

Guidelines for Providing Dental Care Services during COVID-19 - An Excerpt from Guidelines of Ministry of National Health Services, Regulations & Coordination, Pakistan

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The practice of dentistry involves the use of rotary dental and surgical instruments such as hand pieces or ultrasonic scalers and air-water syringes. These instruments create a visible spray that contains large particle droplets of water, saliva, blood, microorganisms, and other debris. This spatter travels only a short distance and settles out quickly, landing on the floor, nearby operatory surfaces, dental health care personnel (DHCP), or the patient. The spray also might contain certain aerosols. Surgical masks protect mucous membranes of the mouth and nose from droplet spatter, but they do not provide complete protection against inhalation of airborne infectious agents. When practicing in the absence of Air borne precautions, the risk of SARS-CoV-2 transmission during aerosol generating dental procedures cannot be eliminated. During the course of this pandemic, given the high transmissibility of the

disease and considering that routine dental procedures usually generate aerosols, alterations to dental treatment should be considered to maintain a healthy environment for the patients and the dental team.

Transmission Routes of 2019-nCoV and Controls in Dental Practice

Dental care settings invariably carry the risk of 2019-nCoV infection due to the specificity of its procedures, which involves face-to-face communication with patients, and frequent exposure to saliva, blood, and other body fluids, and the handling of sharp instruments. Three ways have been identified for Coronavirus disease-2019 (COVID-19) transmission in dental practices.

Airborne Spread

Many dental procedures produce aerosols and droplets contaminated with patient's saliva and even blood. In addition to the infected patient's cough and breathing, dental devices such as high-speed dental hand piece uses high-speed gas to drive the turbine to rotate at high speed and work with running water generating a large amount of infected aerosol and droplets. Thus, droplet and aerosol transmission of 2019-nCoV are the most important concerns in dental clinics and hospitals.

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Contact Spread

A dental professional's frequent direct or indirect contact with human fluids, patient materials, and contaminated dental instruments or environmental surfaces makes a possible route to the spread of viruses. In addition, dental professionals and other patients have likely contact of conjunctival, nasal, or oral mucosa with droplets and aerosols containing microorganisms generated from an infected individual and propelled a short distance by coughing and talking without a mask. Contaminated surfaces spread COVID-19 can persist on surfaces like metal, glass, or plastic for up to a couple of days serving as potential source of transmission. Dental practices derived droplets and aerosols from infected patients and contaminated dental devices are likely to contaminate the whole surface in dental offices.

Preventive Measurements

Telephone Triage

Conduct Telephone triage for all patients in need of emergency dental care. Assess the patient's dental condition and determine whether the patient needs to be seen in the dental clinic. If dental treatment can be delayed, provide patients with detailed home care instructions and any appropriate pharmaceuticals.

Waiting Area

- Apply social distancing protocols in waiting area for patients incorporating at least 6 feet (2meters) distance among people.
- Have all pre-screened patients use recommended anti septic hand disinfectants and provide facemask to patients with respiratory symptoms.
- Appoint patients according to slots and avoid appointing multiple patients at same time.
- Schedule appointments apart enough to minimize possible contact with other patients in the waiting room.
- Prevent patients from bringing companions to their appointment, except for instances where the patient requires assistance (e.g., paediatric patients, people with special needs, elderly patients, etc.). If companions are allowed for

patients receiving treatment, they should also be screened for signs and symptoms of COVID-19 during patient check-in and should not be allowed entry into the facility if signs and symptoms are present (e.g., fever, cough, shortness of breath, sore throat). Any person accompanying a patient should be prohibited in the dental operatory.

- Print and place signage in the dental office for instructing patients on standard recommendations for respiratory hygiene/ cough etiquette and social distancing.
- Remove magazines, reading materials, toys and other objects that may be touched by others and which are not easily disinfected.

Personal Protective Equipment (PPE)

- Use the highest level of PPEs including gloves, a gown, eye protection (i.e., goggles or a disposable/reusable face shield that covers the front and sides of the face), and an N95 or higher-level respirator during emergency dental care for patients without COVID-19.
- Conduct an inventory of available personal protective equipment (PPE) supplies and try to keep them in stock.
- Provision of Emergency Care to Patients with COVID-19.

If a patient arrives at facility and is suspected or confirmed to have COVID-19, following actions should be recommended:

- Give the patient N95 mask to cover his or her nose and mouth.
- If not acutely sick, send the patient home and instruct the patient to call a medical provider.
- If acutely sick (for example, has trouble breathing) refer the patient to a medical facility.
- If emergency dental care is medically necessary for a patient who has, or is suspected of having COVID-19, Airborne Precautions (an isolation room with negative pressure relative to the surrounding area and use of an N95 filtering disposable respirator for persons entering the room) should be followed.
- Dental treatment should be provided in a hospital or other facility that can treat the patient using the appropriate precautions.

Provision of Emergency Care to Non-COVID-19 Patients

- Standard and Transmission-based Precautions and Personal Protective Equipment (PPE) are recommended and must be in practice.
- Standard Precautions include: Hand hygiene, use of PPE, respiratory hygiene/etiquette, sharps safety, safe injection practices, sterile instruments and devices, clean and disinfected environmental surfaces. If available, DCP should implement Transmission-Based Precautions. Necessary transmission-based precautions might include patient placement (e.g., isolation), adequate room ventilation, respiratory protection (e.g., N-95 masks) for DCP, or postponement of non-emergency dental procedures.
- Wear a surgical mask and eye protection with solid side shields or a face shield to protect mucous membranes of the eyes, nose, and mouth during procedures likely to generate splash or spattering (large droplets) of blood or other body fluids.
- Surgical masks are one use only, and one mask should be used per patient if your mask is damaged or soiled, or if breathing through the mask becomes difficult, you should remove the face mask, discard it safely, and replace it with a new one.

Treatment Considerations

- Intraoral imaging should be restricted by Dental care provider (DCP) and extraoral radiographs should be utilised to reduce the excessive salivation and gag reflex associated with intraoral radiograph.
- Have patients rinse with a 1.5% hydrogen peroxide or 0.2% povidone for at least 15 seconds before each appointment.
- Disposable and single-use instruments and devices should be used whenever possible to reduce the cross-infection risks.
- Rubber dam should be used if an aerosol-producing procedure is being performed to help minimize aerosol or spatter.
- The dental treatment should be as minimally invasive as possible.

- Aerosol-generating procedures should be avoided whenever possible and DCP should prioritize the use of hand instrumentation.
- 4-handed technique for controlling infection should be used.
- Hand-pieces should be cleaned after each patient to remove debris followed by heat-sterilization.
- Anti-retraction functions of handpieces may provide additional protection against cross contamination.
- Prefer the use of high-volume evacuators. DCP should be aware that in certain situations, backflow could occur when using a saliva ejector and this backflow can be a potential source of cross-contamination.
- Use resorbable sutures (i.e. sutures that last 3 to 5 days in the oral cavity) to eliminate the need for a follow up appointment.
- DCP should minimize the use of a 3-in-1 syringe as this may create droplets due to forcible ejection of water/air.
- Disinfectants (hypochlorite, ethanol) in the handpiece and 3-in-1 syringe water supplies have been reported to reduce viral contaminants in splatter, but its action on human Coronavirus is unknown.
- Aerosol-generating procedures should be scheduled as the last appointment of the day. For an aerosol-generating procedure performed without N95 masks and only surgical facemasks, regardless of disinfection procedures being effectively executed subsequent patients and DCP are at moderate risk for COVID-19 infection and transmission.

General Prevention Practices for Dentists

- Screening every asymptomatic patient meticulously.
- Considering every patient as a potential asymptomatic COVID-19 carrier.
- Identifying the urgent need of the patient and focusing on managing it with minimally invasive procedures.
- Categorise and identify required dental treatment according to the urgency of the required treatment and the risk and benefit associated with each treatment.

- If basic PPE, including surgical facemasks are not available, do not proceed with any dental procedure, regardless of emergency/urgent patients.
- Clean and disinfect public areas frequently, including waiting rooms, door handles, chairs, and bathrooms.
- Non-dedicated and non-disposable equipment (e.g., handpieces, dental x-ray equipment, dental chair and light) should be disinfected according to manufacturer's instructions.
- Hand pieces should be cleaned to remove debris, followed by heat-sterilization after each patient.
- Patient companions should wait outside clinic or in car.
- Concerned staff should maintain a list of patients who will not be coming in for in-person visits in charts or find another mechanism that fits dental office's workflow. It is critical that a list of dental patients that have been referred to other settings due to suspected COVID-19 infection be maintained.
- If a patient with a confirmed diagnosis for COVID-19 within the last 14 days, who present with respiratory symptoms, is treated in the dental office, or if any patient is treated without the appropriate PPE, these are considered high-risk scenarios. Dentist and members of the dental team should proceed to 14-day quarantine.
- Patients with a resolved COVID-19 infection can be seen in a dental setting at least 3 days (72 hours) since COVID-19 infection symptoms resolved and at least 7 days since their symptoms first appeared (defined as resolution

of fever without the use of fever-reducing medications and improvement in respiratory symptoms) (e.g. cough, shortness of breath).

- Clinically recovered patient should be advised to bring report of two negative RT-PCR tests from respiratory specimens at 24 hours interval done at least eight days after onset of symptoms to ensure that he has completely recovered.

CONFLICT OF INTEREST

None to declare.

FINANCIAL DISCLOSURE

None to disclose.

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Author's Contribution

SRS: Drafting of manuscript and contribution to intellectual content.

SZ: Final approval of manuscript.

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