

Original Research Article

## Response of Himachal Pradesh to new strains of pandemic COVID 19

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### ABSTRACT

In the history of human civilization from time to time new strains of deadly viruses have evolved causing a wide spread havoc. Recent being the Corona virus's new strain 'COVID-19'. It has been reported from the Wuhan City in Hubei Province of China in Dec, 2019. After taking a heavy toll of deaths there the deadly virus has spread its tentacles globally within a short span only. Alarmed by the terrifying situation in countries like Italy, Spain, South Korea, America etc. along with daily reporting of new infected cases globally, WHO has declared it as Pandemic. Being a contagion and presently having no sure shot cure for this disease the only remedy is social distancing and keeping a private hygiene as a best effective measure to break its vicious circle. Various govt. globally has declared successive lockdowns and curfews in their countries after learning lessons from worst affected countries. Indian response has also been very swift in this case and till now it's yielding very positive results also. In this research paper a stock and over view of this alarming situation has been taken into consideration with reference to a small hill state of India, Himachal Pradesh.

### KEYWORDS

Virus | Corona Virus | Social Distancing | WHO | epidemic | Pandemic | Himachal Pradesh

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## Introduction

The name virus has been taken from the Latin word 'virus' meaning noxious substance and are infect sub-microscopic entities having a size range between 20 - 300 nm (Powar and Dagainawala, 1982). They are infectious agents producing a good range of serious diseases both in plants and animals including humans also. Virus's genetic material is either RNA or DNA rapped by a protective protein coat (*Capsid*). Viruses are non-living outside and become active only inside the host body multiplying there repeatedly and producing diseases. Some of the famous deadly animal viral diseases are swine influenza, hoof and mouth disease and equine encephalomyelitis etc. Similarly plant viral diseases include mosaic virus and ring spot virus *etc.* Furthermore, in humans terrifying viral diseases are chicken pox, small pox, HIV and recent surfaced Covid-19 is causing nightmares in millions of people globally (Matta, 2020).

The word corona for viruses was first used by a group of scientists in article titled "Corona viruses" in biological Journal "*Nature*" (Almeida *et al.*, 1968). Corona is a Latin word meaning "*crown*". Thus the corona virus gets their name due to their crown like shape when viewed under microscope. Corona viruses (CoV) are a very large family of viruses causing illness ranging from the common cold to more severe diseases like middle-east respiratory syndrome (MERS-CoV) and severe acute respiratory syndrome (SARS-CoV). COVID-19 is clearly a serious disease of international concern. By some estimates it has a higher reproductive number than SARS (Liu *et al.*, 2020). Corona viruses

(CoVs) are the most important group of viruses belonging to the Realm: Riboviria, Phylum: Negamaviricota, Subphylum: Haploviricotima, Class: Insthoviricetes, Order: Nidovirales, Family: Coronaviridae, Subfamily: Coronavirinae. The Coronavirinae are further subdivided into alpha, beta, gamma and delta subgroups. The Genus of corona virus is alpha corona virus. So far seven types of corona virus have been identified to infect humans.

Human corona viruses were first identified during the mid-1960s. The corona viruses infecting human population are: Common human corona viruses 229E (alpha corona virus), NL63 (alpha corona virus), OC43 (beta corona virus), HKU1 (beta corona virus), MERS-CoV, SARS-CoV and COVID-19. The common corona viruses infecting humans are 229E, NL63, OC43 and HKU1. Sometimes corona viruses infecting animals can evolve and switch into a replacement strain of humans as they are zoonotic (transmitted between animals and people). The studies have shown that MERS was transmitted to humans from dromedary camels, SARS from civet cats and COVID-19 is suspected to be from bats. In the past decade also numerous novel corona viruses have been discovered in a wide variety of bat species throughout Asia, Europe, Africa and America (Drexler *et al.*, 2014). The worst may come yet as several known corona viruses circulating in animals haven't infected humans yet.

The spread of disease is through tiny particles travelling through the air as droplets when a diseased person coughs, sneezes, talks or breathes within close proximity. Novel corona virus (nCoV) is a new strain of

corona virus which has not been reported earlier. This “novel” corona virus is now officially named as COVID-19 (Corona virus Disease 2019). China reported some cases of unknown pneumonia in Wuhan City of Hubei Province in Dec, 2019. The Chinese virologist’s identified it as a new strain of corona virus infection and isolated it in Jan, 2020. The novel corona virus infection (COVID-19) that emerged from Wuhan, Hubei province of China has now spread worldwide (Dhama *et al.*, 2020). COVID-19 causes respiratory illness and is especially transmitted in person-to-person more faster than even bullet trains making it more dangerous than all known viruses till today.

The common symptoms of infection include respiratory signs such as cough, breath shortness along with difficulties in breathing and fever. Symptoms generally disappear during a few days’ time but if corona infection spreads to the lower tract it can lead to pneumonia in people with older age, heart condition and weakened immune system. Infection can also cause severe acute respiratory syndrome and renal failure resulting in death.

As, neither vaccines nor direct-acting antiviral drugs are available for the treatment of human as of present. Though, Remdesivir is an antiviral agent against Ebola and SARS viruses that has significant effects on the COVID-19 (Mulangu *et al.* 2019). Therefore, the best remedy available till now is to stop infection from spreading which includes regular hand washing, covering your mouth and nose when coughing or sneezing and avoiding close contact with anyone who is coughing, sneezing, or showing the other symptoms of respiratory disease. Also

there seems to be now widespread community transmission of COVID-19 in many countries meaning where sources of infection are unknown. The incubation period for this virus is somewhere around 14 days. Therefore, isolation and self-monitoring reception for 14 days is extremely recommended even for asymptomatic person (WHO, 2020).

COVID-19 outbreak has turned into a horrifying nightmare as there is urgent need to act fast and with speed and pin pointed accuracy to detect, reduce transmission and treat it as a forward step from deadly disaster to happen. In patients with COVID-19, the number of white blood cells can vary. In the early stages of infection, the number of lymphocytes and leukocytes appears to decrease, although lymphopenia is more common. Serum procalcitonin levels are also elevated in people with severe disease. With the onset of the disease, high D-dimer levels and severe lymphopenia have been reported to be equivalent to death.

The outbreak has been categorized into four stages the primary being when cases of an infection reach into a new area, in the second stage there are cases of local transmission within newly invaded area and during this stage the trajectory of the virus are often identified from the source to all or any infected individuals. In third Stage it becomes hard to trace the chain of transmission of the virus due to large no of cases in communities suggesting that the virus is circulating within the community. During this stage a lockdown becomes highly important as a person can spread the virus to large no of people within

community triggering a cyclic reaction which is herculean task to neutralize. The fourth stage is when an infection becomes endemic in some countries and keeps on reappearing around the year time to time. These stages of an epidemic remain same across the countries in order to keep and understanding simpler.

India imposed travel restrictions on China quite early within the outbreak. When cases being imported from other countries were noticed strict restriction were imposed on much larger scale by imposing ban on all international flights. In order to protect our people from infection series of ban has been imposed on people from stepping out of their homes by the Govt. of India. Thus our response to COVID-19 has been quick and fast. The efforts made towards prevention and containing the spread includes strengthening surveillance, contact tracing and isolation, risk communications and laboratory capacity building. The Govt. appeal on social distancing has received widespread community support across the country. It's vital that we show solidarity and help in breaking the chain of transmission and flattening the curve. We took a proactive measure of imposing travel restrictions on all such countries and along with universal screening. India has banned all incoming international passenger flights, locking down our country from the remainder of the planet in multiple phases. The fight against the deadly virus has got to be a collective one to save humanity from its one among the most important threat of present time.

The Government of Himachal Pradesh a small hill state of India has also been quick enough to reply to the present global emergency under the guidance of Union Govt. of India and has taken series of steps such as imposition of curfew under Section 144 of CRPC, no movement in inter-state and intra-state except essential goods, setting-up COVID 19 helpline number and emergency operation centers at various levels, ear-marking ambulances for every district, closing of public offices except with essential and emergency services, three-hour relaxation in curfew timings for purchasing essential goods, under National Food Security Act (NFSA) each family within the state is given the quota of food grains of two months in April itself, enhancement of social security pension for widows, for orchardists plant protection centers has been chalked out, creation of HP COVID-19 solidarity response fund alongside home delivery of essential commodities for ensuring proper distancing between person to person has been implemented with private players and public distribution system Himachal's COVID-19 tally till 2<sup>nd</sup> July 2020 has reached 1014, of which 359 are active, 632 have cured, and eight have died. About 13 patients have migrated outside the State. The present scenario of COVID-19 warrants the need for implementing robust preventive and control measures due to the potential for very serious threat to humanity.

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