



## Review Article

## Measures to be taken to prevent the spread of pandemic disease: COVID- 19

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## ABSTRACT

Outbreak of serious pandemic disease, of corona virus was declared as emergency of international concern to the public health by world health organization. Till date no medication has proven its effects on the destruction of the virus. The prime most things which could help in the prevention of community spread of the virus are maintaining social distancing from other individuals of the community, hand sanitization with alcohol based sanitizers and frequently hand washing, self-isolation or quarantining the people with symptoms of corona virus.

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## 1. Introduction

In December 2019, this corona virus was firstly reported in Wuhan sea food market of CHINA. People of unknown origin of pneumonia start presenting to the local hospitals. Earlier it was stated that this virus was transmitted from ingestion of sea food from the local market to the persons who have ingested the sea food, but later it was stated that, this virus has the tendency to spread from Human to Human, because cases have been reported to local hospitals who don't have any history of sea food from local market. In March 2020, world health organization declared it as pandemic disease.<sup>1</sup>

The main route of transmission of the virus is through air droplets, when a infected person cough or sneeze. These droplets can get entry to other person through nose, mouth who is nearby the infected person or transmission can also

be due to aerosol generating procedure in dentistry, like crown preparation, access opening for root canal procedure, some oro surgical procedures. These aerosols can be inhaled by the other person performing one of these procedures or can be inhaled by any other person present or sitting nearby.<sup>2</sup>

Transmission of this virus can also occur through an asymptomatic person to the other person, the extent of this is still unknown.<sup>2</sup> Till date no specific medication has been developed for corona virus.<sup>3</sup> Only the preventive measure can help us in limiting or stop the spread of the corona virus, which includes thermal screening for temperature through thermal gun to check the temperature of the individual, diagnosis through molecular tests, or through nasal or oropharyngeal swab, if one is tested positive for the test, he/she should remain in an isolation. Isolation could be at home isolation, if the infected person having a separate room, separate washroom, so that no one else can come in contact to the infected person as well as to its surroundings,

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and the second option is of institutional quarantine.<sup>4</sup>

## 2. Measures to be taken to prevent the spread of corona virus

The most important factor for the community to undertake is to:-

1. Frequently wash their hand with soap, or with alcohol based sanitizer after coming in contact with contaminated surface or contaminated environment. Avoid touching eyes, mouth after having contact with any contaminated surface. Literature said that only alcohol based sanitizers are efficient over this corona virus. As this virus come under the category of enveloped virus, after hand washing this envelop of the virus is being broken down and the virus is ineffective.<sup>5</sup>
2. Cover your mouth with mask/ face shield, so that one should be protected from aerosols from other person if infected. And it helps in prohibition of spreading of one's own aerosols to the community if infected.<sup>5</sup>
3. One should avoid travel/ walk in to the crowded areas and one should avoid close contact with the ill individuals.<sup>5</sup>
4. Social distancing is advised, so that aerosol transmission should be prohibited in the community.<sup>5</sup>

Some measures taken by the government, to prevent the spread of the virus are as follows:-

1. Total closure of educational institution, so that there should be no gathering of students and there should be no community spread of the virus.
2. Restriction to mass gathering, such as restrict number of people at meeting, limited number of people at marriages, with proper social distancing, to avoid community spread of the disease.
3. Closure of interstate borders to travel, to avoid community spread of the disease.
4. Staying at home.

### 2.1. Personal Protection

One should wear a face mask, to avoid airborne contact from symptomatic/ asymptomatic patient from the community. Wearing a face mask is of primary concern when visiting market, grocery shops, closed spaces, areas with more number of people, when travelling in government/public transport, mask should be weared especially when visiting to some work officials, where there could be a chance of close approximation, like visiting health workers, health officials, bank officials, police officials, to avoid community spread. Person who is taking care of infected person due to covid-19 at home quarantine or at institutional quarantine should also wear a face mask to stop air borne spread.<sup>6</sup>

### 2.2. Social Distancing

Has been proven one of the best method in reducing the community spread of corona virus. There are some symptomatic as well as asymptomatic patients in the community, and these one could act as an carrier for the same. The areas where the social distancing could not be able to maintained like education institutions, work places for companies, these should remain closed as per world health organization as well government recommendations, to avoid the community spread of the disease.<sup>7</sup>

### 2.3. Isolation/ Quarantine

Is the best method to control the spread of this communicable pandemic disease. Quarantine means restriction to move for a specific time period, to those people who actually were not ill, but could be a chance that they have been exposed to some infectious disease, that have the tendency to transmit. The main objective of the isolation / quarantine the person is to have observation for early detection of symptoms, so that the infected person remains out of contact from the normal individuals of the community, to prevent the community spread of the pandemic disease, and proper care of the infected person should be undertaken. A study stated that the process of "QUARANTINE" can reduce the number of infected individuals from 81% to 44%.<sup>8</sup>

### 2.4. Disinfection and cleaning

The areas which are commonly touched several times by an individual like sides of the bed, handle of vehicles, door handles etc. these items should be disinfected on regular basis with the help of diluted bleach solution, or with the help of ethanol based disinfectant.<sup>9</sup> Most importantly washrooms should be disinfected with one part bleach to nine part of water to make it 0.5% sodium hypochlorite solution.<sup>10</sup>

Additional measures to control the cross contamination of infection through instruments should be taken, for e.g. orthodontic pliers, metal trays for impression making, air rotors, carbide burs, should be sterilized with steam autoclave sterilization and can be disinfected with chemical disinfectants like 2% glutaraldehyde or 0.25% peracetic acid. Orthodontic pliers should be sterilized in open position. orthodontic markers should be disinfected with glutaraldehyde solution. Photographic retractors with washer disinfectant were reported as the most effective method of disinfection.

## 3. Conclusion

To control the spread of this serious pandemic corona virus disease, each person of the community plays an important role in preventing the spread or community spread of the

virus by proper hand sanitization measures, by wearing face mask, avoid contact to the other person, maintaining social distancing from other individuals and lastly by self isolation or institutional quarantine of the individual.

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#### 5. Conflict of Interest

The authors declare they have no conflict of interest.

#### References

1. Guan W, Ni Z, Hu Y, Liang W, Ou C. Clinical Characteristics of Coronavirus Disease 2019 in China. *Engl J Med.* 2020;382:1708–20. doi:10.1056/NEJMoa2002032.
2. Wei WE, Li Z, Chiew CJ, Yong SE, Toh MP, Lee VJ, et al. Presymptomatic Transmission of SARS-CoV-2 — Singapore, January 23–March 16, 2020. *MMWR Morb Mortal Wkly Rep.* 2020;69(14):411–5.
3. European Centers for Disease Control (ECDC) (2020). Using face masks in the community reducing COVID-19 transmission from potentially asymptomatic or pre-symptomatic people through the use of face masks ECDC Technical Report . 2020; Available from: <https://www.ecdc.europa.eu/en/publications-data/using-face-masks-community-reducing-covid-19-transmission>.
4. Nussbaumer-Streit B, Mayr V, Dobrescu AI, Chapman A, Persad E, Gartlehner G, et al. Quarantine alone or in combination with other public health measures to control COVID-19: a rapid review. *Cochrane Database Syst Rev.* 2020;4(4):CD013574. doi:10.1002/14651858.CD013574.
5. World Health Organization (WHO) (2020). Advice on the use of masks in the context of COVID-19: interim guidance; 2020.
6. Wilder-Smith A, Freedman DO. Isolation, quarantine, social distancing and community containment: pivotal role for old-style public health measures in the novel coronavirus (2019-nCoV) outbreak. *J Travel Med.* 2020;27(2):taaa020. doi:10.1093/jtm/taaa020.
7. World Health Organisation (WHO) (2020). Getting your workplace ready for COVID-19: How COVID-19 spreads; 2020.
8. Pan A, Liu L, Wang C, Guo H, Hao X. Association of Public Health Interventions With the Epidemiology of the COVID-19 Outbreak in Wuhan, China. *J Am Med Assoc.* 2020;35(11):1915–23.
9. Kwon KT, Ko JH, Shin H, Sung M, Kim JY. Drive-through screening center for COVID-19: a safe and efficient screening system against massive community outbreak. *J Korean Med Sci.* 2020;35(11):123.
10. Hatchett RJ, Mecher CE, Lipsitch M. Public health interventions and epidemic intensity during the 1918 influenza pandemic. *Proce National Acad Sci.* 2007;104(18):7582–7. doi:10.1073/pnas.0610941104.

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