

# Dental Practice during COVID-19 Pandemic - A Narrative Review

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**Abstract:** *The corona virus disease (COVID-19) outbreak creates a global health and economic crisis. Due to the risk of cross infection through dental treatments, Dental profession has been made standstill during this COVID-19 pandemic. COVID-19 is also associated with exaggerated inflammatory response that leads to systemic complications resulting in fatal outcome. Majority of patients have symptoms or no symptoms that resemble seasonal flu or influenza comprising of undiagnosed cases. The mode of transmission is mainly through respiratory secretions and direct contact<sup>(8)</sup>. Therefore, asymptomatic dental patients should be considered as potential carriers and it is necessary to follow the guidelines in treating them. This manuscript provides the recommended IPC (infection prevention and control) guidelines and precautionary measures to be undertaken by the dental professionals in treating patients.*

**Keywords:** corona virus, dental profession, transmission, systemic complications

## 1.Introduction

Coronavirus disease (COVID-19) is an infectious pandemic disease that is caused by the SARS Cov-2 virus. It causes widespread infection resulting in increased morbidity across the countries. Many experts presume that the origin of the virus is from China. Moreover, the case was also reported in North America at the same time in March 1918<sup>(6)</sup>. The symptoms such as fever, dry cough and fatigue are the important features of an infected pupil. The Delta variant causes more infectious and spreads faster than the original SARS-CoV2 (the strain of the

virus that causes (Covid-19). For instance, the Alpha and the delta variants are said to be severe and may result in death. The virus spread through respiratory droplets, contaminated surface through the mucous membrane of the mouth, the eyes and the nose and fecal-oral route<sup>(8, 13)</sup>, shown in Figure 1. The hand piece and the ultrasonic instruments during dental procedures causes aerosol contaminations. Both dentists and patients are at the risk of being infected with microbial pathogens<sup>(4, 15)</sup>. Dental professionals should strictly adhere to the guidelines put forth by the national and international authorities to prevent the spread of infection.

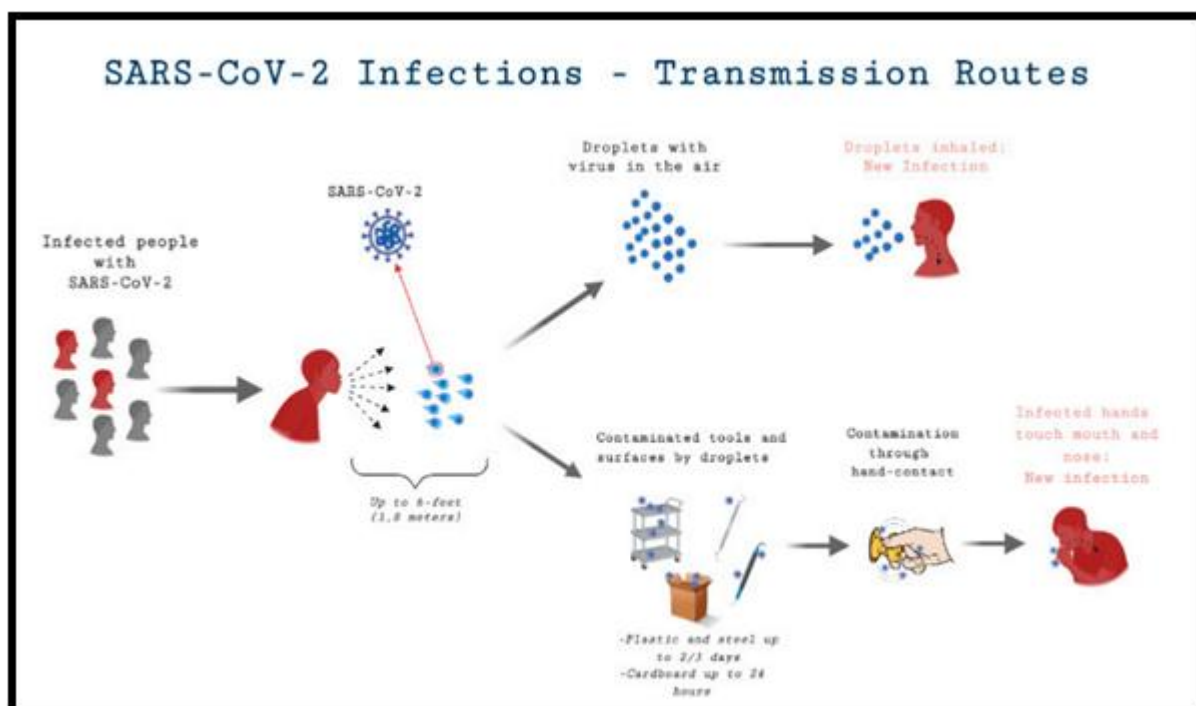


Figure 1: Transmission route of corona virus

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## Risk Assessment and Management

### Low risk patients:

- Vaccinated patients.
- No active COVID-19 symptoms, RT-PCR negative.
- COVID-19 affected person in whom 14 days elapsed after the resolution of the symptoms and/or RT-PCR negative.
- Followed by dental procedures undertaken with appropriate precautions<sup>(10)</sup>.

### High risk patients:

- Patients with COVID19 symptoms.
- Patients with RAT/RT-PCR positive.

Only emergency procedures should be undertaken with standard COVID protocols. If not possible then refer the patients to higher centers for management. Dental professionals should be responsible in preventing the transmission of 2019-nCov infection due to direct contact and handling with sharp instruments<sup>(13)</sup>. It is important to ensure that all professionals and auxiliary staffs are fully vaccinated.

### Protocols for Screening:

#### Teleconsultation

Tele consultation is preferable. Prior tele consultation will also facilitate to identify patients requiring physical examination in the clinic<sup>(1, 3, 7, 9, 11)</sup>. The following are the guidelines to be considered in treating the patients, shown in Figure 2.

#### Time based appointments:

- One Patient at a time in examination room, if possible, without assistant.
- Walk in patients without appointments needs to be discouraged.

### Entry of the patients:

- All patients entering the dental clinic must be tested for COVID symptoms.
- Patients having symptoms of corona must get COVID treatment immediately.
- Ensure that patients use face mask, sanitizer and social distance as per the standard protocols<sup>(2)</sup>.
- Contactless/Cashless payment methods are preferred.
- Donning and doffing of PPE should be done in separate areas<sup>(5)</sup>.

- The dental operators and assistance and all personnel must follow 2-meter distance and must wear impervious surgical gown/ scrub with well-fitting N-95 mask<sup>(18)</sup>. Using mask alone is not protective enough which necessitates hand sanitation along with the other IPC measures to prevent person to person transmission of 2019-nCov<sup>(19)</sup>.
- Sensor taps or taps with elbow handles are preferable.
- Avoid use of towels. Paper towels are preferred.
- Preprocedural mouth rinse with povidone iodine or chlorhexidine (CHX) for at least 15 seconds will reduce transient increase virus load.

### Infection control guidelines with special considerations for aerosol generating device:

- Using high vacuum suction with minimum suction capacity of 6.6 liters /minute<sup>(12)</sup>.
- Use of rubber dam whenever possible.
- Keeping adequate fallow time between two procedures.
- Clean and disinfect equipment and operatory surfaces with 1% sodium hypochlorite or 70% alcohol for appropriate contact times.

### For Patients with COVID-19 symptoms/ Tested positive:

The emergency procedure should be undertaken with level with 3 PPE and standard COVID-19 protocols for surgeries.

The clinics which do not have the infrastructure should refer such patients to the higher centers for the management.

### Dental Imaging Protocol:

- Minimize intraoral imaging and prefer extraoral radiographs.
- Use of double barrier (impervious covers/sleeves) for dental x ray films or RVG sensors.
- Disinfect the x ray unit handle, tube, casing, computers and monitors.
- Maintain air circulation with natural air through a frequent opening of windows by use of independent exhaust blower.
- For air-conditioned facility the guidelines of CPWD to be followed with a temperature of 24°-30°C.
- Use of indoor portable air cleaning system equipped with HEPA filter.
- Finally proper disposal of blood, body fluids, secretions and clinical waste.

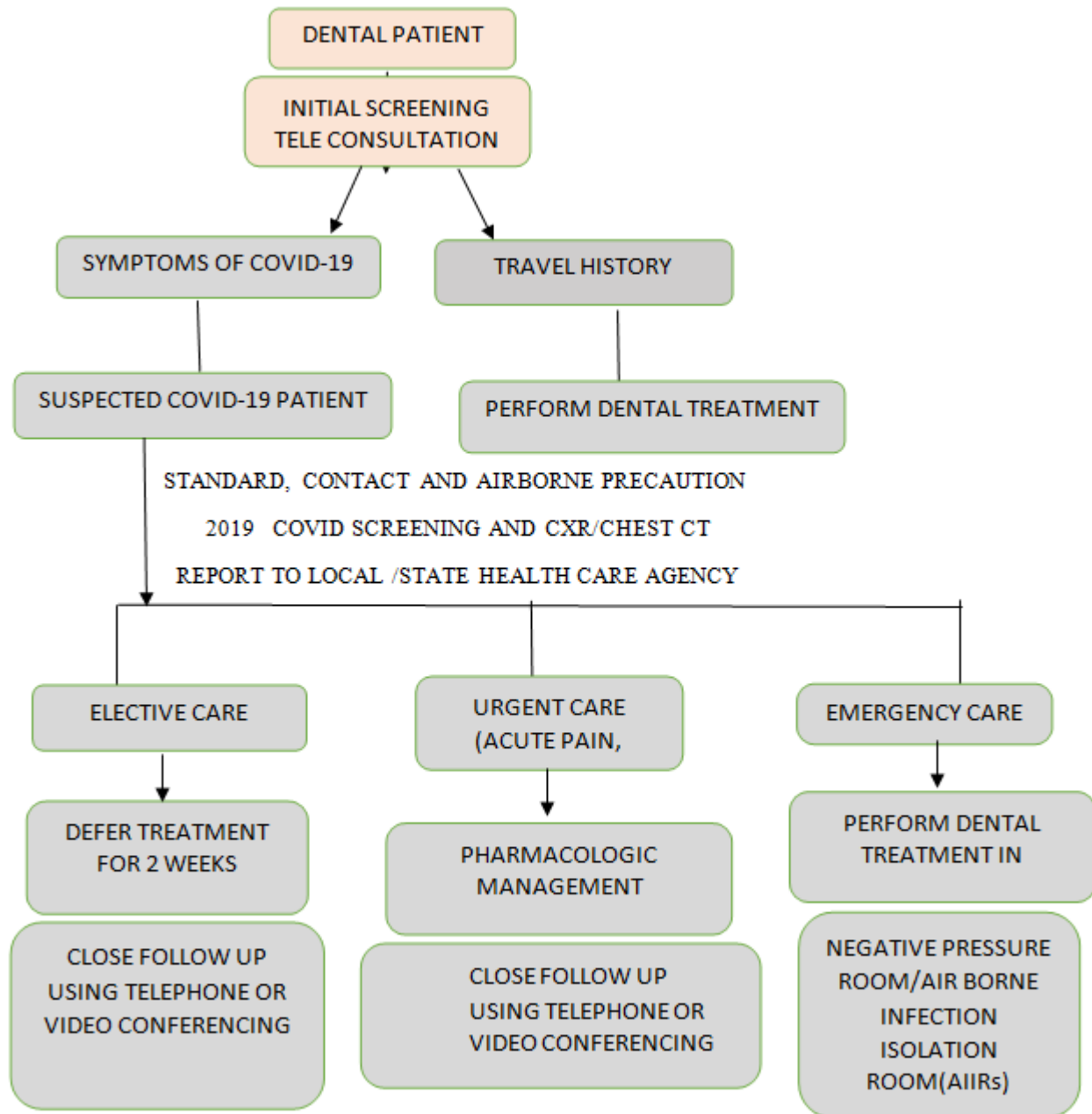


Figure 2: Screening Dental Patients

## 2. Conclusion

The COVID-19 pandemic presents a major threat for the dental professional in treating dental patients. By strict adherence in maintaining the guidelines and protocol can protect dentist and patients from contracting COVID-19<sup>(17)</sup>. Health care providing vaccines and successful therapeutic options for COVID-19 could have a positive influence on dental practice. It is mandatory for the dental practitioners to follow the precautionary and prophylactic measures in the coming weeks and months to minimize the risk of COVID-19 infection. More scientific research is required on aerosol specific risk assessments and measures that can protect the dental workforce and patients from aerosol and droplet infection. The economic and psychological aspect of COVID-19 also needs to be considered<sup>(20)</sup>.

## Conflict of Interest

The author declares that there is no conflict of interest.

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