

# From First Reported Covid-19 Case to Lockdown: Was Response of Govt. of India Evidence Based or Reactive?

**Running Title:** First Covid-19 Case to Lockdown-GOI Response

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## Abstract

This Editorial describes chronological events from WHO situation reports and Travel Advisories issued by Govt. of India to understand if Indian response was based on facts and evidences or it was reactive, draconian.

**Keywords:** COVID-19, Pandemic, Pandemic Response, Draconian

Recently, professionals have started to criticise Government of India (GoI) for its actions to control the coronavirus disease-2019 (COVID-19) pandemic. Some label the actions as draconian and consider that the responses were reactive, with little preparedness and investment in health systems, and did not involve community engagement and empowerment [1]. Some authors also feel that the response to the epidemic was not data driven; there was lack of reliable early warning, alert and response system; inability to mount transparent containment measures; lack of community engagement for self-deferral and isolation; and an overdependence on quarantining measures etc. [1].

I place below some of the evidences in chronological order, since the onset of the pandemic, to better understand whether actions taken by the GoI were based on

some evidence or were these in fact, draconian. When salient features of the relevant World Health Organization (WHO) situation reports and travel advisories from GoI are compiled, it can be observed that the response of GoI was indeed prompt and based on the global evidences that were becoming available during that period; as opposed to a reactive one.

In the following sections, first evidences from WHO situation reports are presented. It is followed by the response of GOI and the relevant travel advisories, chronologically.

1. **WHO's first situational report on 21<sup>th</sup> January 2020** [2] documented the highlights since 31 December 2019, when first case was reported from Wuhan China, till 20 January 2020. As per this report, within three days, from

31 December 2019 to 3 January 2020, a total of 44 cases of pneumonia of unknown aetiology were reported to WHO. The Chinese authorities identified and isolated a new type of coronavirus on 7 January 2020. By 12<sup>th</sup> January, China shared the genetic sequence of the novel coronavirus with the entire world, to develop specific diagnostic kits. By this time, National Health Commission China reported that the outbreak is associated with exposure in a seafood market in Wuhan City. In the subsequent week, from 13<sup>th</sup> January to 20<sup>th</sup> January, cases were reported from Thailand, Japan and the Republic of Korea, all linked epidemiologically to Wuhan. By 20<sup>th</sup> January 2020, there were a total 282 confirmed cases from four countries. These four countries belonged to two WHO regions, of which one country Thailand was from the South-East Asia Region.

The WHO's response to this situation was swift. It activated incident management system (2<sup>nd</sup> January 2020), developed surveillance case definitions, and interim guidelines for health care settings and community. Additionally, travel advice for international travel was updated.

From January 14<sup>th</sup> onward, China started installation of infrared thermometers at various ports of entry and exit. **However, as mentioned earlier, before this could be done, confirmed cases from 3 other countries were already detected and linked to Wuhan.**

The Chinese response to curb virus exit from the country being delayed, was the first nail in the coffin. It seems plausible, that after detection of first case of unknown aetiology, it may take time to detect the virus and take appropriate actions. Yet, within very

short period, China communicated about the virus to the entire world.

### International Response

Thailand activated its public health response after detection of the first case. It started fever screening of travellers from all direct flights from Wuhan, China to the Suvarnabhumi, Don Mueang, Chiang Mai, Phuket and Krabi airports; with the screening protocol at Krabi Airport started on 17<sup>th</sup> January 2020. Risk communication guidance was also developed to manage people with related symptoms, returning from the affected area in China.

Japan also initiated many actions. Quarantine and screening measures were enhanced for travellers from Wuhan city at the point of entries since 7<sup>th</sup> January.

The government of the Republic of Korea also scaled up the national alert level from Blue (Level 1) to Yellow (Level 2 out of the 4-level national crisis management system). From January 3<sup>rd</sup> onward, it strengthened surveillance for pneumonia cases in health facilities, nationwide, and enhanced quarantine and screening measures for travellers from Wuhan at the point of entries (PoE).

### WHO Recommendations

The WHO advised general measures to reduce the risk of acute respiratory infection. For international traffic, it advised exit screening for areas with ongoing transmission of the novel coronavirus or the 2019-nCoV (People's Republic of China at that time). Risk screening included potential exposure to high-risk contacts or to the presumed animal source, medical examination of symptomatic travellers, followed by testing for 2019-nCoV, and isolation and treatment of confirmed cases.

Although, based on the evidences from the past outbreaks the WHO did not consider entry screening an effective strategy, nevertheless, it supported risk communication and provided information to travellers from affected countries or areas to reduce the general risk of acute respiratory infections, and to seek medical attention early if they develop symptoms compatible with the infection.

The WHO further supported its observation with actual data of current outbreak of the 2019-nCoV, wherein a number of exported cases were detected through entry screening implemented by some countries. Thus, it recommended screening for symptomatic cases through temperature screening at Point of Entry, and subjected these cases to medical examination and laboratory tests for confirmation. Also, it cautioned that temperature screening to detect potential suspect cases at Point of Entry may miss travellers incubating the disease or travellers concealing fever during travel and may require substantial investments.

The WHO recommended a focused approach by targeting direct flights from affected areas for entry screening and dissemination of risk communication messages. At that point of time, **WHO advised against the application of any restrictions of international traffic based on the information available on this event by that time.**

In summary, by the time of WHO situation report -1, n-corona virus was identified with its genetic sequence, it had already spread out of China before exit screening at the ports of exit was established, however, **as WHO had ruled out person to person transmission based on the**

**initial investigation reports, the entry screening at the other countries remained restricted to Wuhan and subsequently other affected countries of China.**

### **Indian Response and Travel Advisories by GoI**

Based on the information available, GoI initiated actions very early that is at the release of first evidence of transmission to four countries outside China. **On 17<sup>th</sup> January 2020, the first travel advisory [3] was issued,** based on the WHO recommendation of low risk of transmission and no evidence of human to human transmission. This travel advisory was for travellers to and from China, particularly Wuhan. It included general precautions and to report any respiratory illness. **It advised sick patients not to travel, however there was no restriction on travel for apparently healthy persons.**

**This travel advisory was revised on 25<sup>th</sup> January [4] based on the data that became available within one week.** By this time, in addition to cases being reported from 29 provinces of China, there were cases from Hong Kong, Macao, Taiwan, Thailand, Japan, South Korea, United States, Vietnam, Singapore, Nepal and France. In view of this rapid surge in cases, GoI advised to **avoid all non-essential travel to China.** In addition to other general advisories, it directed for **self-monitoring for one month after return from China.**

2. **The first case from India was reported in WHO situation report 10 [5], as per data till 30<sup>th</sup> January 2020.** Even by this date when globally there were 7818 confirmed cases, and 18 countries outside China had reported confirmed cases, WHO's position was that human to human transmission outside China is limited.

WHO's three-pronged strategy by this time focussed on building a network of referral laboratories, building national capacity for diagnostics and ensuring test availability. One of the WHO's strategic objective was to limit human to human transmission including reduction of secondary infections among close contacts and health care workers, and prevent further international spread from China.

Thus, despite 18 countries outside the China having reported cases within one month and an evidence of human to human transmission, travel advisory still remained focussed on China.

**As per WHO situation report 15 [6], by 4<sup>th</sup> February 2020**, there were a total of 20630 confirmed cases globally, with 159 confirmed cases in 23 countries in five WHO regions. By this time there were only 3 cases in India.

#### **Indian Response and Travel Advisories by GoI**

**In the next advisory, on 5<sup>th</sup> February [7]**, GoI advised Indian travellers to **refrain from travelling to China**. This advisory was written in capital letters to lay due emphasis. It also cancelled **e-Visas for all foreign nationals travelling from China**. Guidelines to **quarantine people who returned from China** also appeared in fresh directives.

3. **By 25<sup>th</sup> February 2020 (WHO situation report - 36 [8])**, there were 80239 confirmed cases globally, with 2459 confirmed cases from 33 countries. While there were 37 cases from Thailand, there were still only 3 cases from India.

#### **Indian Response and Travel Advisories by GoI**

**On 26<sup>th</sup> February [9]**, in addition to previous guidelines, Indian citizens were advised to **refrain from non-essential travel to Singapore, Republic of Korea, Islamic Republic of Iran, and Italy**. In addition to China, quarantine on return was extended for travellers returning from these countries as well. Self-observation for sickness for a period of 28 days was extended to all travellers who had returned from affected countries.

4. **By 2<sup>nd</sup> March 2020, (WHO situation report - 42 [10])**, there were 88948 cases globally with 8774 cases from 64 countries, from all six WHO regions. Cases in Thailand increased to 42, however, cases in India remained at 3. **At this stage, WHO advised that containment is the top priority for all countries. It advised to tailor fit the response as per the transmission scenario in the country.** WHO Director General remarked that early, robust measures are key to saving lives and halting transmission.

#### **Indian Response and Travel Advisories by GoI**

**On 2<sup>nd</sup> March 2020**, advisory [11] to refrain from travel was extended for Republic of Korea, Islamic Republic of Iran, Italy and Japan, in addition to China.

5. **By 4<sup>th</sup> March (WHO situation report - 44 [12])**, globally, there were 93 091 confirmed cases, with 12669 confirmed cases in 76 countries outside China. While cases in Thailand had increased to 43, India also doubled its cases to 6. Outside China, the case load was maximum in Republic of Korea, Japan, Singapore and Malaysia (Western-Pacific Region - WPR), Italy, France, Germany and Spain

(Europe Region - ER), Thailand (South-East Asia Region - SEAR), Islamic Republic of Iran and Kuwait (Eastern Mediterranean Region - EMR), and USA (region of Americas)

### **Indian Response and Travel Advisories by GoI**

**From 5<sup>th</sup> March 2020** [13], travellers from Italy or Republic of Korea required a certificate of 'COVID-negative', to enter India.

6. By **9<sup>th</sup> March (WHO situation report - 49** [14]), global case toll increased to 80904, with 28673 confirmed cases from 104 countries. There was a marked rise in cases from many countries, across various regions. This included a rise of cases to 43, in India. Most of these cases were reported to be due to local transmission.

### **Indian Response and Travel Advisories by GoI**

**On 10<sup>th</sup> March** [15], when more than 100 countries across the world had reported cases of COVID-19, GoI advised Indian citizens to avoid non-essential travel abroad, and strongly advised them to refrain from travelling to China, Italy, Iran, Republic of Korea, Japan, France, Spain and Germany.

In an additional advisory [16], all incoming international passengers were advised to self-monitor their health. Passengers with travel history to Thailand, Singapore, Malaysia, France, and Spain, in addition to the already enlisted countries, were advised to undergo a self-imposed quarantine for 14 days from the date of arrival. It suspended all existing visas with some exceptions.

7. By **10<sup>th</sup> March (WHO situation report - 50** [17]), global cases

increased to 113702, with 32778 cases outside China in 109 countries. At this stage, WHO Director-General commented (9<sup>th</sup> March) that the threat of the pandemic has become very real. At this stage, 45 State Parties informed WHO of additional health measures against countries other than China. Preliminary evidence for travel measures was uncertain and did not favour any 'one position': restriction or no restriction. However, WHO maintained its position that measures that restrict the movement of people during this outbreak should be proportionate to the public health risk, short in duration, and be reviewed regularly as more information about the virus, disease epidemiology and clinical characteristics become available.

### **Indian Response and Travel Advisories by GoI**

**On 11<sup>th</sup> March** [18] in addition to above advisories, all incoming travellers including Indian nationals were informed that they will be quarantined for 14 days on their arrival in India.

### **Was the Response of Government of India Reactive?**

The outbreak of the emergent severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) disease (COVID-19) in China was brought to global attention and declared a pandemic by the World Health Organization (WHO) on March 11, 2020 [19].

The severe acute respiratory syndrome (SARS) outbreak in 2003 was contained by means of syndromic surveillance, prompt isolation of patients, strict enforcement of quarantine of all contacts, and in some areas a top-down enforcement of community quarantine. By interrupting all human-to-human transmission, SARS was effectively eradicated [20]. The

COVID-19 outbreak claimed more than 82 000 confirmed cases of the disease and more than 2800 deaths in 2 months [20].

Although there are striking similarities between SARS and COVID-19, it was considered at that time that the differences in the virus characteristics will ultimately determine whether the same measures for SARS will also be successful for COVID-19. COVID-19 differs from SARS in terms of infectious period, transmissibility, clinical severity, and extent of community spread. *Knowledge at that point of time was that — even if traditional public health measures are not able to fully contain the outbreak of COVID-19, these measures will still be effective in reducing peak incidence and global deaths.* Exportation to other countries may not result in rapid large-scale outbreaks, if countries have the political will to rapidly implement counter-measures [20].

### Initial Evidence about Quarantine & Lockdowns

China was the first and worst hit country. In response to the COVID-19 outbreak, China imposed a lockdown on the population of Wuhan as well as the entire Hubei province. This stringent measure was more intensive than the traditional public health measures that were taken in the past to contain epidemics. An analysis of confirmed domestic and international COVID-19 cases - before and after lockdown measures revealed **that there was significant decrease in growth rate and increased doubling time of cases, which is most likely due to Chinese lockdown measures.** A more stringent confinement of people in high risk areas seemed to have a potential to slow down the spread of COVID-19 [21].

Researchers in Italy also recommended strict quarantine measures to curb COVID-19. The larger the household size and amount of time spent in the public, the longer the lockdown period needed [22].

The argument that — should health authorities place potentially exposed individuals into a quarantine setting where their separation from others can be enforced?, or should authorities simply let them go home, ask them to avoid contacts, and monitor them for COVID-19 symptoms through phone calls or health-care visits?, was discussed in detail by Peak *et al* [23] and subsequently by Bauch and Anand [24]. In a setting where at least 75% of infected contacts are identified within 12 hours, on average, individual quarantine could contain an outbreak, whereas active monitoring could not [23]. This analysis assumed that testing is rapid and widely available, which is not true for many places. Researchers were of the conclusion that to prevent exponential growth in the number of cases, public health authorities must trace contacts of infected cases and reduce their chances of causing further spread faster than the virus propagates through the network of personal contacts. Thus, intrusive action in the early stages of a pandemic might reduce the time period and the number people these measures need to be applied to [24]. Detection of 75% infected contacts and active monitoring, both are resource intensive and require good health systems. In situations of frail systems, one of the options is to restrict movement of the population so that it does not transmit infection.

In the Indian setting, a mathematical model-based approach was followed. It was assumed that symptomatic quarantine would identify and quarantine 50% of symptomatic individuals within three days of developing symptoms. In an optimistic scenario of the basic reproduction number ( $R(0)$ ) being 1.5, and asymptomatic infections lacking any infectiousness, such measures would reduce the cumulative incidence by 62%. In the pessimistic scenario of  $R(0)=4$ , and asymptomatic infections being half as infectious as symptomatic, this projected impact falls to 2%. It was recommended that Port-of-

entry-based entry screening of travellers with suggestive clinical features from COVID-19-affected countries, would achieve modest delays in the introduction of the virus into the community. Once the virus establishes transmission within the community, quarantine of the symptomatic may have a meaningful impact on disease burden. As a public health measure, health system and community preparedness would be critical to control any impending spread of COVID-19 in the country [25].

### **Indian Response to Pandemic**

As is evident from the chronological events described above, GoI was very quick to initiate actions against COVID-19 influx in the nation. Under the leadership of Hon'ble Prime Minister of India and Hon'ble Health Minister of India, all international airports and ports were sealed and screening activities for travelers from China (subsequently extended for other countries) were initiated. Reasonable restrictions were imposed for international travels from and to India. Extensive contact tracing was initiated right from the beginning of the threat. Nevertheless, n-Corona positive cases did make entry to India. Non-compliance to home quarantine by the incoming travelers, no strong evidence of asymptomatic transmission in early stages of influx of cases, and lack of testing capacity, PPE and necessary guidelines at different levels were some of the factors that contributed to influx of n-Corona cases.

However, this is for the first time that under direct monitoring of Hon'ble PM of India, top institutions of the country such as the Indian Council of Medical Research (ICMR), reviewed the guidelines frequently to match the emerging needs and various organisations came together to build the capacity of the country for various logistics required to fight against this pandemic.

As the data from other countries were becoming available, overall panic across

all sections of the population was increasing. Media was reporting the number of deaths taking place in various countries and many countries getting helpless. At that moment on March 25<sup>th</sup>, 2020, when India had reported only 606 cases, the country took a major decision of country wide lockdown. This was based on successful experiences of other countries favouring lockdown strategy, and available projections that could have been frightening if this was not undertaken.

It was again for the first time in the history of India, that excellent behavioral interventions were done under direct leadership of Hon'ble Prime Minister of India. A successful, day-long, self-imposed lockdown all over the country, prepared and trained the country for the lockdown that was to be imposed in future. Like a trial run, it also brought to the notice the gaps in form of crowd gathering at 5 PM. This showed that though the country was willing to act as per the instructions, but was not having clear understanding about the nCoV transmission dynamics. A morale boosting exercise also had desired impact. Efforts of the government to make stringent rules to tackle violence against health staff are also commendable.

Hon'ble Prime Minister of India had a vision that the lockdown might impact the poor and vulnerable. From the beginning, he appealed strongly to all citizens and organizations to take care of the poor and the needy, to provide them food, to not cut their wages, and to not demand the house rents etc.

These proactive and rightful steps, were successful in reducing the rate of transmission, strengthening the health systems, reducing the death rate, were able to reach out to the poor with essential services and to meet the essential needs of the general population as well with almost all services reaching the door steps.

However, observations at this point of time are that all these outcomes were not to the desired satisfaction. There seems to be implementation failures at the level of many state governments. Some states which are successful had implemented all health and non-health measures strongly. They tested actively, took desired actions, and also took care of social welfare very strongly. On the other hand, other states remained in denial, they did very less testing under the fear that more testing means more positive cases and greater threat. Non-compliance to the self-quarantine and self-isolation by the community were also reported.

It seems that there was gross neglect of public health principles at the state level in many states making a strong case to build public health systems at state, district and sub-district levels to deal with not only COVID-19, but also other public health emergencies.

However, criticisms that response of the government was reactive, with little preparedness or investment in health systems, without community engagement and empowerment, are baseless. In the grave situation of a pandemic, unusual in terms of transmission speed, with many mild and asymptomatic cases, and unknown epidemiological features; along with the experience that China being unable to restrict transmission despite prompt actions, and WHO's unclear position on human to human transmission and international travel restrictions — the Indian response was as per the guidelines and experiences shared at that time.

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