

Manifestation & Forestalling of Coronavirus Disease (Covid-2019) – A Dentist’s Perspective

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ABSTRACT:

Pneumonia cases in China, was caused by a Corona virus, known as Coronavirus-2019 (COVID-2019). Novel β -corona virus (COVID-2019) caused fatal pneumonia in Wuhan city, China, which rapidly spread to other countries also and this time it enters in India also. The transmission routes of Coronavirus-2019 (COVID-2019) can be Direct transmission, such as cough, sneeze, droplet inhalation and Contact transmission, such as the contact with oral, nasal, and eye. Coronavirus-2019 (COVID-2019) can also be transmitted by person-to-person transmission route through saliva.

The dental professionals can also expose to higher risk of Coronavirus-2019 (COVID-2019) infection due to the direct communication with patients oral cavity and the exposure to saliva, blood, other body fluids, and through dental instruments. Dental professionals also play great roles in preventing the transmission of Coronavirus-2019 (COVID-2019). Here, are the infection control measures during dental practice to stop or reduce the person-to-person transmission routes in dental hospitals and clinics.

Key Words:

Coronavirus-2019 (COVID-2019), Novel Corona virus infection, Symptoms, Prevention, Dental Practices.

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INTRODUCTION:

According to Centres for Disease Control & Prevention (CDC) Coronavirus-2019 or COVID-2019 is not similar virus like was in 2002 Severe Acute Respiratory Syndrome (SARS) Coronavirus & in 2012 Middle East Respiratory Syndrome (MERS) Coronavirus. This is Novel Coronavirus-2019, which also comes from animal sources as Bats & others, cross from animals to humans.¹

According to World Health Organization (WHO) global number of confirmed cases of Coronavirus-2019 or COVID-2019 has surpassed 100,000. WHO also creates awareness & doing efforts for limit the number of cases & slowing the spread of this Coronavirus – 2019 or COVID-2019 to save human lives as much possible.²

According to Centres for Disease Control & Prevention (CDC) fatality rate of Severe Acute Respiratory Syndrome (SARS) Coronavirus & Middle East Respiratory Syndrome (MERS) Coronavirus as high with 45% to 50% of infected patients. Keep this as serious numbers, WHO & CDC combined with scientists and health care professionals to reduce this rate for Coronavirus-2019 (COVID-2019).¹

Dental Health Care Professionals should also stay on current for this Coronavirus-2019 (COVID-2019), So that they can protect themselves and their Staff members, Students & Patients also from spreading this virus.

ROUTES OF TRANSMISSION OF CORONAVIRUS-2019 (COVID-2019):

Coronavirus-2019 (COVID-2019) can be spread through common routes like –

- **Direct Transmission**, which includes – Cough, Sneeze & Droplet inhalation.
- **Contact Transmission**, which includes – Oral, Nasal & Eye mucous membrane.³

In addition, Studies conducted by **Rothe C. et al.** have reported that this virus can also be transmitted from one person to another person through Direct or Indirect contact also. Coronavirus-2019 or COVID-2019 also spread through Saliva.⁴

Wax, R. S. & Christian, M. D. study showed that Coronavirus can also be spread through Airborne like Droplets, Aerosols which formed during Dental procedures.⁵

CORONAVIRUS-2019 TRANSMISSION DURING DENTAL PRACTICES:

As Dental Professionals are very prone to infection through saliva droplets & aerosols because they exposed to pathogenic micro-organisms including viruses and bacteria that present in oral cavity, so Dental Professionals carry high risk of Coronavirus-2019 infection during dental procedures.

Due to frequent exposure to Saliva, Blood & Body fluids, any pathogenic micro-organisms can be spread through inhalation or through direct contact with oral fluids or through coughing or aerosols.⁶

Coronavirus-2019 or COVID-2019 can also be spread through the contact with Contaminated Dental Instruments like - High Speed Dental Handpiece which work with running water, Suction Tips, Contaminated Surfaces, Infected Patient's Cough & Breath.⁷

SYMPTOMS OF CORONAVIRUS-2019 OR COVID-2019:

Dentist should watch the patients or staff members for these symptoms of Coronavirus-2019 or COVID-2019.

Reported cases of Coronavirus-2019 or COVID-2019 have ranged from mild to severe illness & death for confirmed Coronavirus-2019 cases.

Following symptoms may appear in 2-14 days after exposure: -

- Fever
- Cough
- Shortness of Breath.⁸

There are some emergency warning signs also which includes: -

- Difficulty in breathing or shortness of breath.
- Persistent pain or pressure in the chest.
- New confusion or inability to arouse.
- Bluish lips or face.⁹

If patient shows any emergency warning signs for Coronavirus-2019 get medical attention immediately.

Older adults & people who have severe underlying chronic conditions like Heart or Lung disease or Diabetes seems to be higher risk for COVID-2019 illness.¹⁰

GLOBAL NUMBER OF CONFIRMED CASES OF CORONAVIRUS-2019 OR COVID-2019 ACCORDING TO WORLD HEALTH ORGANIZATION (WHO)

Here are some data provide by WHO of the confirmed cases of Coronavirus globally. (Figure - 1&Figure -2)^{11, 12}

PREVENTIVE MEASURES FOR CORONAVIRUS-2019 OR COVID-2019 FOR DENTAL PRACTICE:

The best way to prevent illness is to avoid being exposed to this virus.⁹

PATIENT SCREENING OF CORONAVIRUS-2019:

First of all, dental professionals should be able to identify a suspected case of COVID-19. Dentist should screen all patients for recent travel to confirm location of Coronavirus-2019 or COVID-19.

- If the patients document of travel show that travel have passed two weeks since they return from the CDC reported countries and patients also present with no symptoms, dental professional can proceed with the procedure.
- If patient have any symptom of acute respiratory illness with fever or cough reschedule the appointment and send the patient to immediately quarantine and report to the infection control department as soon as possible.¹³

PERSONAL PROTECTIVE MEASURES FOR THE DENTAL PROFESSIONALS:

- Wash your hands often with soap and water for at least 20 seconds, A two-before and-three-after dental procedure hand hygiene guideline is proposed by the infection control department of the West China Hospital of Stomatology, Sichuan University.¹⁴
- Specifically, the oral professionals should wash their hands before patient examination, before dental procedures, after touching the patient, after touching the surroundings and equipment without disinfection, and after touching the oral mucosa.⁸
- If soap and water are not available, use a hand sanitizer that contains at least 60% alcohol.
- Avoid touching your eyes, nose, and mouth with unwashed hands.
- Avoid Handshake with persons around.¹⁴
- Wearing disposable working cap, disposable surgical mask, and working clothes (white coat), using protective goggles or face shield, and disposable latex gloves or nitrile gloves
- Wearing disposable doctor cap, disposable surgical mask, protective goggles, face shield, and working clothes (white coat) with disposable isolation clothing.⁸

PROTECTIVE MEASURES FOR THE DENTAL PATIENTS:

- Preoperational Mouth rinse before dental procedures d to reduce the number of oral microbes.⁹
- Use of rubber dams can significantly minimize the production of saliva- and blood-contaminated aerosol or spatter, particularly in cases when high-speed handpieces and dental ultrasonic devices are used.¹⁵

SUMMMARY:

The rapidly increasing number of evidence and cases of Coronavirus-2019 or COVID-2019 suggested that the virus is more contagious & fatal than Severe Acute Respiratory Syndrome (SARS) Coronavirus & Middle East Respiratory Syndrome (MERS) Coronavirus. After reading so much about this virus the best is to prevent yourself and your members during dental diagnosis and treatment, including patient evaluation, hand hygiene, personal protective measures for the dental professionals, mouthrinse before dental procedures, rubber dam isolation, anti-retraction handpiece can be helpful to fight with this virus.

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FIGURES

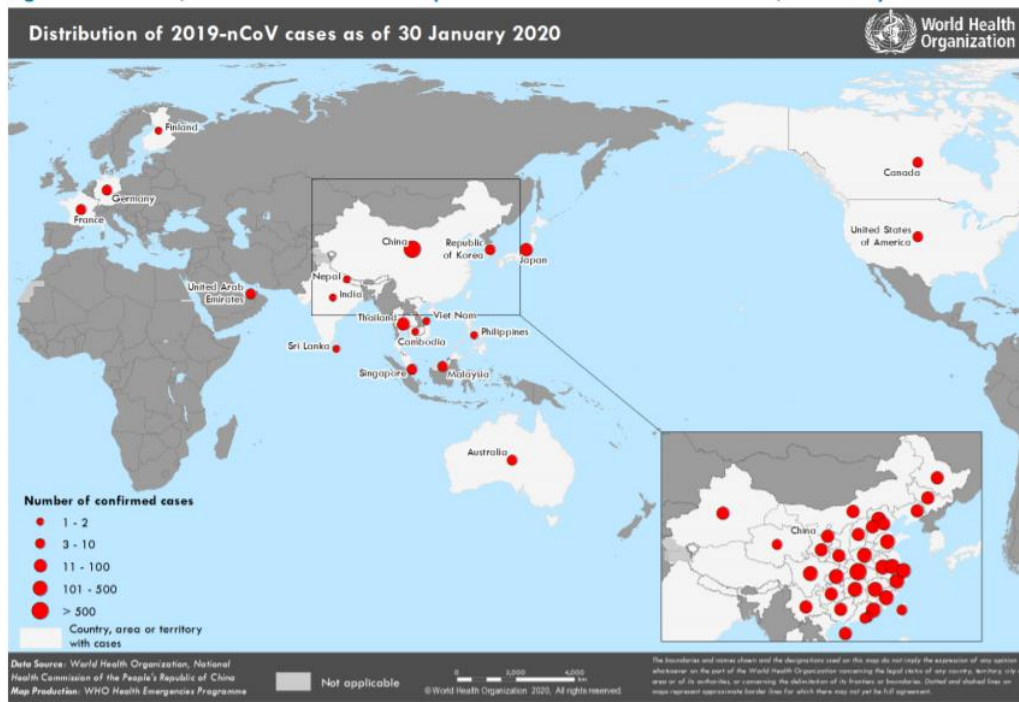


Figure -1 Countries, territories or areas with reported confirmed cases of 2019-nCoV, 30 January 2020, Acc. to WHO

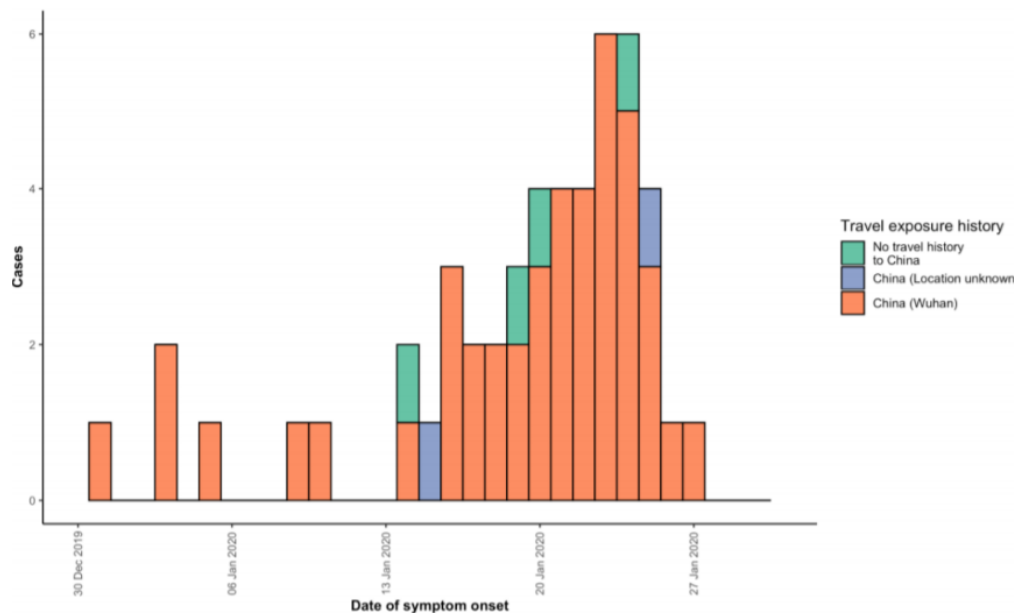


Figure -2 Epidemic curve by date of onset of 2019-nCoV cases identified outside of China, 30 January 2020, Acc. to WHO