

# Coronavirus Disease (COVID-19) Outbreak and the Strategy for Prevention

Ahmad Naeem Sajed<sup>1</sup>, Kapil Amgain<sup>2</sup>

## Author Info:

<sup>1</sup>Editor, Europasian Journal of Medical Sciences, Microbiologist; Biology Department, Lahore Garrison University, Pakistan

<sup>2</sup>Editor, Europasian Journal of Medical Sciences; Executive Director (research-Wings), Nirvana Psychosocial Care Center & Research Institute, Kathmandu, Nepal

## \*Corresponding Author:

Dr. Kapil Amgain  
Email/Contact:  
[dr.kapilamgain@gmail.com](mailto:dr.kapilamgain@gmail.com)

## ABSTRACT

The Coronavirus Disease (COVID-19) is the novel disease of the respiratory system, causing the ongoing pandemic with flu-like symptoms. It is caused by a virus known as SARS-CoV-2 (Severe Acute Respiratory Syndrome Corona Virus-2). This disease affected the entire world and various myths are circulating about its diagnosis, treatment, and prevention. The choice for diagnosis should be based on clinical and epidemiological factors and linked to an assessment of the likelihood of infection. A number of rapid diagnostic and serological tests are being used for the detection of suspected COVID-19 cases. However, the sensitivity and specificity of such newly marketed tests have not been evaluated and never up to standard yet. Therefore, it is not recommended any such immunochromatographic or serological rapid screening tests for the diagnosis of SARS-CoV-2 infections. The most reliable diagnostic test to confirm COVID-19 is PCR (Polymerase Chain Reaction) which is a molecular-based test for the detection of SARS-CoV-2. Eradication of highly contagious SARS-CoV-2 Virus that causing the ongoing deadly pandemic COVID-19, demands individual attention and awareness are necessary regarding the route and mode of transmission across the boundaries throughout the entire world. Proper hand-washing, staying at the home and maintaining the social distance are proved to be the most effective preventive measures and are immediate solutions to save human beings from this unseen enemy.

**Keywords:** COVID-19, SARS-CoV-2, Pandemic, Corona Virus

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## BACKGROUND

The Coronavirus Disease (COVID-19) is the novel disease of the respiratory system, causing the ongoing pandemic with flu-like symptoms i.e. fever, cough, runny nose, sore throat, and shortness of breath and feeling tired<sup>1</sup>. It is caused by a virus known as SARS-CoV-2 (Severe Acute Respiratory Syndrome Corona Virus-2). This virus was first identified and diagnosed in December 2019 at Wuhan, Hubei Province China and hence kept its name as COVID-2019 (Corona Virus Disease 2019). The Coronaviruses belong to a family of viruses, which cause diseases in humans (and few in other mammals) and may transmit through animals to human or human to human. Its main reservoirs are Rats, Cats, Bats and Camels<sup>2</sup>. Infrequently, zoonotic coronaviruses may infect humans those exposed to animals having coronavirus infection and subsequently spread it in natives responsible for lethal human respiratory infections.

The number of COVID-19 cases increasing day by day, with the mortality rate of 4.63%, however, the mortality rate is varied country to country, as reported by WHO dated 29 March 2020,<sup>3</sup> it has been spread across 201 countries infecting over 658,347 peoples with the overall mortality of 30,460 people.

## MODE OF TRANSMISSION

Humans are at higher risk of contracting the disease that has been in contact with a person who is conformed to have COVID-19 or those who have traveled to the countries where there has been a significant outbreak of the novel disease. People who have flu-like symptoms after traveling to such countries in the last 14 days may suspect of COVID-19. This disease can be transmitted from infected persons to the uninfected populations through fomites including the respiratory droplets within the area of six feet during coughing, sneezing, spitting, etc. SARS-CoV-2 can survive on an inanimate surface such as tables and door handles depending upon the type of material and conditions. The new studies have shown that the SARS-CoV-2 can remain detectable in aerosols for up to 3 hours, on cardboard surface survived for 24 hours and up to 2 to 3 days on plastic and stainless steel<sup>4</sup>. The humans may acquire SARS-CoV-2 through the air and after touching the contaminated objects<sup>3</sup>.

## Diagnostic Test

According to the National Institute of Health, Ministry of National Health Services, Regulations & Coordination "a number of rapid diagnostic and serological tests are being used for the detection of suspected COVID-19 cases. However, the sensitivity and specificity of such newly marketed tests have not been evaluated and never up to standard yet. Therefore, it is not recommended any such immune-chromatographic or serological rapid screening tests for the diagnosis of SARS-CoV-2 infections". The most reliable diagnostic test to confirm COVID-19 is PCR (Polymerase Chain Reaction) which is a molecular-based test for the detection of SARS-CoV-23. Management of Covid-19 in terms of recovery and treatment of COVID-19, there is the only supportive treatment for the disease that helps to control the symptoms<sup>3</sup>. Recovery of patients depends on the patient immune system and medical care provided. The recovery rate of victims infected with SARS-CoV-2 was seen up to 96-97%<sup>3,5</sup>. Vigilance is a good thing but it is necessary to reduce panic conditions. If you have not found any conformed COVID-19 case or any person who has traveled to the area with a high prevalence of fewer than two weeks, you do not need to worry about it.

## PREVENTION

Unlike other members of the SARS viruses, the SARS-CoV-2 is highly contagious and hence spread rapidly throughout every continent within a few weeks after it was first identified in Hubei Province China. Maintenances of personnel and environmental hygiene are the major steps for the prevention of this novel viral disease. The community is recommended to stay isolated either in-home or in the workplace and avoid the persons showing with flu-like symptoms i.e. fever, cough, runny nose, sore throat, and difficulty in breathing at your home or workplace. Persons with symptoms are advised to practice proper sneezing and coughing etiquette e.g. cover the nose and mouth with face mask, tissue paper, or upper sleeve. Visit health care setup if signs and symptoms become worse i.e. high-grade fever, coughing, sneezing, and shortness of breath. A nutritious diet shall be provided to improve immunity. Following general measures should be followed to prevent the further spread of this deadly virus<sup>3-6</sup>.

- Wash hands with soap and water or alcohol-based hand sanitizers for 30 seconds before and after taking meal even after completion of routine work.
- Do not touch nose, eyes, mouth, face or any body part with unwashed hands.
- Do not touch and share personnel belonging like towel, bedding with others in-home or at workplace (Human, Animals in your house etc. cups, drinking glass and eating paraphernalia).
- Subsequent to use such items they must be washed with water and soap<sup>5</sup>.
- Inanimate surface in-home and workplace (countertops, door nub, dining table etc) should be routinely cleaned up with the help of disposable wipes, bleach or alcohol-based surface disinfectants.
- Do not shake hands and embrace others in greetings across the workplace or at home.
- Keep a safe distance (approximately 6 feet) from others while visiting outside.
- Prohibit visitors who do not have an essential need to be in-home and at workplace until the time situation gets better.
- Avoid crowd or close contact to people e.g. sharing vehicle, room, or in gathering especially visiting hospital, clinic or any other public place until current threat of COVID-19 is averted.
- Make use of face mask and gloves in open spaces or at work stations, dispose of face mask and gloves after their use, and avoid reusing them.
- There is no need of using medical mask at home if exhibiting no symptoms.
- Avoid getting in touch with pets like snuggling, petting, licking, kissing or and being shared food.
- If animal care is necessary then wear face mask and wash hands before and after touching pet animals.
- In case of medical emergency, call local emergency medical service, inform dispatch person that you are COVID-19 suspect. Put on face mask or use tissue paper before the arrival of Medical Emergency Personals.

- If you are returning from COVID-19 affected areas should self-monitor symptoms for 14 days in isolation at home.

#### BOTTOM LINE

Eradication of highly contagious SARS-CoV-2 virus that causing the ongoing deadly pandemic COVID-19, demands individual attention and awareness is necessary regarding the route and mode of transmission across the boundaries throughout entire world. Proper hand-washing, staying in-home, and maintaining the social distance are proved to be the most effective preventive measures which are immediate solution to save human being from this unseen enemy

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