>1,2</sup> The danger may be a war, pandemic, leakage of toxic material, civil disturbance and natural calamity. There are many instances where lockdown was imposed on mankind. The idea behind lockdown is to protect and prevent people from harm.

Lockdown dates back to 1600 when plague pandemic has first caused lockdown in certain parts of world, later it was cholera, influenza and SARS which has caused lockdown in certain parts of the world. The biggest of all is COVID-19 lockdown in 2020 that has made many countries in world to implement lockdown to prevent spread among its people.

Lockdown and lockdown drills were commonly performed in school to protect kids from threatening situations.<sup>3,4</sup> Lockdown has levels for implementation. Level-1 if the threat is outside the school, level-2 if thereat is inside building and Level-3 if threat is imminent and dangerous.<sup>1,2</sup> Lock down in mass contamination emergencies is two types-controlled lockdown and total lockdown.<sup>3,4</sup>

## CONTROLLED LOCKDOWN

**Exit only:** Area is secured and exit personnel would be screened.

**Entry only:** Area is secured and entry personnel would be screened.

**Exit and entry:** Area is secured and both entry and exit personnel are screened.

**Partial lock down:** As directed by governments few personnel would be allowed thru established security check points.

**Department lockdown:** Personnel pertaining particular departments or sects or groups or area are under lockdown.

## TOTAL LOCKDOWN

Highest level of security. No one is allowed in or out from the area.

## DISCUSSION

### *Plague pandemic lockdown*

European plague pandemic which lasted for almost hundred years in different parts of Europe. The magnitude and impact of plague on Europe and America was immense. Thousands of people died during this tenure. The famous “is plague contagious” article that was published in the Boston medical and surgical journal gives us a sneak peek into magnitude of disease and impact of the pandemic on Europe.<sup>5</sup> It was first noticed in London in 1603 when thirty-six thousand people fell ill and it was introduced from Ostend (Belgium). In 1625 the origin is from Denmark and thirty-five thousand Londoners lost lives. It again has its roots from Leyden (Netherlands) in 1636 and thirty thousand Londoners died. Finally, in 1665 it was rampant and only in London sixty-eight thousand people died, there was no information about the numbers in country side. There were still “uh and ah” about contagious nature of plague and the result was in 1720 it resurged in Marseilles (France) and it took sixty thousand lives away, finally in at Mesina (Italy) it took forty-three thousand lives in a span of nine days. It was Dr. Tully who vouched for contagious nature of disease and finally physicians conceived that it was contagious and laws of quarantine were established. Later in 1690’s when it recurred in Malta there were still some difference of opinion regarding transmission and the result of which is one sixth of population perished before they realised the facts.

Initial days of plague dates back to 1347-1352 in Florence and Sicily which was found among sailors and cargo arriving from east Mediterranean countries. First laws of quarantine were established in Croatia. They have started isolating ships by screening for symptoms and barred vessels which carried suspected infection from entering the ports. When the flow of vessels was increased, they just shut down the port to prevent infection similar to lockdown.<sup>5,6</sup> Forty days was chosen the duration for isolation. There were many theories about duration. It was thought forty day may be due to Hippocrates theories or Pythagorean theories or it may be due to biblical travail of Jesus. Later after advancements in medicine and community health and

research we now know the principles of isolation and quarantine.<sup>5,6</sup>

### *Cholera- lesson well learnt from plague*

Cholera emerged during times of increasing globalisation. The Asiatic disease spread to Europe in 1830 and America in 1832. Health demonstrators were cautious and they have imposed strict measures from barring ships to entering ports to stopping free movement of people in communities. The spread of Cholera was however controlled and later health administrators realized that quarantine and lockdown were irrelevant in transmission of Cholera.<sup>6</sup>

### *Influenza lockdown United States of America*

The influenza pandemic 1918 or the Spanish flu. The most dreaded flu attack in history of United States of America with 6,75,000 deaths recorded in young age group individuals.<sup>7</sup> The military personnel were the first to get infected followed by civilians. The response was initiated by many cities in United States of America. The measures taken were banning public gatherings, closure of schools and colleges, workplace measures like work thru telephone, alternate day shifts for employees, using face masks was popular.<sup>7-9</sup> Isolation of ill and quarantine of exposed was stringent during the flu epidemic of 1918. Preventive measures like social distancing and contact tracing were stringent. From studies it took 8 weeks continuous lockdown to flatten the curve rather than intermittent lockdown.<sup>8-12</sup> New York, Philadelphia imposed 8 weeks of continuous lockdown that resulted in control of pandemic. San Francisco and St. Louis saw a second wave since they planned for intermittent lockdown. Many civilians were frustrated and felt trying idleness during periods of lockdown. From movie theatres to vendors everything was asked closed following orders of lockdown.<sup>13</sup>

### *SARS lockdown*

SARS-CoV severe acute respiratory distress syndrome corona virus outbreak in china occurred in 2003. Later it spread to Taiwan, Hong Kong, Singapore and Canada (Toronto).<sup>14</sup> Almost 9000 people were affected in this outbreak in different parts of world. WHO declared it as epidemic and initiated measures to handle. Partial lockdown was implemented in Singapore.<sup>14-16</sup> This epidemic spread to western world to Canada through tourists who have visited Hong Kong. Canada followed the principles of isolation of ill and quarantine of contacts and social distancing.

### *COVID-19 lock down 2020*

Born in Wuhan province of China and spread it wings to Thailand 13 January 2020, later to Japan, South Korea, Nepal, Hong Kong, Australia, France, Italy,

Germany, United Kingdom, United States and what not the whole world in a span of eight weeks. On 30<sup>th</sup> January WHO declared COVID-19 as PHEIC (Public Health Emergency of International Concern).<sup>17,18</sup> COVID-19 has created tremors among all nations of world.<sup>19,20</sup> World is shaken with its impact in health sector. Victims range from Prince Charles, Boris Johnson, Tom Hanks to even common rural people.<sup>21,22</sup> Measures implemented to control the spread of COVID-19 include isolation of infected patients, quarantine of exposed people, social distancing, community isolation. Lockdown was implemented in many countries to prevent community spread of COVID-19. China implemented lockdown first in Wuhan then followed rest of the world to prevent spread of pandemic. Government of India is implementing forty-day national lockdown. Almost all countries in world were infected (except North Korea). International cruise ships Diamond Princess and M. S. Zaandam were also infected.<sup>23</sup>

The source of origin of pandemic is still controversial. Speculations are that it has originated either in lab from Wuhan or wet markets of Wuhan.<sup>24</sup> There are no clear guidelines still on management of COVID-19. The concept of great, mighty and powerful nations was no longer valid. World is divided only into COVID-19 affected and unaffected. Even mighty nations had to bow down to save its people. SARS-CoV and COVID-19 are from same family of viruses. But the pathogenicity and transmission are different. SARA-CoV spread from patients those who were severely ill whereas in case of COVID-19 reports state that its transmitted from asymptomatic and mildly symptomatic patients also.<sup>25,26</sup>  $R_0$  is an indication of the transmissibility of a virus, representing the average number of new infections generated by an infectious person in a totally naïve population. The average  $R_0$  of COVID-19 to be 3-28 and median  $R_0$  to be 2-79, higher than that of SARS.<sup>27,28</sup>

Principles of control of a pandemic are early recognition, isolation, reporting, and surveillance of episodes of ARD (acute respiratory disease) of potential international public health concern. Preventive measures include usage personnel protective wear like face masks, hand sanitizers, handkerchiefs, cough etiquette, respirators, eye protection and social distancing measures of at least one metre.<sup>29-31</sup> Health care workers should use Personnel protective wear. Isolation of patients in a single room, if not possible isolating cohort of patients with similar aetiologies in a common hall. Quarantine of exposed people.<sup>29-31</sup> Efficiency of lockdown in control of COVID-19 is controversial.<sup>32,33</sup> Lockdown is a useful tool to delay the peak or high point of a pandemic.<sup>33</sup> Studies report that even though lockdown can only delay the peak, its efficacy in prevention cannot be ruled out since community spread decreases lot and thus magnitude of new cases could drastically decrease. The various levels of lockdown and its impact also found to have great effect on overall transmission.  $R_0$  an indication of transmissibility of virus during moderate lockdown is 2,

during hard lockdown is 1.5 and when lockdown is weaned off it resumes at 2.4. whereas, if lockdown is slowly weaned off and social distancing measures and isolation of new cases in continued the  $R_0$  falls to 2.<sup>33</sup> The delay in peak which facilitates time advantage to healthcare and government authorities can be used to prepare healthcare system for any magnitude of pandemic, educate people about the preventive measures and social distancing norms, Since incubation period of most of ARD (acute respiratory distress)viruses is two weeks this lets asymptomatic cases to be negated from community. Until cure for a pandemic is discovered it is very difficult to contain it.

### ***Impact of lockdown on economy***

Since most of major players in world economy are under lockdown. This is a truly global crisis as no country is spared. Countries reliant on tourism, travel, hospitality, and entertainment for their growth are experiencing particularly large disruptions. Emerging market and developing economies face additional challenges with unprecedented reversals in capital flows as global risk appetite wanes, and currency pressures, while coping with weaker health systems, and more limited fiscal space to provide support. Moreover, several economies entered this crisis in a vulnerable state with sluggish growth and high debt levels. For the first time since the great depression (2009) both advanced economies and emerging market and developing economies are in recession.<sup>34,35</sup> For this year, growth in advanced economies is projected at -6.1 percent. Emerging market and developing economies with normal growth levels well above advanced economies are also projected to have negative growth rates of -1.0 percent in 2020, and -2.2 percent if you exclude China. Income per capita is projected to shrink for over 170 countries. Both advanced economies and emerging market and developing economies are expected to partially recover in 2021.<sup>34,36</sup>

### ***Advantages of lockdown***

Delay in maximum magnitude of cases, lessen the strain on health care sector and use the time to strengthen healthcare, drop in pollution and people get time to spend with their families.

### ***Disadvantages of lockdown***

Bow to economy and jobs, pause in school and college education, mental health threat, democracy and freedom curtailed, efficacy of lockdown still uncertain and social unrest.

## **CONCLUSION**

Lockdown is not a novel phenomenon. It has been in past and present and it may be in future also. The unpreparedness of mankind to handle pandemics clubbed with virulence of pathogens, the modality of spread of

these pathogens left mankind no other option rather than coping with preventive measures. Scenario would have been different only if we had a cure for the pandemic.

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