

Dental Care During COVID-19 Pandemic: Guidelines for Teaching Hospital OPDs



Fariha Irfan ¹	BDS
Javeria Ali Khan ²	BDS, FCPS
Batool Ali ³	BDS, FCPS
Kashif Aslam ⁴	BDS, MSc
Arshad Hasan ⁵	BDS FCPS
Anwar Ali ⁶	BDS FDSRCS
Amynah Charania ⁷	BDS M.Phil

The coronavirus disease 2019 (COVID-19) pandemic has caused a worldwide cessation of routine dental care. Owing to the proximity to the source of disease, dental professionals and allied health care workers are extremely prone to infection from severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). Dental OPDs are at a high risk because of the presence of multiple factors including proximity of dental units in an OPD, requirement of strict cross infection control, skill of the operator to prevent breach in infection control which altogether increase the chances of acquiring and community dissemination of this virus. This paper thus provide guidelines for opening OPDs associated with Teaching Dental Hospitals keeping in mind this unique nature of workplace.

KEYWORDS: COVID 19, Dentistry, Practice Guidelines, Teaching Dental Hospital

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INTRODUCTION

World Health Organization announced coronavirus disease 2019 (COVID-19) caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) as pandemic on 11th March 2020.¹ The virus that originated in Wuhan City, in the late December 2019 has now infected more than 3 million individuals in 200 countries worldwide.² COVID-19 for most individuals causes mild to moderate illness, so patients could potentially present to primary care settings.³ Additionally, the route of spread of this infection are direct contact, droplets and via aerosol. Dental procedures are associated with the production of high

volumes of aerosols inside dental operator. Therefore, dental professionals are amongst the most susceptible group of health care workers.⁴

A special area of concern is the dental out-patient departments (OPDs) of teaching hospitals across Pakistan. Although, there have been a lot of guidelines for private dental practices, not much has been published about the OPDs. A guideline was prepared by the administration of Dow Dental College before going into lockdown and was disseminated to all departments and shared with Sindh Health Care Commission. However, modifications have been made continuously in the operating guidelines since the start of COVID-19 pandemic. It is therefore a matter of national duty on our part to modify the guideline and present it for dental OPDs of teaching hospitals across the nation.

These OPDs are at a high risk because of the presence of multiple factors. Among them, first is the concentration of dental units in an OPD; according to the accreditation standards of Pakistan Medical and Dental Council (PM&DC) there should be at-least 75 dental units in all the dental OPDs of a college for 50 BDS seats.⁵ Although this number is

1. Demonstrator, Department of Operative Dentistry, Dow Dental College.

2. Assistant Professor, Department of Operative Dentistry, Dow Dental College.

3. Assistant Professor, Department of Orthodontics, Dow Dental College.

4. Associate Professor, Department of Prosthodontics, Dow Dental College.

5. Professor & Principal, Department of Operative Dentistry, Dow Dental College

6. Professor & Principal, Department of Oral and Maxillo-facial Surgery, Dr Ishrat ul Ibad Khan Institute of Oral Health Sciences

7. Professor & Principal, Department of Oral Biology, Dow International Dental College.

Corresponding author: "Prof. Dr. Arshad Hasan" < arshad.hasan@duhs.edu.pk >

divided into departments, but still greater risks and precautions are associated as compared to a single dental unit. Second is the skill of the operator. Most operators are dental students who are still in a learning phase, and therefore more prone to occupational injuries incidents.⁶ Resulting breaches in the infection control protocol may predispose dental professionals and patients to infectious diseases. Third and most important factor is the provision of personal protective equipment (PPE) and related cross infection control measures. With limited cash flow due to lockdown and a resultant slowdown in the national economy, the dental OPDs generated revenue is reduced and the overall budgets of dental universities and colleges are badly affected, in addition to this the students' ability to pay hefty amount of fee is hampered.⁷ With the absence or reduction of cash flow, the ability of a dental college to provide necessary equipment and PPE can be compromised.

With this preamble, the purpose of this paper is to propose guidelines for dental OPDs of teaching hospitals of Pakistan. The authors have done a literature search and have used available evidence in the preparation of these guidelines. Also, modifications have been made to suit the working conditions and realities of our region. These are the aggregation of the authentic standard guidelines available so far, in future there may be changes according to the best available evidence and should be adopted subsequently.

GENERAL GUIDELINES FOR IMPLICATION OF DENTAL CARE:

Before opening of the dental college preparation:

- Dental and Non-dental staff needs to get educated and trained according to the latest guidelines of Covid-19.⁸⁻¹⁰
- Dental staff includes all the dentists working in the dental clinic/OPD, dental students, house officers, dental hygienists, dental assistants, lab technicians, technologists, dental nurses, central sterilization (CSSD) staff, and dental radiology staff. Non- dental staff includes administration, reception desk staff, plumbers, electrician, generator staff, lift operator, security guards, janitorial staff, staff working at pharmacy etc.
- Dental staff should be trained by attending webinars and various videos explaining the protocols. In addition to that research articles, reading material should be provided to them. The modules are given at <https://www.cdc.gov/coronavirus/2019-ncov/hcp/dental-settings.html>.
- A demonstration/drill or standard protocols exercise for the dental and non-dental staff should take place before the dental care opens to the public.
- Purchase of PPE, disinfectants and equipment like scanning thermal guns should be done before opening. For

this all the budget, tender documents and related staff meetings should be done beforehand.

- Trash cans with trash bags, preferable with foot control should be placed in abundance. Proper waste disposal protocol should be followed.
- COVID 19 pandemic awareness posters including cough etiquettes and hand hygiene instructions should be displayed appropriately in waiting areas.¹¹

Initial Patient Screening:

- Tele-phonetic screening and triaging whereby dental staff members can prioritize treatment need of patients based on emergency level of their dental condition are preferable to restrict unnecessary arrival of patient to dental hospitals.¹¹
- Initial patient screening should be done at two levels:
 1. Related to their health status including assessment of general medical conditions and risk assessment of COVID-19 infection. Screening questions for COVID-19 assessment can be included in regular medical history form as proposed by American Dental Association (ADA).⁹ Patients can then be classified as:

Figure 1: Levels of emergency¹²

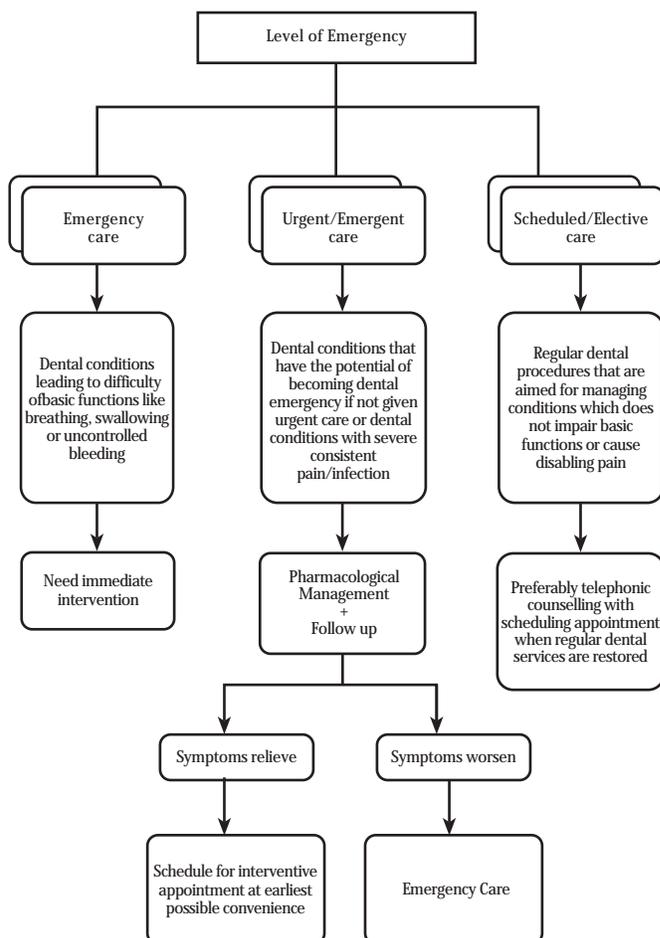


Table 1: Dental procedures falling under different emergency levels¹²

Emergency dental conditions	Conditions requiring urgent care/emergent dental conditions	Elective dental care
<ul style="list-style-type: none"> -Uncontrolled bleeding -Diffuse intra or extra oral swelling obstructing patient's airway leading to compromised breathing or with systemic involvement -Severe traumatic injury that can obstruct patient's airway 	<ul style="list-style-type: none"> -Symptomatic irreversible pulpitis -Symptomatic apical periodontitis -Acute apical abscess -Pericoronitis -Surgical post-operative osteitis -Dental trauma with avulsion -Tooth fracture resulting in pain or causing soft tissue trauma -Defective restorations causing pain -Prior dental treatment of patients undergoing critical medical procedures - Final crown/bridge cementation in case temporary restoration is unsatisfactory - Biopsy of abnormal tissue -Suture removal -Denture repair or adjustment in case of functional impairment -Orthodontic wire or appliance adjustment that is traumatizing oral mucosa 	<ul style="list-style-type: none"> -Initial oral examinations -Routine Radiography -Restorative treatment of asymptomatic carious tooth -Elective Endodontic treatment -Loss of restoration with no pain -Routine scaling and polishing -Dental trauma involving enamel &/or dentin only or asymptomatic -Extraction of asymptomatic tooth -Orthodontic procedures that are not critically necessary to prevent harm to patient or that does not address any acute condition -Routine follow-up examinations

- Patients who are confirmed/suspected cases of COVID-19 infection

- Patients who are at potential risk of infection and may be asymptomatic carriers. (With the help of screening questions those patients which are not confirm cases of COVID -19 nor they show any symptoms but have significant history of contact with COVID-19 positive patient or history of travelling can be identified which may be potential asymptomatic carriers/ their status for COVID-19 is doubtful)

- Patients who do not have any significant history, clinically healthy and asymptomatic and are at unknown risk of COVID-19.

2. Related to their dental condition which includes assessment of treatment need according to the emergency level of their condition. Treatment need for dental emergency conditions can be categorized as:

- Life threatening emergency conditions
- Conditions requiring urgent care/emergent dental conditions

- Elective dental care
- It is recommended that dental hospitals should provide their contact phone numbers, email addresses to the patients through electronic and print media or through other modes of communication so as to make it possible for the patients to make a prior consultation with the aid of telephonic interview or video conferencing.

- An ADA recommended patient screening form⁹ for COVID-19 can be utilized for the verbal screening of patients for minimizing the risk of unnecessary exposure.

Treatment Decisions:

Current recommendations for provision of dental treatment to patient includes:

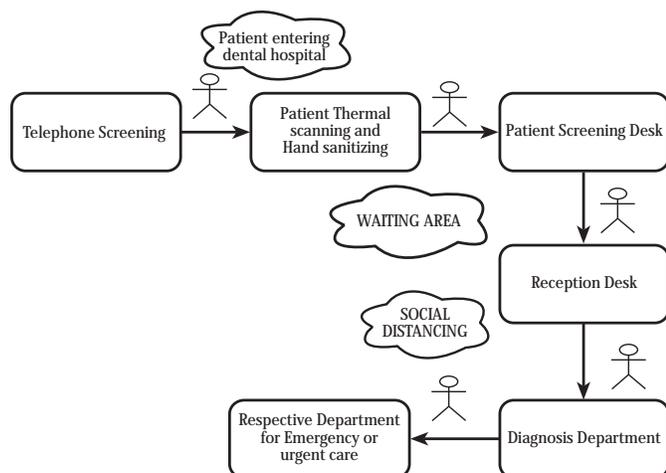
- All elective procedures should be postponed according to ADA guidelines during COVID-19 pandemic.^{9,11,13,14}
- Patients presenting with odontogenic infections or trauma requiring emergency treatment or for treatment of emergent dental condition with no prior significant history or doubtful symptoms for COVID-19 can be treated with standard dental emergency regimen along with standard and special precautions for COVID-19.
- Patients who are suspected/confirmed case of COVID-19 should only be treated for life threatening emergency condition preferably in a negative pressure room with 12 air changes per hour minimally or 160 L/s per patient at least with utilizing highest level of personal protective equipment only under specialized care by trained dental team.¹⁵
- Patients who are not in any current emergency condition requiring elective care can be explained with the transmission possibilities of COVID-19 disease along with risks and benefits of provision of treatment scheduling appointment when the condition gets better.¹⁴

Protocol for entering the Dental College hospital:

For Patients:

For provision of strict infection control following are the guidelines to be observed by the patients presenting to the dental hospital for emergency/ urgent /emergent/ dental care:

1. Physical and verbal screening of the patient at special desks when entering the dental college.²⁰ Body temperature of patients and their attendants should preferably be checked with touch less forehead thermal scanner. In case elevated temperature is noted, patient should be provided with mask and reported to Infectious disease department/isolation ward dealing with COVID-19. The data of such patient should be entered in the dental care data base. All the patients and their escort should wear face mask before entering the dental hospital premises.
2. Patient should be escorted by only one attendant. Attendant should be more than 13 years of age and less than

Figure 2: Patient protocol for entering dental teaching hospital

65 years of age.

3. Patient should be asked not to bring any unnecessary belongings.
4. At least 70% alcohol based hand sanitizer preferably wall mounted should be available for use, with a proper display of how and when to use on charts or panaflex.
5. While using elevator, well-fitting masks should be used, while maintaining a social distance from other occupants and avoiding direct physical contact with lift buttons and other objects.
6. Elevators should be disinfected regularly.

For Dental Staff:

Following guidelines and recommendations should be followed by dental staff upon entry:

1. All the dental staff should wear face mask before entering the dental college/ hospital premises. After reaching their respective departments they will remove their mask and wear the PPE again.
2. A health desk may be created at the entry of the hospital where verbal and physical screening of dental staff should be done for symptoms of COVID-19. A touch less forehead thermal scanner may be used at this health desk.
3. Dental Staff must receive a prior training of donning, use and doffing of PPE according to the Occupational Safety and Health Administration PPE standards.¹⁶
4. Upon entry dental staff should select appropriate protective equipment according to their OSHA's risk exposure level as will be discussed later in the article.
5. Donning of PPE and attire change should be done in separate designated areas.¹⁶

Preparation for reception desk/ registration counter:

Recommendations for reception desk/registration counter

preparation includes:

- Reception and screening desk staff should wear face masks and eye protection, or a transparent glass barrier should be installed in between because they are the first point of contact after patient entry inside dental hospital.⁹
- Individual phone headsets should be provided to each front desk staffer so as to lessen the spread virus through single phone head piece.⁹
- Better to have paperless counters. Use of patient management software is recommended.
- Disposable pens should be used or patients instructed to bring their own pen in screening call.⁹
- Disinfectant wipes or disinfectant spray should be available to clean computer monitors, mouse, printers, or any other touchable surfaces. If surfaces have dirt they should be cleaned prior to disinfection.^{9,11}
- To disinfect, use products meeting Environment Protection Agency (EPA) criteria for use against SARS-CoV2 which are appropriate for the surfaces.^{9,11,17}

Preparation for Patient waiting area:

Recommendations for waiting area preparation includes^{9,11,17}:

- Waiting area should be displayed with awareness about COVID-19 infection control regarding hand hygiene protocols, cough and sneezing etiquette, instructions for proper disposal of tissue papers, face masks and gloves on charts, panaflex or on digital screens.
- Waiting area should be well ventilated and designed with a seating arrangement that follow appropriate social distancing preferably through placing chairs/sofas/benches approximately 6 feet or 1 meter apart.
- Waiting area should be provided with appropriate number of trash cans with trash bags. Tissue papers and alcohol-based hand rubs should also be placed.
- Toys, reading materials, remote controls or other communal objects that can have patient contact should preferably be removed from the waiting area.
- Floors inside waiting area should be cleaned with soap and water or a disinfectant.
- Other touchable surfaces like tables, chairs, benches, door knobs, switch boards and switches should be routinely cleaned with an EPA approved disinfectant against SARS-COV-2.

Reassurance of patient regarding infection control:

- Re-assure patients regarding maintenance of infection control procedures in accordance with latest guidelines, ensuring them that their safety is the priority of dental healthcare providers. This can be done through panaflex or screens displayed in waiting area or through letters, emails, mobile short message service (sms).

- Patients should be reassured that authentic infection control guidelines will be followed as given by American Dental Association (ADA), Centers for Disease Control (CDC), Occupational Safety and Health Administration (OSHA), World Health Organization (WHO), Government of Pakistan official site for Covid-19 (covid.gov.pk).^{8-10,18,19}

Dental team protection protocol and strategies:

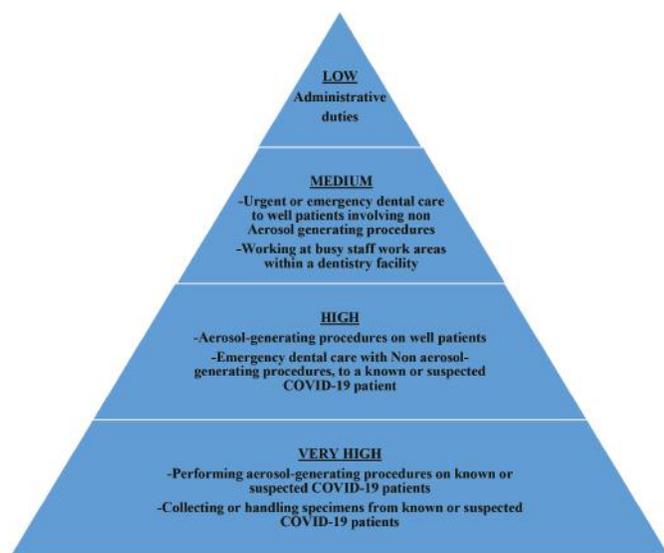
Hand Hygiene:

- WHO has approved hand washing with water and soap as well as use of alcohol based hand rub for hand hygiene.²⁰
- 70-90% Alcohol based hand rubs should only be employed if hands are not visibly soiled.²⁰
- Dental staff should be instructed to perform hand hygiene upon entry into the workplace. WHO recommends employing hand hygiene before and after doing a dental procedure or aseptic/cleaning procedure and after touching inanimate objects.¹⁸

Personal protective measures for Dental Staff:

- Dental team can be categorized according to OSHA's 'occupational exposure risk pyramid' 3 that can help determining the risk levels of a dental team member and provision of personal protection measures accordingly. These include:
 - Low Exposure Risk
 - Medium Exposure Risk
 - High Exposure Risk
 - Very High Exposure Risk

Figure 3: OSHA's 'Occupational exposure risk pyramid'¹²



1. Low exposure risk:

- Health Care Personnel and other employees involved in

administrative duties inside Dental hospital and not involved in clinical duties or contact with patients come under this category.¹⁹

- These workers have minimal contact with co-workers and general public.¹⁹
- Personal protective measures which can be employed for this exposure risk category involves primary protective measures including face mask, gloves, gowns, and goggles or face shields.¹⁹⁻²¹

2. Medium exposure risk:

- The Health Care Personnel categorized with this exposure risk provides urgent or emergency dental care to well patients involving non Aerosol generating procedures.¹⁹
- These workers have high frequency interaction with the general public.¹⁹
- Personal protective measures which can be employed for this exposure risk category involves secondary protective measures with advanced protective care including Respirators (N95 or higher), latex or nitrile gloves, disposable working cap, surgical gowns, isolation clothing and goggles or face shields.¹⁹⁻²¹

3. High exposure risk:

- The Health Care Personnel categorized with this exposure risk provides Emergency dental care with Non aerosol-generating procedures, to a known or suspected COVID-19 patient or perform aerosol generating procedures on well patients.¹⁹
- These workers have high frequency interaction with the general public.¹⁹
- Personal protective measures which can be employed for this exposure risk category involves tertiary protective measures with intensified protective care including Respirators (N95 or higher), latex or nitrile gloves, disposable working cap, surgical gowns, isolation clothing and goggles or face shields, special protective outwear, impermeable shoe cover.¹⁹⁻²¹

4. Very High exposure risk:

- The Health Care Personnel categorized with Very high exposure risk provides Emergency dental care with aerosol-generating procedures to a known or suspected COVID-19 patients.¹⁹
- These workers have contact with known or suspected COVID-19 patients.¹⁹
- Personal protective measures which can be employed for this exposure risk category involves tertiary protective measures with intensified protective care including Respirators (N95 or higher), latex or nitrile gloves, disposable working cap, surgical gowns, isolation clothing and goggles or face

shields, special protective outwear, impermeable shoe cover.^{19,21}

- Strict Engineering control measures including equipped isolation rooms need to be employed when working under such exposures.¹⁹

Specifications for Face masks and Respirators:

Regularly used surgical masks do not provide adequate protection against SARS-CoV2. However, respirators provide better protection and seal. They are available as full and half mask types.²²

Following recommendations can be considered regarding face mask and respirators use during COVID-pandemic:

- A triple layered surgical mask should be worn by dental health care providers when within 1-2 meters of patient.⁹
- For aerosol generating procedures it is advised to use a particulate respirator with protection level equivalent to National Institute for Occupational Safety and Health (NIOSH)-certified N95 or European Standard Filtering Face Piece 2 (EU FFP2).^{11,14}
- For performing emergency dental treatment in suspected COVID-19 cases recommendation is to use respiratory protection with higher protection level for example EU FFP3 respirators conforming to European Standard 149 (EN149).^{11,14}
- Mask fit tests are mandatory before the use of respirators especially. There are mainly two tests; quantitative and qualitative methods for testing a mask fit. Quantitative is done by an instrument and gives a numerical reading to check the masks effectiveness however qualitative relies on patients olfactory and taste sense. These methods are mentioned in OSHA regulations and in the Hospital Respiratory Protection Program Toolkit at <https://www.cdc.gov/coronavirus/2019-ncov/hcp/dental-settings.html>
- The fit test provided by your dental college will only allow you to wear the appropriate model/size/brand mask. Every brand requires separate fit test for example if you qualify a fit test of certain brand it does not mean you are qualified for all.
- The company 3M has enlisted alternatives to N95 at (<https://multimedia.3m.com/mws/media/9577300/respirators-and-surgical-maskscontrast-technical-bulletin.pdf>)

Aerosol generating procedures:

- Aerosols are <50µm diameter particles that are considered to have low settling velocity and once generated can remain suspended in air for upto 6 hours and inanimate objects for upto 9 days.^{14,23,24}
- Aerosols when combined with body fluids like saliva and blood present in oral cavity create 'bioaerosols' and thus render the dental team highly susceptible to infection.^{14,24}

- Dental procedures involving the use of high speed handpiece, ultrasonic scaler and air water syringe are considered as high aerosol generation procedures and thus demand extra precautions to be employed.⁹
- Minimally invasive/ atraumatic techniques should be practiced to avoid aerosol contamination.²⁵
- Avoid the use of aerosols generating equipment which include: high speed hand piece, triple syringe (air/ water syringe) and ultrasonic scalers. Where aerosols generating procedures are required use four handed dentistry, high volume suction devices and rubber dam to reduce the aerosols and droplets.²⁵
- Intraoral x-ray examination can stimulate saliva secretion and coughing. Therefore, extra-oral dental radiographies should be consider as appropriate alternatives.⁹

Engineering controls:

It is recommended to ensure a ventilation system at the dental OPDS

- The OPDS should be well ventilated providing air movement from clean to contaminated (patient treatment zone) areas. All the windows should be open to allow sun light and cross-ventilation.²⁵
- Heating,ventilation, air conditioning (HVAC) maintenance individuals should check the filtration efficiency of air conditioners, temperature regulating devices and ensure that their filtration capability would be at its maximum limit. Also they should provide safely increase percentage of outdoor fresh air to the operatory.²⁵
- Restrict as much as possible the demand controlled ventilation and continuously use exhaust fans.²⁵
- Use of High efficiency particulate arrestance (HEPA) should be used during aerosols generating procedures and after that. It should be placed close to dental unit but should not be obstructed by dental staff. This will reduce the droplets along with HVAC and room ventilation.²⁵
- Upper room ultra-violet germicidal irradiations (UVGI) are also suggested in addition to HEPA and HVAC.²⁵

Patient placement in open floor plan:

- The patients should be seated with 6 feet distance apart on the dental units.
- Easy to clean plastic or glass floor to ceiling physical barriers should be placed between dental units. These partitions can be fixed or movable.²⁵
- It is Suggested to have barriers between dental units if not then the patients should be seated with 6feet distance leaving dental units and only those dental units should be used where there is enough space around with good ventilation.²⁵
- Limit the number of patients in the OPDs depending

upon the staff, facilities and time to disinfect and ventilate the room.²⁵

- The waiting period should be at least 15 minutes for the dental staff after an aerosol generating procedure and departure of the patient to start disinfecting and cleaning protocols.²⁶

Special negative pressure isolation areas in dental colleges/ institutes:

- It is suggested to construct negative pressure isolation dental areas to be used in cases of such pandemics. A negative pressure room maintains an increase pressure within the room than outside, the air enters the room through specific devices. The air released into the environment after being treated by various chemicals and UV light devices. The European network of infectious disease (EUNID) states a negative pressure room should have at least 6 times air changes per hour along with an anteroom.²⁷

Mouth rinse before dental procedures:

A pre-procedural mouth rinse (PPMR) like 1% hydrogen peroxide or 0.2% povidone iodine would be most useful before starting any dental procedure.^{14,23,24} However, CDC states that the effectiveness of PPMR on COVID-19 has not studied and published specifically but antimicrobials may be responsible for decreasing the COVID-19 load in the environment.

Patient examination protocols:

- OPDs should be restricted to emergent/urgent and emergency care only.
- Health screening of patients should be done on entry via thermal scanning and interviewing of questions related to COVID-19 susceptibility.
- Hand sanitizers should be provided to the patients after entry inside hospital.
- Dental personnel involved in general and oral examination of patients should be wearing proper PPE.

Disinfection of the clinical settings:

- The clinic settings should be cleaned and disinfected in accordance with the standard protocol.⁸
- To disinfect, use products meeting EPA's criteria for use against SARS-CoV2 which are appropriate for the surfaces.²⁵
- Dental OPDs should be cleaned and disinfected according to OSHA guidelines as these procedures are adequate against SARS-CoV-2.^{10,26,27}
- Dental operatories and high level isolation rooms where AGPs are performed on COVID or Non-COVID patients can also be cleaned and disinfected using OSHA guidelines.^{26,27}

- Standard practices from CDC guidelines are recommended for disinfection and sterilization of dental devices utilized on providing dental care on COVID suspected patient.^{26,27}

- Water and cleaning agents should be used to pre-clean surfaces prior to applying an EPA-registered, hospital-grade disinfectant.

(OSHA Workers and Employees).

- EPA-registered, hospital-grade disinfectant for appropriate contact times (as indicated on the product's label) are appropriate for SARS-CoV-2 in settings, including those patient-care areas in which aerosol-generating procedures are performed.²⁸
- Disinfectant List N available on the EPA website can be visited for EPA-registered disinfectants that have qualified under EPA's emerging viral pathogens program for use against SARS-CoV-2.¹⁷

Other disinfecting methods:

- The effectiveness of ultrasonic waves, high intensity UV radiation, and LED blue light against COVID-19 virus is still unknown according to CDC.²⁹
- The installation of sanitizing chambers is not recommended by CDC in reducing the COVID-19 spread. These chemicals can cause eye, skin and respiratory irritation and thus cause damage to the body.²⁹

Management of clinical dental waste:

Dental clinical waste should be managed according to CDC infection control guidelines along with special precautions for COVID-19 as following^{8,9}:

- The waste (including disposable protective equipment after use) should be transported to the storage area of the institute timely.
- The reusable instruments and items should be pre-treated, cleaned, sterilized, and properly stored in accordance with the guidelines. Better to be done at central sterilization department.
- Clinical dental waste generated by the treatment of patients with suspected or confirmed COVID-19 infection and/or contaminated with body secretions and blood are regarded as 'infectious medical waste'.
- Double-layer medical waste package bags and "gooseneck" ligation should be used.
- Package bags should be marked and their disposal should be performed according to the requirement for the management of waste.

Pregnant staff members:

1. Pregnant staff members should seek and follow medical guidance from their physician regarding work.

2. Information on COVID-19 in pregnancy is limited; offices may want to consider limiting exposure of pregnant staff to patients, especially during higher risk procedures (e.g., aerosol-generating procedures) if feasible, based on dental staff availability.³²

Specific Guidelines for Dental Specialties: Operative Dentistry (including Endodontics)

1. Use rubber-dam when use of a dental high speed handpiece is necessary. This will reduce generation of contaminated aerosols.³³
2. Wiping the isolated tooth and rubber dam with iodine scrub may further reduce viral load.
3. Silver diamine fluoride may be used to arrest active dental caries.
4. Chemo-mechanical caries removal or atraumatic restorative technique may be used for management of dental caries.³⁴
5. For treating symptomatic pulpitis:³⁴
 - a. After adequate anesthesia, excavators may be used to remove caries and expose pulp.
 - b. Alternatively, chemo-mechanical caries removal may be used to remove caries.
 - c. The exposed inflamed pulp is then irrigated with full concentration (5.25%) sodium hypochlorite copiously to devitalize it.
 - d. A care is taken not to introduce any instrument into pulp.
 - e. Once the bleeding stops a temporary restoration is placed.
6. If utilization of handpiece is necessary 'Anti-retraction dental handpiece' with specially designed anti-retractive valves or other anti-reflux designs are strongly recommended as an extra preventive measure for cross-infection.

Prosthodontics

1. Removable Prosthodontics
 - a. Use well-fitting trays, avoiding sensitive areas of oral cavity to prevent gag or cough.
 - b. Use of topical anaesthesia may reduce occurrence of cough reflex during impressions.
 - c. Usual disinfection of impressions is highly recommended.
 - d. While adjusting a prosthesis which requires repeated insertion/removal from oral cavity, immerse it in a disinfectant before adjusting with a rotary instrument. Do this each time it is removed from mouth.
 - e. Same holds true for impressions or others materials requiring multiple insertion/ removal from oral cavity.
2. Fixed Prosthodontics
 - a. Same precautions for impressions and prosthesis adjustments as above.
 - b. Crown preps may be necessary for crack teeth or teeth

with completed Endodontic therapy where delaying may predispose to crown fracture.¹⁶

- c. Loose crowns represent loss of function and an emergent condition. Therefore, it may require immediate care.
- d. Consider using a rubber-dam for crown preparations keeping margins supra gingival.
- e. A split dam technique may be used for crown/bridge preparation in certain cases.
- f. Disinfection of the field with Iodine scrub may further reduce the virus load.

Periodontology:

1. Ultrasonic scaling is not recommended since it is one of the highest Aerosol Generating Procedure.
2. Manual scaling with hand instruments is recommended and may be supplemented with careful polishing. Reported efficacy of manual scaling in removing plaque and calculus is acceptable.³⁵

Oral and Maxillo-Facial Surgery:

1. Use of resorbable sutures is recommended.
2. Treat the patient in supine position so that there is an acceptable distance of operator from oral cavity.¹⁴

Orthodontics:

1. Removable appliances
 - a. If no pain & discomfort, than patient does not need to be seen on regular appointment
 - b. If mild discomfort = continue wearing along with topical or oral analgesia
 - c. If severe discomfort = stop wearing the appliance and store it in proper container
 - d. For aligners = switch to the next aligner as recommended by the orthodontist if the patient has the entire set of aligners
 - e. Broken or lost aligner = wear the previous aligner to avoid major relapse
 - f. Functional appliance = if broken or not fitting, send intraoral pictures to orthodontist and do as suggested by him
 - g. Headgears / facemask = wear as per routine and send intraoral picture after a month duration to avoid over correction of malocclusion. Stop wearing the appliance if recommended by your clinician.
2. Fixed Orthodontics
 - a. Sharp wire ends (retainer or braces) = use orthodontic wax or try bending it with tweezers or a pencil with rubber back. If severe discomfort, cut the ends with a sterilized nail cutter after boiling in water at 100°C temperature
 - b. Loose bracket = no issue if attached to the wire with ligature tie. If tie removed than remove the bracket with a sterilized tweezer. Use orthodontic wax if discomfort or

irritating the lip or cheek

c. Lost ligature tie or power chain = not an emergency or painful situation. Patient may be seen comfortably after pandemic ends. Cut frayed ends with sterilized scissor if need persists.

d. Abscess around molar bands = contact clinician for medication (analgesic and / or antibiotic). Maintain oral hygiene and perform saline rinses

i. Trans palatal arch / quad helix/ distal jet/ Nance = leave it in place untouched. If broken or sharp ends use orthodontic wax.

CONCLUSION

This pandemic has changed the way Dentistry is practiced. The future generations of dentists will be trained in literal space suits fearing the arrival of next pandemic. We must be ready for the next one since it may be worse than this time. For this preparation, we need to change a lot of work practices as mentioned but not limited to the guidelines presented above. It is the moral obligation of every practicing dentist to keep him/herself abreast with latest information as this is an actively developing situation.

CONFLICT OF INTEREST

None declared

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