

# Safety & Preventive Measures for Dental Health Care Professionals on COVID-19

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## ABSTRACT

Newly discovered coronavirus is a causative agent for infectious Coronavirus disease (COVID-19) which emerged in December 2019. Its mode of spread is primarily through droplets of saliva or discharge from the nose when an infected person coughs or sneezes. It is spreading quickly throughout the world. There are no prophylactic vaccines for COVID-19 at this time. So the need of the hour is to prevent such Pandemic disease affecting more lives. Dental health care professionals are at greater risk as they work in close proximity to patients. They are more prone to aerosol infections. Dentists should follow standard precautions to protect themselves from this virus. This article aims to provide all safety & preventive measures which can be taken by dental health care professionals while providing urgent dental care to the patients.

**Keywords:** COVID-19, Corona Virus, Pandemic, Dental Professionals, Safety Measures

## I. INTRODUCTION

The Coronavirus belongs to the *Coronaviridae* family having ssRNA genome. According to current reports The coronavirus COVID-19 is affecting 207 countries and territories around the world and 2 international conveyances: the Diamond Princess cruise ship harbored in Yokohama, Japan, and the Holland America's MS Zaandam cruise ship. <sup>(13)</sup> Dental health care Professionals are at the greatest risk as they work in close proximity to patients. Because of exposure to the virus many dentists are already under quarantine. The need of the hour is to prevent certain viral infections. The situation is alarming as the graph of average no. of cases each day is hiking as shown in Fig. 1. <sup>(12)</sup>

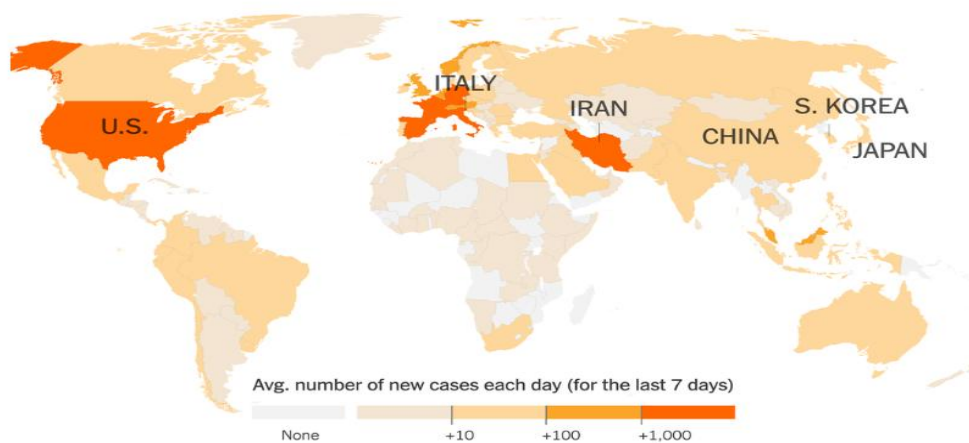


Fig. 1 Pic. courtesy: The New York Times

While treating patients keep following points in mind. These are:

**1. IDENTIFICATION:** As Dental health care personnel are exposed to oral cavity which is a common route for infection transmission, he/she should be alert. They will have to be careful while providing treatment to prevent nosocomial spread of infection. In the dental practice transmission of COVID-19 is commonly via aerosol. <sup>(3)</sup>

Identify patients with an acute respiratory illness. Unique feature of COVID-19 is it causes both Upper & lower respiratory tract infection. Take proper medical history. Its symptoms include Fever, dry cough, fatigue, sputum production, shortness of breath, myalgia/ arthralgia, sore throat, headache, chills, nausea & vomiting, nasal congestion, diarrhea, hemoptysis & conjunctival congestion.

Patient's body temperature should be checked using a non-contact forehead thermometer or with cameras having infrared thermal sensors. Elective dental care procedures should be deferred in Patients who present with fever ( $>100.4^{\circ}\text{F} = 38^{\circ}\text{C}$ ) and/or respiratory disease symptoms for at least 2-3 weeks.

Ask every patient about their travel history in the last 14 days or being in contact with such person having travel history. While confirming appointments or during the arrival of patients for treatment, appropriate questions should be asked which includes whether patients have been in close contact with someone who has been diagnosed with or is under investigation for COVID-19.

Patients answering yes to these questions should be counseled or encouraged to contact their physician as early as possible for COVID-19 diagnosis. If dentists or staff member comes in contact with a COVID-19 patient, he/she should get screening immediately.

## **2. INFECTION CONTROL**

**MEASURES:** To help prevent the transmission, various infection control measures should be followed: <sup>(4)</sup>

- Personal protection equipment (PPE) is mandatory while treating such patients.

- Autoclave Handpieces after each use.
- Studies have shown that SARS (Severe acute respiratory syndrome) and MERS (Middle East respiratory syndrome) were highly susceptible to povidone iodine mouth rinse. <sup>(6)</sup> Therefore, to minimize the load of corona viruses in the saliva preprocedural mouth rinse with 0.2% povidone-iodine should be done. <sup>(3,7)</sup>
- High-speed evacuation should be used for dental procedures producing an aerosol (for e.g. In Endodontic procedures or ultrasonic scaling)
- Perform hand hygiene with soap and water for at least 20 seconds. 60% alcohol based Sanitizers should be used.
- Face masks should be provided to patients who are coughing.
- Patients should be kept in isolation room to prevent transmission of disease to other patients and personnel.
- Routine cleaning and disinfection strategies should be followed in dental offices.
- Proper Fumigation should be done in dental office

**3. SELF PROTECTION:** Dental personnel should use disposable face masks, non-sterile gloves, head cap, gown and eye wear while assessing patients with a flu-like or other respiratory illness. The personal protective barriers should be worn once and discarded.

According to recommendation of CDC all dental health care professionals should receive flu vaccine. There is no treatment protocol yet that is published officially by WHO. Dental Personnel experiencing flu-like symptoms should not report to work.

**4. POSTPONE ELECTIVE DENTAL PROCEDURES:** According to The CDC's Guidelines for Infection Control in Dental Healthcare Settings - 2003, Avoid all elective dental procedures until the patient is no longer contagious with the airborne transmitted disease. <sup>(1, 10)</sup> Emergencies like Severe tooth pain, diffuse oral swelling, tooth fractures, 3rd molar pain/ pericoronitis & uncontrolled bleeding should be treated.

In such cases, both dental and medical health care providers should plan treatment together.

**5. PHARMACOLOGICAL MANAGEMENT:** Patients suspected or confirmed with COVID-19 infections, requiring emergency dental care in case of tooth pain and/or swelling, antibiotics and/or analgesics should be given as an alternative to relief symptoms.

It will give dental personnel time to plan & deliver dental treatment with all appropriate & preventive measures to avoid spreading infections.

On March 17, 2020, According to the British Medical Journal, use of Ibuprofen is prohibited due to its interference with immune function. Acetaminophen is a drug of choice for analgesia in treating COVID-19 infected patients. World Health Organization (WHO) endorsed this recommendation on March 18, 2020. <sup>(2)</sup>

In certain emergency cases such as dentoalveolar trauma, fascial space infection etc dentists should be aware of the following recommendations:

- Use of disposable dental equipment is mandatory to prevent cross-contamination.
- Radiographs: Intraoral Radiographs should be avoided as it may produce gag reflex or cough. Extraoral radiographs (e.g. panoramic radiograph or CBCT) should be done. <sup>(11)</sup> When intraoral imaging is mandated, double barrier is done on sensors to prevent cross-contamination. <sup>(8)</sup>
- Rubber dam should be used to minimize splatter generation, of course, for non-surgical endodontic treatment.
- Dental procedures that generate higher aerosol content for e.g.: ultrasonic instrument, high-speed Handpieces and three-way syringes should be avoided.
- Suspected or confirmed cases of COVID-19 should only be treated in negative pressure rooms or airborne infection isolation rooms (AIIRs) <sup>(5)</sup> & not in routine dental practice setting.

- On Inanimate surfaces or objects survival time of Corona virus is up to 9 days at room temperature, with a greater preference for humid conditions. So, Dry conditions should be maintained to prevent the spread of SARS-CoV-2. Disinfection should be done using chemicals recently approved for COVID-19. <sup>(9)</sup>

## II. CONCLUSION

Appropriate safety measures will protect both dental professionals & patients in transmitting this Pandemic Disease. Proper guide lines should be followed while providing urgent dental care services to the patient who is susceptible or confirmed with COVID-19. Prudent social distancing is the key to Combat COVID-19.

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