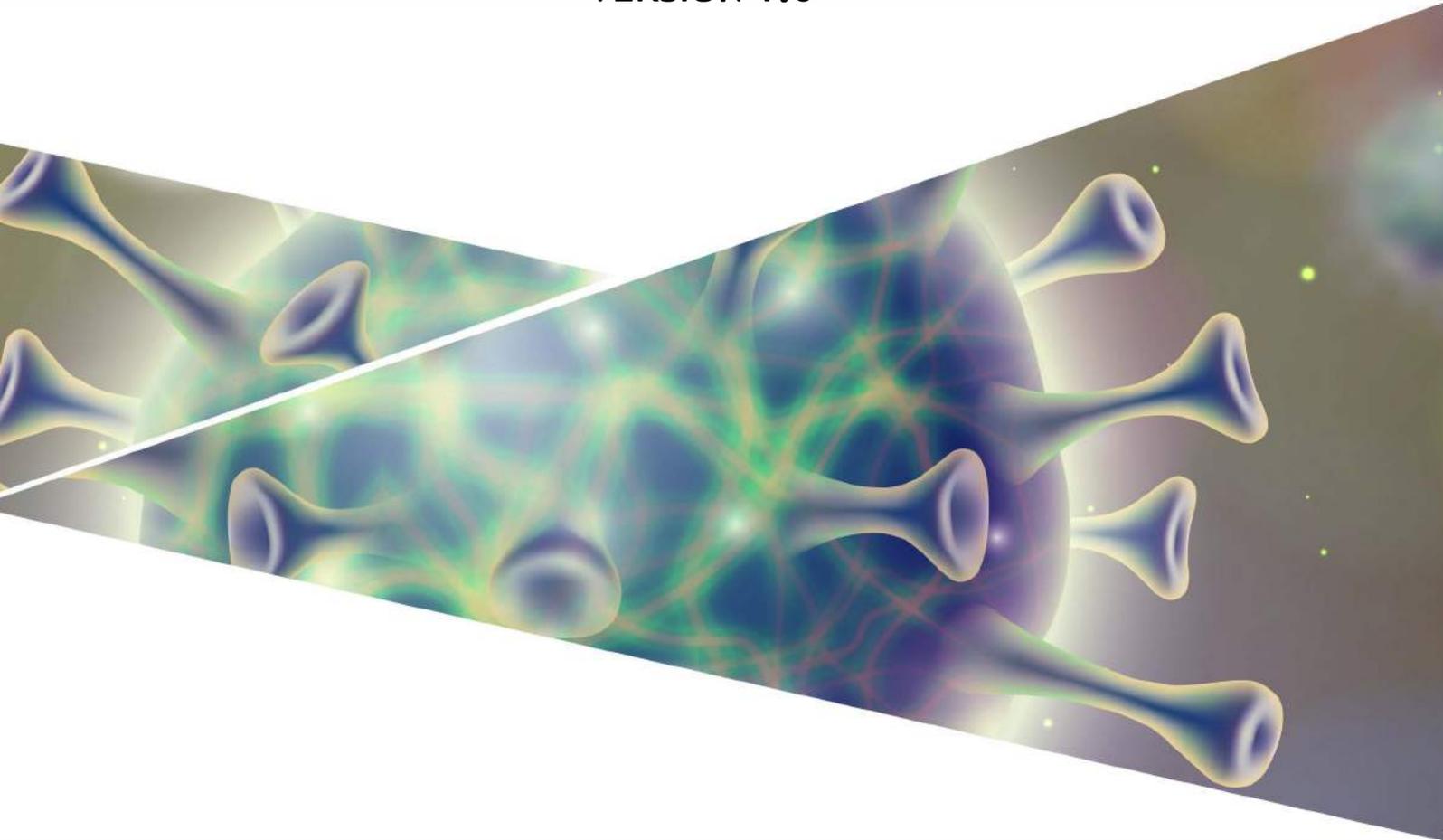


# COVID-19

## ORTHODONTIC PRACTICE MANAGEMENT GUIDELINES

VERSION 1.0



by

**Malaysian Association of Orthodontists (MAO)**



*MALAYSIAN ASSOCIATION  
OF ORTHODONTISTS*

## INTRODUCTION

Most parts of the world are seeing cases of COVID-19 outbreaks. The 2019 pandemic of novel coronavirus, SARS CoV-2, has expanded from its original centre - Wuhan, China to a growing number of countries worldwide including our nation Malaysia. Although authorities in China and some other countries have succeeded in slowing their outbreaks, the situation remains unpredictable, laced with many uncertainties.

As of 5<sup>th</sup> June 2020, the WHO reports that there are over 6.7 million cases worldwide and tragically over 393,000 reported deaths. The effects of this COVID-19 are numerous and unprecedented. This global pandemic has harshly affected the day-to-day running of world. Dentistry, including orthodontic clinical practice has been brought to a screeching halt when our Malaysian government imposed the Movement Restricted Order as of 18<sup>th</sup> March 2020.

As efforts to combat the viral transmission have been by and large successful in managing to “flatten the curve” of infectivity for this highly infectious virus, various guidelines have been put together to ensure resumption of clinical practice in a safe manner for much needed continuation of patient care.

This particular guideline aims to provide some guidance and advice from the Malaysian Association of Orthodontists specifically tailored for orthodontic patient care within the Malaysian context during this transitional phase, until such a time when vaccine or definitive therapy is successfully developed.

This approach, shall be used in addition to the existing universal cross-infection protocols available (*Malaysian Dental Council Guidelines for Infection Control in Dental Practice 2017 and recommendations by the Ministry of Health Malaysia*) and regulations by the Government of Malaysia from time to time as we improve our knowledge and experience in dealing with this COVID-19.

Orthodontic practices will need some time for acclimatisation but it is highly recommended that these become ‘new-normal’ practices in the near future with the main aim to protect all our patients, colleagues, staff and the public against the spread of this viral pandemic.

## PRETREATMENT PREPARATION

### 1. *Pre- appointment*

- Call patients at least 3 days earlier
- Ask all questions as listed below as part of primary screening.
  - i. In the last 14 days, have you:
    - Been tested for COVID-19?
    - Been in close contact with anyone with COVID-19?
    - Been in the mass gathering with reported cases of confirmed COVID-19?
    - Travelled overseas
  - ii. Do you have any of the following symptoms?
    - Fever
    - Cough
    - Sore throat
    - Difficulty breathing
    - Runny nose
    - Loss or reduced sense of smell
- Remind patients to:
  - i. Maintain good oral hygiene at all times.
  - ii. Brush teeth before receiving treatment in the clinic.
  - iii. Always be careful when eating to reduce or avoid breakages.
  - iv. Use proper toothbrushes to reduce formation of calculus.
- Advise patients to wear face masks and maintain social distancing during the visit.
- Advise patients to strictly follow the appointment time given.

### 2. *Appointment*

- Make sure that the patients wear face masks and maintain social distancing.
- Before entering the clinic (triage):
  - i. Check temperature.
  - ii. Ask all the questions again as above.
  - iii. Advise patients to apply hand sanitiser (alcohol based) for 20 seconds.
- Advise patient to strictly wear face mask all the times while in the waiting room and maintain social distancing.
- Advise patient to sit in the waiting area until called for treatment.

## TREATMENT PROCEDURES

### NON-AEROSOL GENERATING PROCEDURES AND AEROSOL GENERATING PROCEDURES IN ORTHODONTICS

Aerosol Generating Procedures (AGPs) are defined as any medical and patient care procedure that results in the production of airborne particles (aerosols). The transmission of COVID-19 is known to occur via direct air-borne infection or indirect contact with contaminated surfaces. Therefore, restriction of AGPs during dental treatment is an important control measure to minimise the risk of infection. Where possible, orthodontists should consider providing treatment without involving AGPs. If absolutely necessary, an AGP should be done at the end of the day ideally using a designated surgery. Otherwise, allow short ventilation of treatment room between patients following AGPs.

Appendix 1 presents a review of potential AGPs produced in orthodontics to enable orthodontists to make a valid and reliable clinical judgement when carrying out orthodontic treatment. Starting comprehensive orthodontic treatment plans that can wait should be prioritised down. Professional judgment must be made on a case by case basis and deviations from these recommendations should be documented.

### PERSONAL PROTECTIVE EQUIPMENT

As orthodontic practices resume during COVID-19 pandemic, it will be the obligation of each orthodontist to ensure that they have a good understanding of the appropriate personal protective equipment's (PPE) required for the procedure to be carried out and are able to provide treatment which is safe for all parties involved. It is important to adhere to the recommendations on the proper use of PPE based on current available evidence, for the welfare of our members, clinic staffs, our patients and the general public.

Appendix 2 lists some of our recommended PPE for the dental practice personnel. We advise the use of the highest level of PPE available, assuming all patients can transmit disease. However, professional judgement should be exercised to optimise supplies of PPE when resources are limited.

## CLINICAL TIPS FOR A SAFER ORTHODONTIC PRACTICE

### 1. *Categorise patients at screening*

- COVID-19 positive patient or patient under investigation (PUI) – defer orthodontic treatment. Advise the patient to seek appropriate medical care.
- Symptomatic patients – defer orthodontic treatment. Treat only if emergency.
- Symptom-free or COVID-19 recovered after 30 days – routine orthodontic treatment.

### 2. *Digital orthodontics to minimise patient contact*

- Consider the use of online video consultation and tele-dentistry for emergency home repair of appliances, providing clear aligners as a treatment option, virtual appointments to monitor treatment and online platforms for clinical education and training. Digital tools however should not replace careful chairside treatment planning and monitoring.

### 3. *Pre-procedural mouth-rinse to reduce viral load*

- For adults and children > 12 years old
  - 1.0% – 1.5% Hydrogen Peroxide for 15-30 seconds or
  - 0.2% – 1.0% Povidone Iodine for 15-30 seconds

### 4. *Reduce or avoid AGPs.*

- **Debond** – use band removing pliers, Mitchell's trimmers, hand scalers or adhesive removing pliers to carefully remove any residual adhesive. Mitchell's trimmer or hand scalers can be used for anterior teeth with thinner enamel. Pliers should only be used on posterior teeth. If there are large restorations on the posterior teeth, consider placing a cotton wool roll on the occlusal surface before applying any force with the plier.
- **Bonding** – consider using light cured resin modified GIC instead of composite bonding, as it eliminates the need for any pre-procedural tooth preparation. Bond strength may be compromised. Self-etch primers (SEP) can also be used instead of the conventional acid-etch tooth preparation technique. Make sure to wipe the bonding surface of the teeth with a cotton roll prior to applying SEP and rub the SEP for 3-5 seconds on the enamel surface, re-dipping into the SEP reservoir for every tooth.
- **Impression taking** – carries the risk of gag or cough reflex which is a known aerosol risk. Consider intra oral scanning (digital impression) if available but bear in mind this does not eliminate the gag or cough reflex. Impressions and lab works should all be disinfected using disinfecting agent that is appropriately viricidal for COVID-19 based on the manufacturer's instructions before being sent to the lab. Immersion of impressions in disinfectant is better as this is less technique sensitive than spray disinfectant.
- **Repair of brackets** – remove residual composite using hand instrument

- **Fitting and trimming the acrylic on removable appliances** – avoid trimming the acrylic of removable appliances already being worn by the patient in the clinic setting. These should be decontaminated using an appropriate disinfectant before being transferred to the laboratory for repair, where superior high-volume suction can be used to minimise the impact of any aerosol generated.
- **Retention** – consider providing removable retainer regime to avoid AGP during fixed retainer bonding or repair of breakages. If fixed retainer needs repairing, use Weingart or Birdbeak pliers and high-volume suction to remove adhesive from the retainer wire. Hand scalers, Mitchell’s trimmer or adhesive removing plier can be used to remove adhesive from the lingual surfaces of the incisors.

##### **5. Minimise risks for AGP**

- AGP should ideally be done in an enclosed room, with closed doors and windows, minimum staff and preferably no accompanying person (otherwise this person have to wear full PPE).
- **High volume suction** - reduces the amount of aerosol in the clinic environment and should be employed if AGP is carried out, including when trimming appliances outside of the mouth.
- **Rubber dam** – may reduce the biodiversity of aerosol produced. There is limited use of rubber dam in orthodontics but consider isolating teeth during bond up or debond to protect clinician against infections which can be transmitted by the patient’s saliva and protect patients from ingestion or aspiration of small orthodontic components.
- **HEPA filters** – high-efficiency particulate arrestor air filters prove to be an exceptional means of controlling air borne infections in dental clinic, protecting from bioaerosols (e.g. organic dust consisting of pathogenic or non-pathogenic live or dead bacteria and fungi, viruses, bacterial endotoxins, mycotoxins, peptidoglycans, high molecular weight allergens, pollen, plant fibers) and provide better indoor air quality. Consider investing in a medically certified HEPA filter for each AGP room which should capture a minimum of 99.97% of contaminants 0.3 microns in size and larger.

## DECONTAMINATION AFTER ORTHODONTIC PROCEDURES

Decontamination procedures following the completion of treatment must be performed comprehensively and as frequent as possible to minimise viral transmission. Ministry of Health (KKM) recommends the use of Sodium Hypochlorite 1,000ppm (chlorine) as disinfectant. Any alternative disinfectant that is effective against enveloped viruses could also be used. Refer to EPA-approved list of disinfectants- <https://www.epa.gov/pesticide-registration/list-n-disinfectants-use-against-sars-cov-2-covid-19>. Manufacturers' guidance and recommended product 'contact time' must be followed for all products. The use of alcohol based wipes or spray containing at least 70% alcohol is an alternative especially to reduce risk of damage to sensitive machine components.

### 1. *Decontamination of Surgery*

When **AGP** has been used, these steps are recommended:

- Vacate the surgery and close all doors.
- Use High-Efficiency Particulate Arresting (HEPA) air filter for better air circulation. Avoid the use of fans that re-circulate the air.
- Remove PPE (doffing) is preferably done in a different designated area/room to avoid contaminating personal clothing. If not possible, doffing to be done in the same surgery except for face mask and goggle to avoid inhalation of the aerosol. Perform hand hygiene. Remove face mask and goggle outside the surgery. Dispose face mask and disinfect goggle appropriately.
- Before re-entering the surgery, perform hand hygiene and use appropriate PPE. Collect all cleaning equipment and healthcare waste bags. The person responsible for undertaking the cleaning and disinfectant should be trained in the process.
- When entering the surgery (cleaning and disinfection procedures) :
  - Remove all healthcare waste and any other disposable items and disposed them according to the standard disposal procedures.
  - Run any instruments that use water to discharge water for 20-30 seconds for every patient. Flush dental unit water line (suction, spittoon) with 1% Sodium Hypochlorite or any recommended disinfectant solution for 2 minutes.
  - Disinfect patient care equipment as per recommended.
  - Disinfect surfaces that are likely to be contaminated including those in close proximity with patients (e.g spittoons, unit handles, various controls, light cure unit, micromotor, ultrasonic handpiece, 3 way syringe) and frequently touched surfaces such as worktops and doorknobs.
  - Cleaning and disinfection should be carried out with PPE wear.
  - Consider to use disposable plastic covering on surfaces that are difficult to disinfect such as computer keyboard, etc.

In a **non-AGP** situation, the cleaning and disinfection procedures of all equipment and surfaces should be done immediately after every treatment (similar procedures as per AGPs).

## **2. Decontamination of Floor**

- Use dedicated or disposable equipments (such as mop heads, cloths) for environmental decontamination and dispose them as infectious clinical waste. Reusable equipments (such as mop handles, buckets) must be decontaminated after use. Communal cleaning trollies should not enter the surgery.
- Disinfection of hard non-porous and soft porous surfaces are as follows:
  - Hard non porous surfaces:
    - i. Use recommended disinfectants by the Ministry of Health, Malaysia.
    - ii. Allow 2 minutes of contact time before wiping or allow to air dry without wiping
  - Soft porous surfaces such as carpet, rugs, drapes:
    - i. Remove visible contamination if present and clean with appropriate cleaners and launder.
    - ii. If laundering is not possible, use disinfectant as per recommended.

## **3. Personnel/Staff**

- Thorough strict hand hygiene via hand washing with soap and water or alcohol-based hand rub should be performed:
  - after handling every patient.
  - after any activity/contact to a potentially contaminated surface area including removal of PPE, equipment or waste handling.
- Prior to leaving the clinic, it is recommended that all clinical personnel (operator and assistant) to shower where possible and change into new personal clothing to reduce the risk of spreading infection outside the premise.

## **4. Decontamination of Orthodontic Equipment & Clinical Waste**

### **i. Orthodontic equipment:**

- **Pliers/instruments:** Pre-clean and disinfect as per recommended. Remove excess disinfectant to prevent corrosion. Then heat sterilise via autoclave. Place pliers in an open position when autoclaving. Chrome plated instruments and stainless steel instruments should be sterilised separately.
- **Brackets & Archwires :** Clean, disinfect and sterilise.
- **Orthodontic bands:** Bands especially the tried in ones need to be pre-cleaned and sterilised using autoclave.
- **Elastomeric ligatures and chains:** Cold sterilisation using EPA-approved disinfectant with appropriate contact time can be used. Heat sterilisation also has been found to have no effect on the mechanical properties of elastomeric chain. Any unused ligature/chains that is within the exposed portion of the operatory, should be presumed to be infected and disposed of as infected medical waste. Thus, to avoid contamination, keep the ligatures/chain in a closed compartment until being used. Single patient packs are recommended and where this is not feasible as in the case of spools, it is better to cut a little extra than required and discard the rest.
- **Orthodontic markers :** Can be autoclaved.
- **Alginate impression & Orthodontic Appliances:** Cold sterilisation using EPA-approved disinfectant with appropriate contact time can be used.

## 5. Clinical waste

Treat all clinical waste as potentially **infectious**. Any archwire or appliance parts that were removed from patient should be disposed as a medical hazard.

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## APPENDIX 1: Non-AGPs and AGPs in Orthodontics

Type of Appointment		Procedure	
		Non-AGP	AGP
Consultation	New patient assessment and treatment planning	<ul style="list-style-type: none"> <li>• Extra oral examination</li> <li>• Intraoral examination</li> <li>• Photography</li> <li>• Impressions</li> <li>• Scanning</li> <li>• Discussion</li> <li>• Consent</li> </ul>	<ul style="list-style-type: none"> <li>• Surface drying using 3 in 1 air and water syringe</li> </ul>
Fixed Appliance	Bond up	<ul style="list-style-type: none"> <li>• Tooth/teeth drying with cotton wool</li> <li>• SEP without using 3 in 1 air and water syringe</li> <li>• Bracket/tube placement</li> <li>• Band cementation</li> <li>• Archwire placement</li> <li>• Elastomeric placement</li> </ul>	<ul style="list-style-type: none"> <li>• Cleaning or polishing using prophylaxis</li> <li>• Etching/wash/dry using 3 in 1 air and water syringe</li> </ul>
	Review adjustment	<ul style="list-style-type: none"> <li>• Archwire removal and placement</li> <li>• Auxillary attachment and removal</li> </ul>	<ul style="list-style-type: none"> <li>• Auxillary attachment and removal using slow or high-speed handpiece</li> </ul>
	Bracket Repair	<ul style="list-style-type: none"> <li>• Removal of composite with hand instrument</li> <li>• Bond up as above</li> <li>• Replace bonding with banding</li> <li>• Use GIC instead of composite</li> </ul>	<ul style="list-style-type: none"> <li>• Removal of composite with handpiece</li> <li>• Bond up as above</li> </ul>
	Debond	<ul style="list-style-type: none"> <li>• Bracket and band removal</li> <li>• Removal of adhesive using hand instrument</li> </ul>	<ul style="list-style-type: none"> <li>• Removal of adhesive using handpiece</li> </ul>
	Retainer	<ul style="list-style-type: none"> <li>• Use SEP without using 3 in 1 air and water syringe</li> <li>• Placement of the retainer</li> </ul>	<ul style="list-style-type: none"> <li>• Sandblasting</li> <li>• Cleaning or polishing using prophylaxis</li> <li>• Etching/wash/dry using 3 in 1 air and water syringe</li> </ul>
	Retainer Repair	<ul style="list-style-type: none"> <li>• Composite removal with hand instrument</li> <li>• Bonded retainer removal with hand instrument</li> <li>• Replacement of the bonded retainer using SEP without 3 in 1 air and water syringe</li> </ul>	<ul style="list-style-type: none"> <li>• Composite removal with slow or high-speed handpieces</li> <li>• Bonded retainer removal with slow and high-speed handpieces</li> <li>• Replacement of the bonded retainer using low and high-speed handpieces</li> </ul>
Removable Appliance	Removable Appliance / Hawley retainer	<ul style="list-style-type: none"> <li>• Impression (non-gagging)</li> <li>• Intra-oral scanning</li> <li>• Issue</li> <li>• Adjustment using hand instrument</li> </ul>	<ul style="list-style-type: none"> <li>• Adjustment/ trimming with slow and high-speed handpieces</li> </ul>
	Thermoplastic retainer	<ul style="list-style-type: none"> <li>• Impression (non-gagging)</li> <li>• Intra-oral scanning</li> <li>• Issue</li> <li>• Adjustment using hand instrument / scissors</li> </ul>	<ul style="list-style-type: none"> <li>• Adjustment/ trimming with slow and high-speed handpieces</li> </ul>
	Aligner	<ul style="list-style-type: none"> <li>• Impression (non-gagging)</li> <li>• Intra-oral scanning</li> <li>• Issue</li> <li>• Adjustment using hand instrument / scissors</li> <li>• Tooth preparation for attachment bonding using SEP without using 3 in 1 air and water syringe</li> <li>• Placement of attachment template and curing</li> <li>• Flash removal using hand instrument</li> <li>• Removal of the attachment manually with hand instrument</li> </ul>	<ul style="list-style-type: none"> <li>• Adjustment/ trimming with slow and high-speed handpieces</li> <li>• Tooth preparation for attachment bonding by etching/wash/dry</li> <li>• Flash removal with slow and high-speed handpieces</li> <li>• Removal of the attachment with slow and high-speed handpieces</li> </ul>
Others	Interproximal reduction	<ul style="list-style-type: none"> <li>• Manually using abrasive strips</li> </ul>	<ul style="list-style-type: none"> <li>• Bur with slow or high-speed handpieces</li> <li>• Disc with slow or high-speed handpieces</li> </ul>
	TAD	<ul style="list-style-type: none"> <li>• Injection of local anaesthesia</li> <li>• Placement with manual hand driver</li> <li>• Removal with manual hand driver</li> </ul>	<ul style="list-style-type: none"> <li>• Placement with handpiece</li> <li>• Removal with handpiece</li> </ul>

AGP – Aerosol Generating Procedure

Non-AGP – Non-Aerosol Generating Procedure

SEP – Self-etch primer

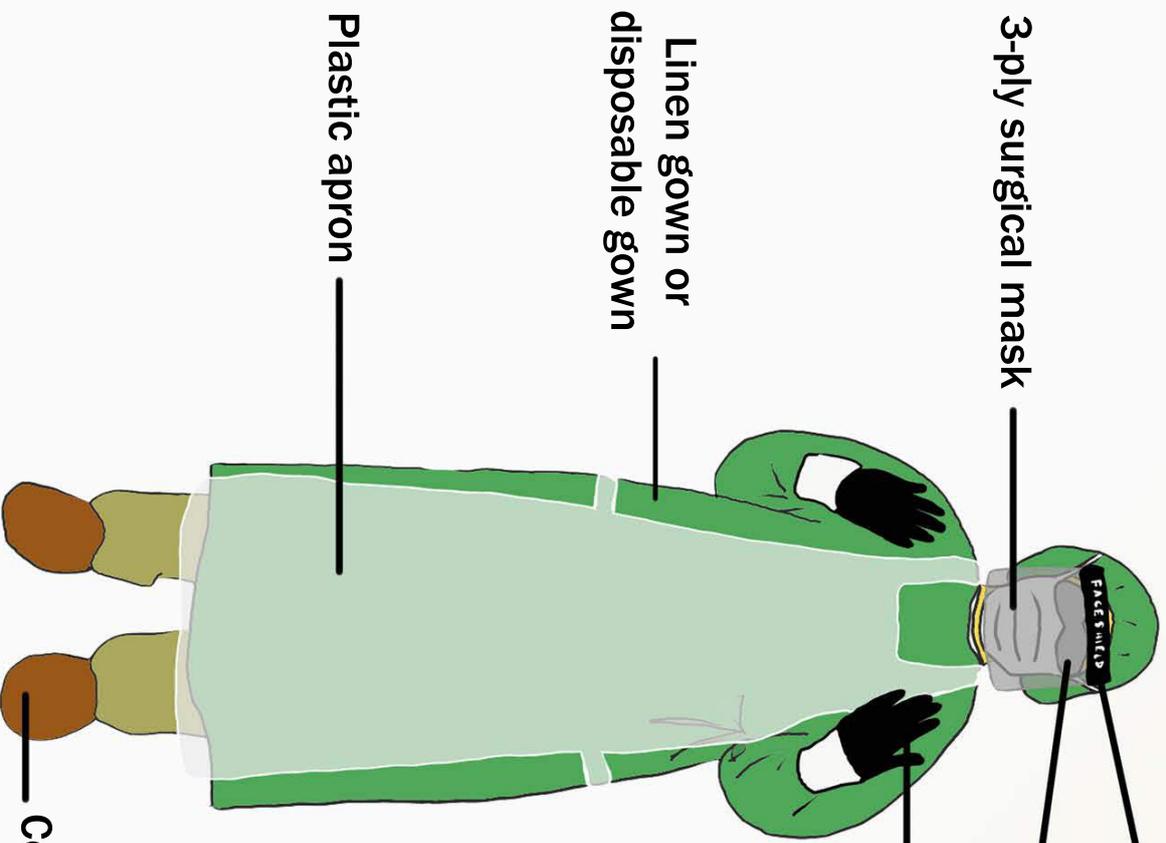
TAD – Temporary Anchorage Device

## APPENDIX 2: Recommended Personal Protective Equipment (PPE)

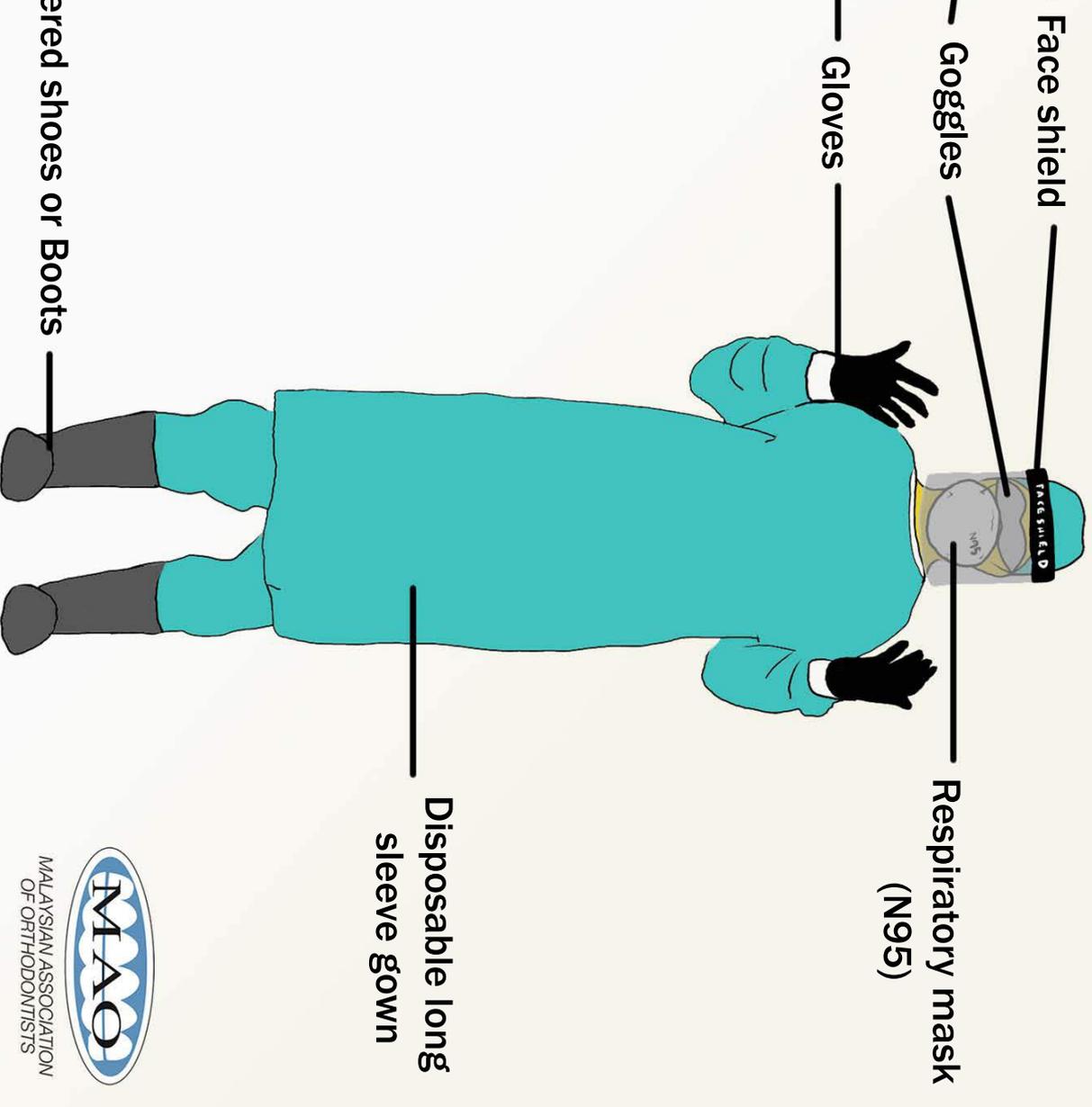
PPE	Waiting Room (Receptionist)	Remarks	Dental Surgery (Operator and Assistant)				MODERATE TO HIGH RISK*	DECONTAMINATION
			TREATING PATIENT					
			LOW RISK**	AGPs	Remarks	AGPs		
Head cover						✓ PUI or Covid-19 positive	To be disposed after every patient	
Goggles			✓	To be disinfected after every patient	✓	✓	To be disinfected after every patient	✓ (or Face Shield)
Respiratory mask (N95 or equivalent)			✓	Recommended. To be disposed after every patient or if it gets wet during procedure	✓	✓	To be disposed after every patient or if it gets wet during procedure	
3-ply surgical mask	✓	To be disposed at the end of the day	✓	To be disposed at the end of the session or if it gets wet or contaminated	✓		To be disposed after every patient or if it gets wet or contaminated	✓
Face shield	✓	If there is no barrier To be disinfected at the end of the day	✓	To be disinfected after every patient	✓	✓	To be disinfected after every patient or to be disposed after every patient	
Linen Gowns			✓	To be washed at the end of the session				
Plastic Apron			✓	Recommended to be disposed after every patient				
Disposable long sleeve fluid repellent isolation gown			✓	To be disposed after every patient	✓	✓	To be disposed after every patient	✓
Plastic or waterproof sleeves (if not bare below the elbow)			✓	To be disposed after every patient or wash for reuse next session (to wash hands and forearm up to the bare elbow with soap and water)				
Gloves			✓	To be disposed after every patient or if it gets torn	✓	✓	Double gloves To be disposed of after every patient or if it gets torn	✓
Boots or covered shoes			✓	Recommended. To be disinfected after every patient and to wash at the end of the session	✓	✓	To be washed at the end of the session	✓
Shoe cover					✓	✓	To be disposed after every patient	

\*Refer to *Lampiran 1 KATEGORI PESAKIT DAN RISIKO, Garis Panduan Perkhidmatan Kesihatan Perigian Pasca Perintah Kawalan Pergerakan Pandemik COVID-19 (Kemaskini 18 Mei 2020)*, pg. 24

## Non-AGPs



## AGPs



# ORTHODONTIC WORKFLOW IN PREVENTION OF COVID-19 TRANSMISSION

**Refer for urgent Covid-19 screening: Decontamination:**

Close contact with Covid-19 positive patients/ PUI



Social gathering



Travel history



Symptomatic (unwell)



Fever >38 C  
Cough and cold  
Sore throat  
Shortness of breath

Healthy



Seek urgent medical care.

Contact government hospital.

Defer orthodontic appointment.

Emergency treatment only.

Defer appointment otherwise.

Refer for medical care.

Routine orthodontic treatment.

## References

1. Ministry of Health, Malaysia.
2. World Health Organisation (WHO)



**Home**

**Reminder Call**

**Whatsapp Message**

(Arrange appointment in advance)

**Ask**

- If the patient is unwell
- Travel history
- Contact with PUI/ Covid-19 positive patients
- Social gathering

**Pre-appointment advice**

- ONE accompanying person
- BRUSH teeth before going to the clinic
- Patient to arrive 5 minutes before appointment time, not too early

## TRIAGE

Screen ALL patients and accompanying persons

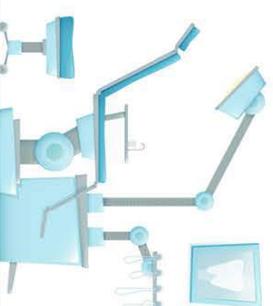
- Check temperature
- Fill up health and travel declaration form



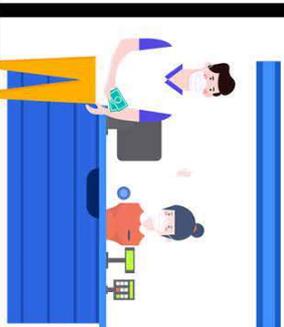
Reception/ Waiting Area



Treatment Room



Discharge



**Wear Mask**



**Wash hands**



**Maintain social distancing**



**Sanitise hands**



**Observe cough/ sneeze etiquette**



**Avoid handshake**



**ALL staff are advised to wear full PPE**

- Face shield
- Goggles
- Mask (3 ply mask/ N95)
- Disposable gloves
- Disposable gowns

Refer to the MDC cross infection guideline.

Added precautions:

1. Use pre-treatment mouthwash
  2. Use PPE accordingly
  3. Use disposable instruments
  4. Disinfect surgery in between patients
  5. AGPs
- allocate a dedicated surgery room
  - leave the procedure towards the end of the session
  - use high volume suction

**Contactless Payment**



**Online appointment**



\* Patient to inform if they become symptomatic in the 2 weeks duration following treatment

Limit to one accompanying person



Wait in the car