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Guidelines

Return to Work Guidance for Providing Dental Care Services In COVID-19

Objective

These return to work guidance maybe considered as a continuation of initial guidelines issued for dentists and dental patients' management during the COVID-19 pandemic

Rationale

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. 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

For dentists returning to work in dental practices, these guidelines maybe looked upon by clinical practices. The clinicians may choose to limit their procedures in early stages with limited number of patients and can choose to add more with improving condition countrywide. However, it must be kept in mind that these guidelines supplement but do not replace the general infection prevention and control recommendations for COVID-19 and initial guidelines issued for dental services. Furthermore, the individualized decision making on how to apply these guidelines may be highly dependent on the environment of the practice and an individual clinician best clinical judgement

Communication and Screening

Communicate with patients on call, emails or social media and provide them with reassurance that it is safe to visit their dentist and your practice is following all necessary measures. It is important to telephone triage the patients and take specific Covid-19 history and informed consent before they visit dental office. Inform the patient about your practice policies and that they will be screened on arrival to dental office. Request to limit the extra companions coming along to the dental office and take preliminary history of the problem to identify the need of urgent or non-urgent dental procedures

Staff & Employee Protection

Conduct infection control training workshops with all your staff using regular and effective

communication. A lead person from among the staff maybe appointed (applicable to practices with more than 2 employees) who can complement the training process, preparation and regular implementation of the developed SOPs

Practice managers or owners should hold individual conversations with staff for their concerns and deal with them sensibly and politely. Discuss the changes required for working arrangement in the waiting area clinic environment. It is important to reassure them that they are returning to a safe environment with required protocols in place

All staff should be assessed for risk as ongoing practice and anyone demonstrating symptoms or having symptomatic household contacts should not be allowed to work and should be instructed for self-isolation and staff with suspected covid-19 should be arranged for testing as per government guidelines. After a period of 14 days, if they are symptom free they may return to work.
Staff should be trained strictly to adhere to the guides of social distancing and hand hygiene issued by government in light of Covid-19 and should be advised to avoid unnecessary contact with each other.

Mandatory Preventive Measurements

Walk in Patient Management

Upon entry into the dental office:

- Screen all patients in the triage zone
- Ask questions about COVID-19 symptoms and contact with COVID-19 patients
- Record contact information (for calling patient, follow up, and contact tracing)
- Verbally explain clinic policy for treatment during the pandemic
- If the case is non-urgent, the patient should not be seen immediately, and instead contacted by the dentist for a remote consultation using appropriate communication technology
- If a patient is positive for symptoms of COVID-19, Government of Pakistan dental practice guidelines must be followed (do not treat)
- Ask the patient to wait in their transport or in the waiting area, outside or inside the clinic
- Ask patients to call and report any illness or systemic symptoms they develop after their visit to the clinic
- Give patient a surgical mask if the patient is not wearing one
- Offer hand disinfectant
- Call the patient when ready and open the door for the patient

Scheduled Patient Management

- All patients who call the clinic for a consultation must initially be scheduled for a remote dentistry consultation
- This remote dentistry session includes:
    - Screening patients for COVID-19 by asking relevant questions

  - Taking patient history and categorizing urgency of treatment
  - For non-emergency cases, advice may be given on the phone
- If the patient requires urgent treatment
- Brief the patient about information relevant to their treatment including cost, post procedure instructions and follow up, and take verbal informed consent
- Appointments for patients must be spaced out such as to avoid patients waiting in the seating area
- If clinic ventilation is not adequate, schedule one aerosol generating procedure at the end of the day

Clinical Infrastructure

Due to variable financial status of different dental practices, clincis may be categorized as:

Category A: Clinics confined to one room or hall. The dental surgery/surgeries are not adequately partitioned from the waiting and reception area. Total staff number may be as low as 2, with one dentist and an assistant. Lavatory facilities may not be present or may be shared with other building inhabitants. Minimal infection control facilities available

Category B: Clinics with more than one room, where the surgery/surgeries and reception/waiting area have ceiling high partitions with interconnecting doors which may be closed. Lavatory facilities may be shared among patients and staff. Two assistants may be available for each surgery. Basic PPE and infection control supplies are available

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Category C: Clinics with good infrastructure and purpose-built facility, able to meet international guidelines

Clinic Reorganization

For rationalization of clinic areas, zones may be marked on the floor using a material friendly with frequent disinfection

Triaging Zone:

- This area is for screening of both walk in and scheduled patients
- Thermometer and disinfection wipes/hand sanitizer should be present for screening
- A non-contact infrared thermometer is recommended

Seating Area:

- Place chairs in the waiting room at least 2 meters apart
- Remove toys, magazines, and other frequently touched objects that cannot be regularly cleaned or disinfected from waiting areas
- Hand sanitizer should be available
- Minimize the number of persons waiting in the waiting room
- Patients may opt to wait in a personal vehicle or outside the dental facility where they can be contacted by mobile phone when it is their turn for dental care

- Minimize overlapping dental appointments

Donning & Doffing Zones:

Donning Zone:

- may be established in a clean area, outside the dental surgery, either in a dedicated room, or in a corridor on the "clean" side of the surgery door
- may include the clean storage area
- Should be just inside the door of the surgery, or
- in the corridor outside on the "dirty" side of the door, or in a separate room

PPE Donning (wearing) Sequence:

1. Perform hand hygiene
2. If double gloving, put on gloves
3. Put on shoe covers (if applicable)
4. Put on gown
5. Put on mask/respirator
6. Put on eye protection
7. Put on head cap (if applicable)
8. Perform hand hygiene
9. Put on gloves

The doffing zone:

- should have adequate ventilation
- may be located next to the waste disposal area, laundry collection/disinfection area, and showering facility
- Both the zones may be in the same ante-room to the surgery, with a clean and a dirty side
- A changing area may also be established where clinic staff can remove street clothing to change into clinic attire i.e. scrubs on entry into clinic, and vice versa on exit from clinic

PPE Doffing (removing) Sequence:

1. If double gloving, remove outer gloves
2. Remove shoe covers (if applicable)
    a. Or disinfect shoes including soles, on exiting the dental surgery
3. Remove head cap (if applicable)
4. Remove gown and gloves together

a) Break the ties at the neck by pulling on the upper front portion of the gown with the hands still gloved, balling or rolling in the contaminated surfaces, and pulling the gloves off inside-out as the hands are withdrawn from the gown sleeve
b) The gown and gloves can then be placed in a disposal receptacle together

5. Perform hand hygiene
6. Remove eye wear
7. Remove mask/respiratorr
8. Perform hand hygiene

Waiting Area

- Clean and disinfect public areas frequently, including waiting rooms, door handles, chairs, and bathrooms
- Apply social distancing protocols in waiting area for patients incorporating at least 6 feet (2 meters) distance among people
- Use recommended anti septic hand disinfectants
- 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., pediatric 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

Dental Surgery:

- The surgery needs to be cleared of all cabinets, countertops, stools, furniture and other non-essential removable items
- All materials, instrument packs, and movable equipment, paper records, electronics, and other items in the dental surgery should be stored/ placed outside the surgery
- The surgery door should have a self closing device attached to it
- For category A clinics all items should be stored in airtight containers, drawers, cabinets or packs
    - All items and surfaces of the entire category A practices, including electronics, will need to be disinfected, and there should be nothing out in the open
- Paperwork must be limited as much as possible
    - If using paper charting, cover it with a clear barrier so you may read what is needed for appointment and use disposable pens
    - Place chart notes away from the patient contact area when possible
- Computers & laptops should be removed from the surgery. If the use of these is absolutely necessary during procedures, barriers may be used. However, surfaces underneath the barriers commonly get contaminated while removing barriers and aerosols may penetrate barriers that are not airtight. Both situations require disinfection of barrier covered surfaces afterwards. Hence, it is best to remove all unnecessary items from the surgery
- All air-entry or leakage points, other than the desired air entry points, need to be sealed.

- One or two small openings may need to be created into the dental surgery, for air inflow, and to pass materials into the surgery during aerosol procedures
    - This may be a gap between the door and the floor (for air), or via a slit in the lower part of the door (both air and passing items), or through a wall, or through a window in the surgery
- The size of the opening for air should be governed by the airflow (air changes an hour)
- The opening for passage of items, if separate from the air entry point, should be closable with a tight seal
- **Category A** clinics should install multiple through the wall exhaust fans in surgery
- **Category B & C** clinics should consider in-line exhausts with ducts collecting, and safely exhausting air outside, which are preferred over through-the-wall exhausts. Other air purification methods may be utilized

Disinfection of Clinic Environment (Also Refer to Mo/NHSR&C guidelines for Disinfection)

- Identify all commonly touched surfaces in the clinic, and list in a logical sequence for disinfection. Surfaces include door handles, areas touched on door frames, furniture, counters, light switches, water dispenser, sinks, fixtures, soap dispensers, thermometer
- Prepare a trolley with supplies, or have available:
    - One or two disinfectants in spray bottles.
    - Disposable wipes
    - Gloves
    - Waste basket
    - Floor wiper
- Train all DCPs (Dental Care Provider) in the clinic on disinfection protocols, and assign one DCP to disinfect all listed surfaces multiple times a day (at least twice daily), using a disinfectant non-toxic to human skin
- Relevant surfaces must be disinfected after entry and exit of every patient and staff member
- If present, the toilet must be disinfected after every use. DCPs may be trained to disinfect the toilet themselves after use
- Wear a mask, gloves and eye protection during disinfection
- All visible contamination should be washed or cleaned, and all surfaces of the toilet, including floor liberally sprayed with a disinfectant
- If using sodium hypochlorite, or other disinfectant toxic to skin, after the required disinfection time, wash and/or wipe-clean the toilet seat, tap fixtures and other commonly touched surfaces using disposable wipes
- The floor should be rinsed and wiped at the end
- At the end of the day, all dental practice floors need disinfection, along with all furniture and surfaces identified previously
- In poorly ventilated clinics, the day should start with complete dental practice disinfection

Personal Protective Equipment (PPE) (Also Refer to MoNHSR&C guidelines for Rational Use of PPE

- No dental treatment should be carried out during the pandemic without proper PPE

- Best available quality 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 N95 or higher-level respirator should be available for all dental care providers (DCP's) i.e. dentist and dental nurses
- Sufficient stock of personal protective equipment (PPE) for all clinic staff should be available in stock

Mask Type – With Goggles or Face Shield (Understanding Mask Types)		Level of Risk***
	N95	Low
	N95 EQUIVALENT MASK* KN/KP95, PFF2, P2, DS/DL2, KOREAN SPECIAL 1ST	Low
	Surgical Mask**	Moderate

Personal Protective Equipment (PPE) for COVID-19 urgent dental care settings			
	Waiting Room/Reception **No clinical treatment**	**Dental Surgery** **Non AGP treatment**	**Dental Surgery** **Treatments involving AGPs**
Good hand hygiene	Yes	Yes	Yes
Disposable gloves	No	Yes	Yes
Disposable plastic apron	No	Yes	No
Disposable gown	No	Yes	Yes
Fluid-resistant surgical mask	Yes	Yes	No
Filtering face piece (FFP3) respirator	No	No	Yes

Eye protection	No	Yes	Yes

Patients:

- Patients should be asked to wear a surgical mask, or follow strict respiratory etiquette i.e. cough or sneeze into elbow or sleeve.
- Optionally, according to availability and clinic protocols, patients may be asked to wear gowns and shoe covers/shoes, head caps.
- For aerosol procedures, patients should be asked to wear a gown and protective eyewear, which should be removed just before leaving the dental surgery, or in another doffing zone.

Staff Members:

- Ideally change into work clothes e.g. scrubs or wear a gown on top of regular clothing.
- Change shoes to closed work shoes, made of material which may be sprayed with liquid disinfectant when necessary. If not changing shoes, disinfect street shoes including soles.
- Wash hands.
- Wear a surgical mask, which should be worn all day.
- When staff members are in close proximity to patients (e.g. triaging zone), eye protection may be used.
- Gloves do not need to be worn routinely in the clinic. Instead, frequent hand hygiene is critical, along with disinfection of shared items (computers, phones) and commonly touched surfaces.

Procedure Infection Control

Infection Control Protocol for Aerosol Generating Procedures

- Absolute requirements for aerosol generating procedures:
    - Adequate ventilation of the dental surgery
    - N95 or better respirators and eye protection
    - Rubber dam, if applicable
    - High volume suction
- Before patient entry, aseptically set up the instrument tray, load LA syringe, dispense any materials needed during the procedure (e.g. on a glass slab, dappen dish). Apply barriers, according to clinic policy
- If there is adequate ventilation, any other items that are needed during the procedure may be placed on a trolley outside the operatory door (or in the corridor) along with bins for disposal of waste and reusable attire (e.g. gowns)
- Dentists and assistants should don PPE in the donning zone i.e. designated clean area of the clinic
- Patients should be given a gown and eye protection to wear
- Patients should be asked to perform preprocedural mouth rinse using
    - 1% hydrogen peroxide for 60 seconds OR
    - 0.2% povidone-iodine for 30 seconds
- HV suction should be held 6 to 15mm from an aerosol generating device, using an appropriate suction tip with at least an 8mm wide opening

- After the procedure has started,
    - Bottles and tubes of materials should not be opened inside the aerosol room
    - Any further materials and items needed should be handed or dispensed by a second assistant outside the room via the air entry point, or by briefly, partly opening the door
- When aerosol generation ends, time should be noted
- Patients may exit the surgery, after waiting for aerosol clearance time, removing PPE in the doffing zone
- DCPs should dispose of contaminated waste and sharps before leaving the room, and remove shoe covers or disinfect shoes at exit
- All PPE, except mask and eye protection, should be removed before leaving the surgery, or removed in a designated doffing (dirty) area of the clinic
- For disinfection of the dental surgery after an aerosol procedure

Guidelines for Aerosol Procedures when Clinic Ventilation is Inadequate

If clinic ventilation is inadequate, aerosol procedures should not be performed. In case an aerosol procedure needs to be done in emergency:

- Procedure should be scheduled/performed at the end of the working day
- Only the patient, dentist and assistant/s (all using appropriate PPE, see section 2 Recommended Personal Protective Equipment) should be present in the entire dental practice during the procedure. All other persons must vacate the clinic
- Planning is necessary to dispense all materials and items needed for the procedure before the generation of aerosol
    - All material bottles and other loose items should then be stored in airtight containers, so they do not need disinfection later
    - Any leftover dispensed materials at the end of the procedure must be discarded
    - If any bottle/tube/container is opened during the procedure, the entire material/item should be considered contaminated
- The patient and all staff should leave the clinic as soon as possible after an aerosol procedure, removing mask and eyewear immediately before exit
- DCPs attire, shoes, hair and skin at exit should be considered contaminated. Disinfect hands and wear a clean mask if possible. Avoid touching the mouth, nose and eyes
- The clinic should not be entered for at least 3 hours after the procedure
- Upon entry (the next day) or after at least 3 hours, the entire dental practice environment must be disinfected thoroughly, because during the first 3 hours aerosol will settle on all clinic surfaces and the virus may survive on these surfaces for 3 days

Ventilation of the Clinic and Dental Surgery

Ventilation of the Clinic

- Use principles for dental surgery ventilation (below) to ensure adequate ventilation and air flow through the entire practice, especially the doffing zone.

Ventilation of the Dental Surgery

a. **Through-the-wall exhausts**

- The exhaust should be installed so that it is located opposite to the point of air entry, which is usually through a gap between the door and floor or may be established elsewhere e.g. window
- The door should be kept closed during aerosol procedures, and no air should leak into the rest of the dental practice
- Install a self-closing device on the door
- Depending on the air flow rate of the exhaust fan, more than one exhaust fan may be installed in the dental surgery, to ensure more air changes per hour

b. **In-Line Exhausts with Ducts**

- In-line exhausts with ducts are preferred to through-the-wall exhausts
- The inlet of the duct may be installed 6 inches from the floor, near the foot end or the head end of the chair. Air entry should be from the opposite side of the room
- On the outside of the building, the exhaust duct outlet should be 25 feet from human traffic and air inlets, and ideally on the roof pointing up. If requirements cannot be met, or if there are health care and environmental concerns, exhaust air may be filtered using HEPA filters
- Seal all other air entry points in the surgery to try and create better airflow and possible negative pressure. E.g. seal electrical sockets, air conditioner grills, leaks from around the windows and other doors

c. **HVAC systems with HEPA filters, and Negative Pressure Dental Surgery**

- Medical and dental engineers should be consulted
- HVAC systems with HEPA filters may be used for disinfection and cooling of all air re circulating in the dental practice, and for all air entry into the dental surgery
- Follow guidelines above for exhausting air
- The dental surgery may be converted to a negative pressure room, with >12 air changes an hour

d. **Aerosol Collectors**

- Use of aerosol collectors and other aerosol reduction devices may be considered as additional measures to reduce risk. Aerosol collectors reduce microbial contamination close to the patient's face, but do not reduce the microbial contamination reaching the dentist. Despite their use, aerosol is found on the head and attire of the operator and assistant, and persists in the room for the usual time, based on ventilation and airflow. Note: these devices do not replace the need for adequate ventilation and airflow. The use of N95 or better respirator, and eye protection is essential

General Prevention Practices for Dentists

- Screening every asymptomatic patient meticulously
- Identifying the urgent need of the patient and focusing on managing it with minimally invasive procedures
- Categorize 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

- Non-dedicated and non-disposable equipment (e.g., handpieces, dental x-ray equipment, dental chair and light) should be disinfected and sterilized according to manufacturer's instructions. Handpieces should be cleaned to remove debris, followed by heat-sterilization after each patient
- Patient companions should wait outside clinic or in car
- 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

Note: The above recommendations are being regularly reviewed by the Ministry of National Health Services, Regulations & Coordination and will be updated based on the international recommendations and best practices.

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References

1. Transmission routes of 2019-nCoV and controls in dental practice Xian Peng, Xin Xu, Yuqing Li, Lei Cheng, Xuedong Zhou & Biao Ren
2. CDC Guidance for Providing Dental Care During COVID-19
3. Covid-19 Outbreak: Guidance for Oral Health Professionals
4. To, K. K.-W. et al. Consistent detection of 2019 novel coronavirus in saliva. Clin. Infect. Diseases https://doi.org/10.1093/cid/ciaa149 (2020).
To, K. K.-W. et al. Consistent detection of 2019 novel coronavirus in saliva. Clin. Infect. Diseases https://doi.org/10.1093/cid/ciaa149 (2020).
5.National Health Services – NHS (Link: https://www.england.nhs.uk/coronavirus/publication/preparedness-letters-for-dental-care)
5. Practice Guidelines Addressing Needs of Pakistani Dentists During the COVID-19 Pandemic
6. Ministry of Health Services, Government of Pakistan. Guidelines for providing dental care services during COVID-19. 2020 May 3.
7. Qazi SR, Qureshi A, Nasir S, Khan A. Cross infection control in dental practice – _guiding manual for dental health care workers, World Health Organization (WHO)/ Ministry of Health, Government of Pakistan, Publication, Islamabad. 2005
8. World Health Organization. COVID-19: Operational guidance for maintaining essential health services during an outbreak. 2020 March 25 [cited 2020 May 20]. Available from: https://www.who.int/emergencies/diseases/novel-coronavirus-2019/technical-guidance/infection-prevention-and-control
9. Center for Disease Control and Prevention. Interim infection prevention and control guidance for dental settings during the COVID-19 response. 2020 May 3 [cited 2020 May 20]. Available from: https://www.cdc.gov/coronavirus/2019-ncov/hcp/dental-settings.html
10. Hasan H. COVID-1_9_:_ _P_a_k_i_s_t_a_n_'s_ _d_e_n_t_a_l_ _f_r_a_t_e_r_n_i_t_y_ _a_n_d_ _i_n_d_u_s_t_r_y_ _f_a_c_e_ _u_n_p_r_e_c_e_d_e_n_t_e_d_ _challenges. Dental Tribune. 2020 March 27 [cited 2020 May 20]. Available from: https://coronavirus.dental-tribune.com/news/covid-19-pakistans-dental-fraternity-and-industry-faces-unprecedented-challenges
11. World Health Organisation. How to put on and take off personal protective equipment (PPE). 2020 April 22 [cited 2020 May 20]. Available from: https://www.who.int/csr/resources/publications/putontakeoffPPE/en/
12. U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health,

DHHS (NIOSH). How to properly put on and take off a disposable respirator. 2010-133
13. Lynne Sehulster, Raymond Y.W. Chinn. Guidelines for environmental infection control in health-care facilities, recommendations of CDC and the Healthcare Infection Control Practices Advisory Committee (HICPAC). 2003 / 52(RR10);1-42
14. Centers for Disease Control and Prevention. Guidelines for environmental infection control in health-Care facilities. 2003 [cited 2020 May 20]. Available from: https://www.cdc.gov/infectioncontrol/guidelines/environmental/appendix/air.html
15. Liu Y, Ning Z, Chen Y, Guo M, Liu Y, Gali NK, Sun L, Duan Y, Cai J, Westerdahl D, Liu X. Aerodynamic analysis of SARS-CoV-2 in two Wuhan hospitals. Nature. 2020 Apr 27:1-6.
16. United States Environmental Protection Agency. List N: products with emerging viral pathogens and human Coronavirus claims for use against SARS-CoV-2. 2020 [cited 2020 May 20] Available from: https://www.epa.gov/pesticide-registration/list-n-disinfectants-use-against-sars-cov-2
17. Rutala WA, Weber DJ. Uses of inorganic hypochlorite (bleach) in health-care facilities. Clinical microbiology reviews. 1997 Oct 1;10(4):597-610.
18. Kampf G, Todt D, Pfaender S, Steinmann E. Persistence of coronaviruses on inanimate surfaces and their inactivation with biocidal agents. J Hosp Infect._ _2_0_2_0_;_1_0_4_(_3_)_:_2_4_6_-2_5_1. 29. Ipswich Massachusetts Government. Guidelines on the use of disinfectants. 2011 Oct 31 [cited 2020 May 20]. Available from: https://www.ipswichma.gov/DocumentCenter/View/10072/50ppm-Guidelines-on-the-Use-of-Disinfectants
19. Ribeiro MM, Neumann VA, Padoveze MC, Graziano KU. Efficacy and effectiveness of alcohol in the disinfection of semi-critical materials: a systematic review. Revista latino-americana de enfermagem. 2015 Aug;23(4):741-52.
20. William G. Kohn, Amy S. Collins, Jennifer L, Jennifer A. Harte, Kathy J, Dolores M. Malvitz. Guidelines for infection control in dental health-care settings. Morbidity and Mortality Weekly Report Recommendations and Reports Vol 52. 2003; No. RR-17
21. Dallolio L, Scuderi A, Rini MS, Valente S, Farruggia P, Sabattini MA, Pasquinelli G, Acacci A, Roncarati G, Leoni E. Effect of different disinfection protocols on microbial and biofilm contamination of dental unit waterlines in community dental practices. International journal of environmental research and public health. 2014 Feb;11(2):2064-76.
22. Singh V, Nagaraja C, Hungund SA. A study of different modes of disinfection and their effect on bacterial load in dental unit waterlines. European Journal of General Dentistry. 2013 Sep 1;2(3):246-51.
23. Cole Fritz. How to shock your dental waterlines. ProEdge Dental Water Labs, 2019 Mar 14 [cited 2020 May 20]. Available from: https://blog.proedgedental.com/blog/how-to-shock-your-dental-waterlines
24. Chin A, Chu J, Perera M, Hui K, Yen HL, Chan M, Peiris M, Poon L. Stability of SARS-CoV-2 in different environmental conditions. medRxiv. 2020 Jan 1.
25. Cochran MA, Miller CH, Sheldrake MA. The efficacy of the rubber dam as a barrier to the spread of microorganisms during dental treatment. The Journal of the American Dental Association. 1989 Jul 1;119(1):141-4.
26. Bentley CD, Burkhart NW, Crawford JJ. Evaluating spatter and aerosol contamination during dental procedures. Journal of the American Dental Association (1939). 1994 May;125(5):579-84.
27. Avasth A. High Volume Evacuator HVE in reducing aerosol an exploration worth by clinicians. Journal of Dental Health, Oral Disorders & Therapy. 2018 May 16;9(9)._

For more information, please contact:

HSA/ HPSIU/ NIH, PM National Health Complex, Islamabad

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