REVIEW ARTICLE

# Recommendations for Dental Management during COVID-19 Pandemic

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## Abstract

A novel coronavirus (COVID-19) poses a big challenge for healthcare professionals around the entire world. As the salivary titer of virus is very high, the dental professionals face high risk in rendering dental services. Most of the dental services in the country through colleges and clinics are shut down due to its spread by contact with droplets and transmission by aerosols. The Dental Council of India, the Indian Dental Association, and the Ministry of Health has framed certain guidelines to provide the emergency and urgent dental care pertaining to red, orange, and green zones as declared by the government. Guidelines also address academic schedules for undergraduate and postgraduate students. This review briefs academic and clinical guidelines for dental professionals taking in consideration the current scenario. These guidelines may change from time to time depending on the course of the diseases and regional needs. It is the responsibility of healthcare facilities and individual dentists to be aware of the updates and redefine their facilities and practice accordingly.

**Keywords:** Aerosols, COVID-19, Dentists, Respiratory illness, Sodium hypochlorite.

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## Introduction

The outbreak of COVID-19 has become a challenging emergency in the healthcare system worldwide. The novel coronavirus belongs to a family of single-stranded RNA viruses known as Coronaviridae,[1] which spreads predominantly via infected droplets. This transmission mode poses significant challenges for the dental practice. It has been found that the COVID-19 virus has a high viral titer in saliva of infected patients. Saliva can have a pivotal role in the human-to-human transmission.[2] Dentistry involves working directly on the patient mouth and contact with saliva is inevitable. Most of the procedures in dentistry involve production of aerosols, thereby putting dentists in a high-risk category with risk of 92.3% as categorized by the American Dental Association and the California Dental Association.

Aerosols are liquid and solid particles (<50 µm diameter) that are suspended in air for protracted periods.[3] Aerosol generated during dental procedures can remain suspended in the room, settle on the surfaces of the dental office, or even mix with the materials used.[4] When inhaled, or through surface contact, it increases the risk of COVID-19 infection to the professionals in the dental office and the subsequent patients who visit.

Hence, in a dental care setting, it is crucial to minimize the effects of viral diffusion and transmission and infection by the COVID-19 virus. It is unsure that what permanent changes in infection control or treatment modalities of dental care might emerge in the current situation. But various dental councils and associations, according to the current available knowledge on COVID-19, have stated guidelines for continuing and resuming dental care. Dental care providers need to be aware and prepared for tackling the current challenge. This article highlights the protocols that guide the practice of dentistry in India.

## Role of Dentists in Covid-19 Screening

The dentists are directly not involved in COVID-19 screening or prevention in most of the scenarios, but the dental council has also made clear that the dental surgeons may be utilized prudently and can discharge direct duties under the COVID-19 team like duties in isolation wards or any duties assigned by the authorities but they are required to undergo adequate and specific medical training so as to perform their duties/assignment and work under direct medical supervision following all necessary COVID-19 protocols. For dental stand-alone functioning of dental colleges and hospitals, the Dental Council of India (DCI) has given clear recommendations.[5]

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## Guidelines by DCI[5]

The dental practice in India is regulated and guided by an apex body known as the DCI. It has proposed COVID-19 guidelines for the dental teaching institutes and clinics.[5]

## Academic Guidelines

According to the DCI, the dental teaching institutes are not to conduct any academic activities that involve gathering of group of people. These academic activities include conferences, workshops, etc. The faculty is instructed to engage in online teaching as measures to complete the curriculum. Interns are encouraged

to engage in self-learning and make full use of online resources like webinars. Postgraduates are to carry out all routine academic activities like seminars, journal clubs, library dissertations, and other discussions.

## Clinical Guidelines

In this context, the DCI has declared that it is individual responsibility of the practicing dentist for adopting prevention and infection-control measures.

### General Instructions

- All nonemergency procedures to be postponed to avoid cross-infection caused by clustering of patients in dental colleges and clinics.
- Display of posters of hand hygiene, infection control, and other preventive strategies at different and important locations of the dental colleges is a mandate.

### Protocol for Telephonic Prescreening

- Patients are to be encouraged to take appointments telephonically or register online before the contact appointment.
- In cases that sound like it may require a visual examination, initial view of the photograph sent by the patient or a video consultation can be done.

### Protocol for Reception/Waiting Area

- Dental clinics should minimize the number of staff and appointments per day.
- The staff should be adequately trained in the infection-control protocol.
- The patient waiting area, consultation rooms, bathrooms, etc., to be equipped with soaps, hand wash, alcohol-based hand sanitizers, tissues, etc.
- All personnel and patients to use the provided foot cover inside the clinic and discourage footwear.

### Protocol for Screening[6]

- Upon arrival, all patients should be screened for signs and symptoms of COVID-19 using a standard protocol and reporting system.
- All patients are to provide a written disclosure/consent form that has been circulated by the DCI.
- After screening, the patients are to be classified as emergency or urgency and managed accordingly (to avoid crowding of patients).
    - Situations of dental emergency: Situations that increase the patient's death risk like uncontrolled bleeding, cellulitis, or diffuse bacterial infections leading to intraoral or extraoral edemas and facial bone trauma, which may damage the patient's airways.
    - Situations of dental urgency: Situations that require priority care but do not increase the patient's death risk like acute dental pain, pericoronitis, abscesses, dental care needed for another critical medical procedure, biopsies, adjustments of orthesis and prosthesis that cause pain and compromise chewing function, dental trauma with avulsion or luxation, etc.
    - Urgent procedures should be undertaken only after teleconsultation, teletriage, consent, and through prefixed appointment only.
- Dental colleges should have a protocol for referral for patients and employees to the fever clinic either in the attached medical college or affiliated hospital.

### Protocols for Dental Operatory[5,6]

- Patient waiting area (previewing area): This area is the first point of contact with the patient. Information and caution posters regarding COVID-19 are to be displayed. Display of visual alerts at the entrance of the facility and in strategic areas about respiratory hygiene, cough etiquette, social distancing, etc., is advised. The triage dental team should wear adequate personal protective equipment (PPE). In the triage area, if a patient has positive travel history, epidemiological contact history, or fever and respiratory symptoms, the patient is advised to get tested for COVID-19 and information to be disseminated to health officials. The triage area is disinfected immediately according to protocols.
- The patients are explained about the mode of spread of COVID-19, involved risks, and they are asked to mandatorily sign an informed consent (COVID-19 informed consent available on DCI website) before the procedure.
- Guideline for ventilation: As per the latest advisory given by the Ministry of Health and Family Welfare (MOHFW)[7] on ventilation and air quality management in stand-alone dental clinics and central AC buildings. In stand-alone dental clinics or single room operatory, use of a ceiling fan should be avoided while performing procedures. Air circulation with natural air should be done through frequent opening windows and using an independent exhaust blower to extract the room air into the atmosphere. A table fan may be placed behind the operator to let air flow toward the patient. For operatory that has central air conditioning systems, return air vents in the patient area should be blocked and fresh air into the room should be allowed by opening of windows.[7]
- Keep the clinic operatory clutter free, improve air circulation, and avoid air-conditioning.[8]
- 0.01% NaOCl for disinfection of dental water lines is advisable.[8]
- Donning of appropriate PPE for dental surgeons and dental assistants is mandatory.
- Clinics with adequate infrastructure can carry out all cases whereas small-budget clinics and geriatric practices can wait till the pandemic settles.
- Fumigation of operatory on a regular basis is advised.

### Protocols for Dental Procedures

*Personal Protective Measures*

- Persona protective measures are to be strictly adhered to. Hand hygiene with use of soap and water or use of alcohol-based hand sanitizer, before and after attending to patient, is emphasized. Soap should be done at east for 20 seconds as per the guidelines of the WHO.
- Sensor taps or elbow handles and foot-operated sanitizer dispensers are advised.
- The PPE is mandatory and would comprise of the following:[7]

- Changing rooms must be available for staff and all workers for donning and doffing of PPE.
- Goggles/face shield (both to be used, fitting goggles with a soft tissue seal).
- Triple-layer surgical mask over N95 respirator during routine dental procedures.
- FFP3 standard mask should be used during treatment of COVID-19-positive patients.
- Surgical gloves should be worn during procedures.
- Disposable coverall/gowns with hood/waterproof lining are to be changed daily.
- Coverall/gown outer; maybe improvised but will need to be changed after each patient.
- Shoe covers are mandatory.
- The PPE protocol of wearing and removal should be followed and clearly designated rooms should be assigned.
- The surgical mask must be changed after every dental procedure.

*Treatment Guidelines*

- Dental treatment procedures are broadly divided into the nonaerosol-generating (non-AGP) and the aerosol-generating procedure (AGP).[8]
- Both the procedures should be preceded by preprocedural oral rinse using 1% hydrogen peroxide or 0.2% povidone iodine for 1 minute. Extraoral scrubbing of face with antiseptic wipe is advised.
- The AGP is to be done ideally in designated isolation rooms equipped with HEPA filters/augmented ventilation only. They are preferably to be performed under rubber dams and using high-volume saliva ejectors as they help to minimize aerosol or spatter in dental procedures.

*Instrument Sterilization Guidelines*

- All instruments pertaining to dental procedures are to be disinfected, cleaned, and sterilized as per the standard infection-control protocol (CDC, 2003). All instruments should be mandatorily sterilized in color-changing sterilization autoclave pouches and proper storage to be done in the UV chamber.[9]

*Sterilization of Operatory/Room*

- UV sterilization for minimum of 10 minutes between procedures is effective. The dental operatory, after the procedure, should be thoroughly fumigated and sterilized under UV light overnight.

*Biomedical Waste Management*

- All biomedical waste pertaining to patient care should be carefully disposed as per the Bio-Medical Waste (Management and Handling) Rules, 1998, amended from time to time through an authorized biomedical disposal agency by the State Pollution Control Board.

### Protocols for Patient Discharge

- Patients are advised to remask and proceed to the reception area. Hand hygiene is reinforced before they leave the clinic. The dentist has to maintain electronic treatment records only. Cashless/contactless payment methods are to be followed.[8]

### Protocols for Patient Review and Recall

- Patients should be contacted telephonically to know if they have developed any signs and symptoms that should warn the dental staff to undertake appropriate actions. He/she should be advised to inform back to the dental clinic should there be any adverse symptoms.[8]

## Conclusion

COVID-19 has become a worldwide emergency and should not be underestimated. At the same time, dentists, as health professionals, cannot neglect services. The dental practice is regulated by the regulatory authorities and should function according to their recommendations. The guidelines for dental management put forth by the DCI will ensure safe dental practice, which is the need of the hour. These guidelines may change from time to time depending on the course of the diseases and regional needs. It is the responsibility of healthcare facilities and individual dentists to be aware of the updates and redefine their facilities and practice accordingly.

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