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## *Oral Healthcare at Students' Dental Clinics During Coronavirus Pandemic: Clinical guide*

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This guide describes clinical steps and precautions that are needed for safe dental care during the COVID-19 pandemic. This guide is based on current understanding of the COVID-19 disease and intends to provide guidance for prevention of disease propagation. Information included in this guide are based on the best available knowledge and expert opinion available in the scientific literature at the time of writing the document. Content will be updated as new evidences emerge.



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This guide describes clinical steps and precautions that are needed for safe dental care during the COVID-19 pandemic. This guide is based on current understanding of the COVID-19 disease and intends to provide guidance for prevention of disease propagation.

### General principle:

People with COVID-19 may exhibit a wide range of symptoms causing mild to severe illness. Symptoms may appear 2-14 days after exposure to the virus.

People with one or more of the following symptoms may have COVID-19 infection (CDC, 2020c):

1- Respiratory	2- Systemic	3- Enteric	4- Other
<ul style="list-style-type: none"><li>• Cough</li><li>• Sputum</li><li>• Sore throat</li><li>• Runny nose</li><li>• Wheezing</li><li>• Shortness of breath</li><li>• Chest pain</li></ul>	<ul style="list-style-type: none"><li>• Fever <math>\geq 38^{\circ}\text{C}/100.4^{\circ}\text{F}</math></li><li>• Myalgia</li><li>• Joint pain</li><li>• Fatigue</li></ul>	<ul style="list-style-type: none"><li>• Abdominal pain</li><li>• Vomiting</li><li>• Diarrhoea</li></ul>	<ul style="list-style-type: none"><li>• Loss of taste</li><li>• Loss of smell</li><li>• Headache</li></ul>

**ONLY LOW-RISK PATIENTS will be clinically managed at students' dental clinics according to the following criteria:**

High risk patients	Low risk patients
Tested positive for COVID-19	Tested negative for COVID-19
Showing symptoms (see above 1-4)	No COVID-19 symptoms
Have been in contact or isolation with suspected or diagnosed cases	Not been in contact with suspected cases
Travelled internationally in the last two weeks	No travel in the last 14 days
	Recovered from COVID-19 infection



If you or your patients have any of the following symptoms, please **DO NOT** come to the appointment:

- ✓ Cough
- ✓ Fever (> 38 c) (Patients with a temperature of 37.5 will be re tested within 15 minutes; if temperature remained 37.5 or more, reschedule the appointment)
- ✓ Sore throat
- ✓ Rhinorrhoea
- ✓ Fatigue
- ✓ Loss of taste or smell sensation
- ✓ Runny nose
- ✓ Chest pain

## Patient admission (Figure 1)

- Only patients with phone-booked appointments are allowed.
- Patients should be called by phone the day before their appointment date and given necessary instructions about safety and transport policy.
- Inform the patient not to bring any escort. Only a guardian or one person if assistance is required. This is important to minimize contact.
- To facilitate adequate physical distancing, it is important to remind patients to come on time. In case a patient arrives early, ask to wait in the car, or outside the dental department until the appointment time.
- Patients should be informed not to take any temperature lowering drugs prior to the appointment.
- Only patients who have clearance from “Assessment Station\*” are allowed to get into the clinical area.
- Make sure that patient’s details including: full name (in Arabic), exact address, I.D number, and telephone number are correctly recorded on the triage card and in the patient’s file.
- Patient’s file should be placed in drawer and not kept on the working bench.

\*Screening stations will be placed in front of elevators and main doors, and will be handled by the COVID team interns.



## Clinical environment

### Reception zone (Area in front of the two main doors and elevators):

- Patient temperature will be checked by COVID-19 team members at the point of entrance. If the temperature is 37.5°C or less they will be directed to the main reception area where hand sanitization will be required, masks will be provided if needed.
- Except for children under 6 years old, all patients are to wear masks in the dental department. Patients are to take off the mask only when seated on the dental chair just before examination and during the treatment.

### Waiting areas

- Keep doors open to avoid the use of door handles and allow ventilation.
- Chairs in the waiting area to be rearranged to leave a 1.5-meter distance between each other.
- Remove all magazines and leaflets (if any!)
- Minimize the waiting time by preparing appointments well in advance and advising the patients to arrive on time.
- On a regular schedule (i.e. after each clinical session), wipe all touchable surfaces with available surface disinfectant

### The dental clinics

- Clean and disinfect room surfaces promptly after completion of clinical care.
- Maintain a minimum of 10 minutes between appointments in a manner that guarantees enough time to disinfect all surfaces inside the examination or treatment area before the next patient arrives.
- Ensure that cleaning and disinfection procedures are followed consistently and correctly
- The sanitizing of surfaces in clinical environments should follow these guidelines:
  1. Start with the least contaminated area and proceed to the most contaminated
  2. Start at the top and move downwards
  3. Start inside and move outwards
- Places that should have mechanical barriers (PVC films or plastic bags) include:
  1. Computer keyboards and any other input device such as a mouse
  2. Manual triggers
  3. Spotlight handles



4. Headrests

5. Dental chair arms

6. Dental chair rest

7. High speed hand pieces

8. Triple syringe body

9. Tip of suction units

- Surfaces such as benches and auxiliary strollers should be covered by disposable and impermeable barriers.
- Remove all unnecessary material, instruments and equipment from the countertops in the clinic
- Have the patients, both adults and children (age 6 year and older), use a pre-procedure antiseptic mouth rinse (chlorhexidine or hydrogen peroxide) immediately before beginning a procedure.

**Staff (clinicians, nurses, assistants, students, technicians, administrative)**

- All staff will be screened for fever and COVID-19 symptoms on a daily basis. Temperature will be recorded, by COVID team, for all the staff coming for duty.
- No one can come in and go out wearing scrubs or white coat.
- Clinicians, nurses, students should wear the appropriate personal protective equipment (PPE) before the patient enters the clinic. The sequence for putting on PPE should be properly adhered to i.e., “gown, mask, face shield then gloves”
- After treatment, dispose of the PPE using the appropriate sequence “gloves, face shield, gown then mask.
- Clinicians must have separate shoes for clinical activities, if not they must wear overshoes.
- Students are to take the scrubs home in a closed plastic bag for washing/cleaning.
- Keep a “reasonable distance” between you and your patient at all times.
- Place dental impressions in impression disinfectant available in the clinic for the required period of time depending on impression material.
- Indirect visualisation technique and correct positioning is mandatory.
- Keep the use of air/water syringe to minimal.
- After you complete the planned procedure, ask the patient to rinse his mouth for 40-60 seconds with chlorhexidine mouth wash.
- Ask the patient to wash his hands with soap and water for 20 seconds

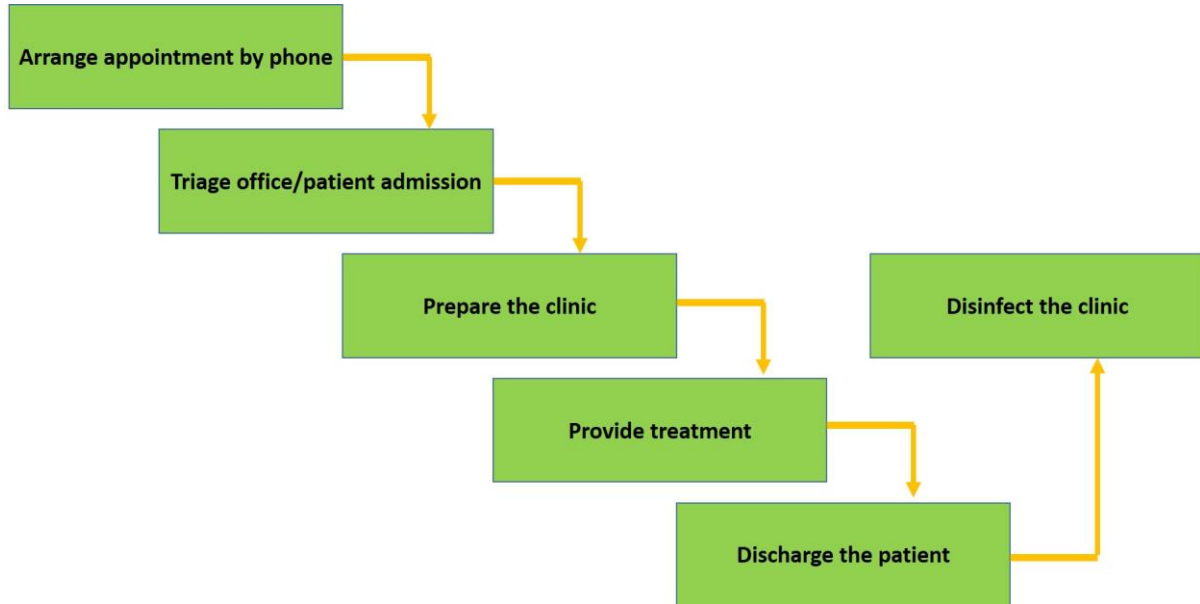


Figure 1: Journey of the patient from admission to discharge



## Personal protective equipments (see figure 2 on how to wear PPE)

The PPE components include (CDC, 2020):

- Disposable gowns
- Surgical mask (N.B. For aerosol generating procedures, N95 mask is needed)
- Face shields/visors
- Goggles
- Disposable gloves
- Head covers and overshoes
- Clinicians, nurses, and students should not wear home clothes in the clinics.





**Figure 2:** steps for wearing PPE. Source: CDC (<https://www.cdc.gov/coronavirus/2019-ncov/hcp/using-ppe.html>)

## Sequence for Putting on (Donning) PPE

**SEQUENCE FOR PUTTING ON PERSONAL PROTECTIVE EQUIPMENT (PPE)**

The type of PPE used will vary based on the level of precautions required, such as standard and contact, droplet or airborne infection isolation precautions. The procedure for putting on and removing PPE should be tailored to the specific type of PPE.

- 1. GOWN**
  - Fully cover torso from neck to knees, arms to end of wrists, and wrap around the back
  - Fasten in back of neck and waist
- 2. MASK OR RESPIRATOR**
  - Secure ties or elastic bands at middle of head and neck
  - Fit flexible band to nose bridge
  - Fit snug to face and below chin
  - Fit-check respirator
- 3. GOGGLES OR FACE SHIELD**
  - Place over face and eyes and adjust to fit
- 4. GLOVES**
  - Extend to cover wrist of isolation gown

**USE SAFE WORK PRACTICES TO PROTECT YOURSELF AND LIMIT THE SPREAD OF CONTAMINATION**





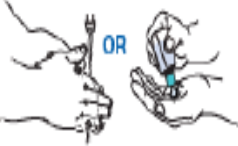
- Keep hands away from face
- Limit surfaces touched
- Change gloves when torn or heavily contaminated
- Perform hand hygiene




## Sequence for Taking off (Doffing) PPE

**HOW TO SAFELY REMOVE PERSONAL PROTECTIVE EQUIPMENT (PPE) EXAMPLE 1**

There are a variety of ways to safely remove PPE without contaminating your clothing, hair, or mucous membranes with potentially infectious materials. Here is one example. Remove all PPE before exiting the patient room except a respirator if worn. Remove the respirator after leaving the patient room and closing the door. Remove PPE in the following sequence:

- 1. GLOVES**
  - Outside of gloves are contaminated!
  - If your hands get contaminated during glove removal, immediately wash your hands or use an alcohol-based hand sanitizer
  - Using a gloved hand, grasp the palm side of the other gloved hand and peel off first glove
  - Hold removed glove in gloved hand
  - Slide fingers of ungloved hand under remaining glove at wrist and peel off as second glove over first glove
  - Discard gloves in a waste container
- 2. GOGGLES OR FACE SHIELD**
  - Outside of goggles or face shield are contaminated!
  - If your hands get contaminated during goggles or face shield removal, immediately wash your hands or use an alcohol-based hand sanitizer
  - Remove goggles or face shield from the front by lifting headband or earpieces
  - If no iron is available, place in designated receptacle for reprocessing. Otherwise, discard in a waste container
- 3. GOWN**
  - Front and sleeves are contaminated!
  - If your hands get contaminated during gown removal, immediately wash your hands or use an alcohol-based hand sanitizer
  - Untie gown ties, taking care that sleeves don't contact your body when reaching for ties
  - Put gown away from neck and shoulders, touching inside of gown only
  - Turn gown inside out
  - Roll or roll into a bundle and discard in a waste container
- 4. MASK OR RESPIRATOR**
  - Front of mask/respirator is contaminated — DO NOT TOUCH!
  - If your hands get contaminated during mask/respirator removal, immediately wash your hands or use an alcohol-based hand sanitizer
  - Grasp bottom ties or elastic of the mask/respirator from the back at the top, and remove without touching the front
  - Discard in a waste container
- 5. WASH HANDS OR USE AN ALCOHOL-BASED HAND SANITIZER IMMEDIATELY AFTER REMOVING ALL PPE**


**PERFORM HAND HYGIENE BETWEEN STEPS IF HANDS BECOME CONTAMINATED AND IMMEDIATELY AFTER REMOVING ALL PPE**







## CONSIDERATIONS FOR AEROSOL GENERATING PROCEDURES (AGP)

- AGPs on open plan clinics should be conducted in a zoned manner with only AGPs occurring on the clinic in question. This clinic should be clearly identified as conducting AGPs
- All staff and students on the clinic should wear FFP3/N95, eye protection, and apron if not assisting or providing an operative intervention. If providing or assisting an operative intervention staff or student should be wearing a fluid resistant gown or coverall and gloves in addition to a FFP3 respirator/N95, and visor.
- Air change per hour should be ascertained and optimised as far as practically possible for the clinic in use.
- Patients should enter the clinic wearing a fluid resistant surgical mask and eye protection prior to the session beginning. The eye protection should stay in situ for the procedure and the mask replaced following the completion of procedure.
- If there is more than one exit they should then exit the clinic through the closest exit and dispose of the mask and either have the eye protection disinfected or dispose of it.
- Dental suction with a wide bore suction tip provided by an assistant is mandatory to reduce aerosol spread
- Dependent on the local environment and ventilation screening between the chairs can be considered
- Minimising the use of ultrasonic scalers through more use of hand scaling would be one practical method to increase the relative amount of chair space for AGPs.
- All procedures should have an operator, an assistant, and “runners” separate to the operating/assisting team in order to obtain any other equipment or consumables that have not been predicted to be needed in the pre-operative set-up period.
- Staff and students should not remove their FFP3 or visor until out of the aerosol area which dependent on the local clinical environment may be in safe areas near the exit of the clinic or outside the clinic zone. If the member of staff’s visor is contaminated during supervision of one procedure it must be appropriately cleaned prior to moving to any other supervisory act elsewhere on the clinic.
- Despite the very small risk of an open plan clinic it is possible to further enhance risk mitigation by redirecting patients who are extremely high risk of severe COVID-19 illness to closed clinical environments (i.e. See assessment zone information).



## CONSIDERATIONS FOR NON-AEROSOL GENERATING PROCEDURES (AGP)

- None of the following can be used on a non-AGP clinic currently: high-speed air-turbine handpiece, slow speed air-motor handpiece with water spray, electric micro-motor handpiece with water spray, 3-in-1 spray (air and water together), Ultrasonic or sonic scaler
- Patients should be  $\geq 2$ m apart and preferably with some form of physical barrier between them
- Appropriate PPE should be adopted for patient, staff and student. (See Appendix 1)

## ASSESSMENT ZONE INFORMATION

- All booked patients should go first to the assessment zone
- Patients should wait in the waiting area with a minimum of one-meter distance between seats.
- Only one patient at a time is allowed in the assessment area.
- Avoid hand shaking or close contact with the patient.
- Wear surgical mask and gloves.
- Ask patient to rub his hands with available hand disinfectant before getting into the office.
- The intern in charge should document the following: (see Assessment card)
  - Full name (in Arabic), exact address, phone number, and I.D number
  - History of current or recent (the past one month) cough, sore throat, fever, fatigue, rhinorrhoea
  - History of recent travel abroad or contact with someone who came from abroad
  - Medical history
  - Temperature
- Patients with no signs or symptoms are allowed to get into the clinical area, and assessment card is kept in the patient file.
- Patients with signs/symptoms or recent travel abroad or contact with someone who came from abroad should be advised to reschedule a new triage appointment after two weeks.



**Assessment card / Screening for dental appointment**

<b>Patient name (in Arabic):</b>
<b>I.D number</b>
<b>Address:</b>
<b>Phone number</b>

<b>Student name (in Arabic):</b>
<b>Phone number</b>
<b>Supervisor:</b>
<b>Nurse:</b>
<b>Cleaner:</b>

Please check the following findings:

Yes=1; No=0

Finding	Score
<b>Fever*</b>	
<b>Sore throat *</b>	
<b>Fatigue *</b>	
<b>Cough *</b>	
<b>Recent travel*</b>	
Contact with travellers	
Age > 70	
<b>Immunosuppression* (i.e. long term/high dose steroids, chemotherapy, transplant, other immunosuppressants)</b>	
Chronic respiratory disease (i.e. COPD, pulmonary fibrosis, sarcoidosis, asthma)	
Renal dialysis or chronic renal failure, chronic liver disease, obesity, uncontrolled diabetes, pregnancy	
<b>Total score</b>	

\*Patients with positive score to **ANY OF THE STARRED FINDINGS** should be **RE-SCHEDULED** for another triage visit after two weeks regardless of their total score

\*Patients with score <2 can be treated in students' dental clinics

**Triage category: Please tic the box**

**CLEAR**

**RE-SCHEDULE**



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**PATIENT INFORMATION**

عزيزي المريض / عزيزتي المريضة

الرجاء الاطلاع على المعلومات التالية حتى تتمكن من تقديم العلاج الآمن لك و للمرضى الآخرين

قد تلاحظ وجود بعض التغييرات في إجراءات الحضور إلى العيادة. هذه الإجراءات هدفها تقديم علاج آمن للمرضى.  
نرجو منكم التعاون مع الكادر الطبي و الالتزام بالتعليمات

الرجاء عدم الحضور الى العيادة بدون موعد مسبق

الرجاء عدم الحضور الى العيادة إذا كنت تعاني من اي من الأعراض التالية:

ارتفاع حرارة الجسم

السعال

سيلان من الانف

ألم في الحلق

تعب أو إجهاد عام

في حال تم ترتيب موعد لك عبر الهاتف يرجى التوجه بداية إلى مكتب تصنيف المرضى حتى يتم توثيق بياناتك و قياس العلامات الحيوية

الرجاء الحضور على الموعد المحدد و عدم إحضار مرافق إلا في الحالات الضرورية

سيتم إعلامك عبر الهاتف بأية تفاصيل ضرورية أو تعليمات تتعلق بالنقل أو السلامة العامة



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**Appendix 1:** Summary of PPE required in various clinical settings

Clinical setting	PPE required	Provided by school	Need to have your own
Root canal treatment, Restorative procedures, Scaling with ultrasonic scalers, Crown and bridge work, Use of slow or high speed handpiece, Use of 3 in 1 spray	Disposable gown	Yes	No
	N95 mask	No	Yes
	Face shield	Yes	Yes
	Gloves	No	Yes
	Over shoes	No	Yes
	Head cap	Yes	Yes
	Goggles	No	Yes
Tooth extraction, Surgical procedures not involving the use of handpiece, Impression taking, Bite registration, Insertion or adjustment of oral prosthesis, manual scaling	Disposable gown	Yes	No
	Surgical mask	Yes	Yes
	Face shield	Yes	Yes
	Gloves	No	Yes
	Goggles	No	Yes
Patient examination or interview	Surgical mask	Yes	Yes
	Gloves	Yes	Yes