Standard Operating Procedure (SOP) to Inform Orthodontic Treatment in Wales During COVID-19 Pandemic

16th July 2020

Version 1.0

Draft August Update: Includes changes in SOP settle time following AGP and Non-AGP procedures. Links will be updated in final draft to follow

Draft Version 1.1

Summary

This guidance is intended for the use of clinicians providing orthodontic care in the primary and secondary care setting for patients who are not currently COVID-19 positive or suspected of being COVID-19 positive or have been identified as a contact of COVID-19 positive person. Under the current Test, Trace, Protect (Contact Tracing) Plan in Wales, these patients should be isolating at home (https://gov.wales/contact-tracing). This guidance aligns with Welsh Government's publications for dentistry during the Covid-19 pandemic and is based on the British Orthodontic Society's guidance for managing patients during COVID-19 pandemic.[1,2,3]

Orthodontic treatment for people with suspected/recently confirmed COVID-19 is not appropriate due to level of risk within orthodontic practice and if urgent care is required for this group of individuals then referral to the Urgent Dental Centre or hospital based specialists services should be considered.

Ultimately, it is orthodontic practices' responsibility to carry out practice level COVID-19 risk assessment, including staff risk assessments on a regular basis, update the relevant policies (e.g. staff sickness policy) and the whole practice Business Continuity Plans. They should develop and regularly update practice level COVID-19 Standard Operating Procedures (SOPs) to reduce the risk of COVID-19 transmission.

Information and Resources

Clinicians carrying out orthodontic procedures should refer regularly to relevant sources of information to ensure they are aware of the contemporaneous position. The following is a list of key sources of information but this is not exhaustive:

- Welsh Government: https://gov.wales/dental-health-services-coronavirus;
- Health Education and Improvement Wales: https://heiw.nhs.wales/covid-19/;

[1] https://awfdcp.ac.uk/content/files/De-escalation-SOP.pdf
[2] https://heiw.nhs.wales/files/covid-19-primary-care-dental-services-toolkit/
[3] https://www.bos.org.uk/COVID19-BOS-Advice/COVID19-BOS-Advice

- NHS Wales Dental Referral Management System: https://www.dentalreferrals.nhs.wales/dentists/covid/;
- Public Health Wales: https://phw.nhs.wales/topics/latest-information-on-novelcoronavirus-covid-19/
- British Orthodontic Society Covid-19 Advice. https://www.bos.org.uk/COVID19-BOS-Advice/COVID19-BOS-Advice

Orthodontic Procedures

This SOP recognises that evidence base specific to orthodontic treatments and COVID-19 is limited and thus adopts a risk assessment and management approach to reduce COVID-19 transmission and with patient and staff safety at the heart of those risk assessments.–Welsh Government's guidance is that all orthodontic practitioners should assess the risks of any procedure they carry out on an individual basis and undertake all necessary precautions they deem appropriate. This should be undertaken with reference to appropriate Welsh Government guidance and ~~in~~ in a particular:

- Updated SOP (August 2020) for Primary Care Settings in Wales.[4]
- COVID-10 infection prevention and control (IPC).[5]
- COVID-19 personal protective equipment (PPE).[6]
- Advice on PPE guidance implementation COVID-19: infection prevention and control (IPC).[7]
- Advice on aerosol generating procedures.[8]
- Guidance for primary dental care on personal protective equipment.[9]

Aerosol Generating Procedures (AGP)

The following procedures are currently considered AGPs:

- High speed air rotor handpiece.
- Ultrasonic and sonic handpiece.
- 3-in-1 spray or air/water syringes (gentle washing with water only is non-AGP).
- Air abrasion or intra oral sandblasting.
- Slow speed handpieces* (see below).

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[4] https://awfdcp.ac.uk/content/files/De-escalation-SOP.pdf
[5] https://www.gov.uk/government/publications/wuhan-novel-coronavirus-infection-prevention-and-control
[6] https://www.gov.uk/government/publications/wuhan-novel-coronavirus-infection-prevention-and-control/covid-19-personal-protective-equipment-ppe
[7] https://phw.nhs.wales/topics/latest-information-on-novel-coronavirus-covid-19/information-for-healthcare-workers-in-wales/advice-on-ppe-guidance-implementation/
[8] https://www.gov.uk/government/publications/covid-19-personal-protective-equipment-use-for-aerosol-generating-procedures
[9] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/878750/T2_poster_Recommended_PPE_for_primary__outpatient__community_and_social_care_by_setting.pdf

The advice from Welsh Government and the British Orthodontic Society is that most orthodontic procedures can be provided without generating an AGP providing guidance is followed and alternative techniques used where appropriate.[10]

AGPs may be avoided in most cases but where they are essential they may be provided using AGP protocols laid out in the relevant Welsh Guidance.[11]

Slow handpieces

It is possible for a slow handpiece to produce an aerosol particularly when run wet or with paste and when higher speed/ power settings are used. The evidence suggests that use of high volume evacuation (HVE) may reduce any aerosol production by 43% and a fluid resistant surgical mask (FRSM) can reduce the risks to operator from dust aerosol produced during, for example, an orthodontic debond, by up to 96%.

Risks can be reduced sufficiently if the slow handpiece is used in conjunction with high volume evacuation (HVE), held close to the tooth, run dry and at low speed/ power settings. Use of a slow handpiece in such a scenario may be considered as non-AGP.

New Patients

The reduced through put of patients due to social distancing and down time between patients will reduce patient contacts and capacity to treat significantly. This reduction in through put will radically reduce the ability to manage cases already in treatment.

Those cases that are already in treatment must take priority as will urgent problems. These patients have active medical devices *in situ* which should not be left unsupervised. New patient activity should be suspended until all cases that are currently in treatment have been seen and can adequately be seen on a regular basis to bring their treatment under control. Under Amber Alert Level new patients can be seen if it is felt that any delay could cause significant deterioration in their condition. These patients would be currently classed as 'urgent' on the All-Wales Referral Form.

Urgent new cases may be seen remotely or face-to-face and the urgency of their care assessed and prioritised. Information on resources can be found in the

- Updated SOP (August 2020) for Primary Care Settings in Wales.[12]
- NHS Wales Video Consulting Service[13]

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[10] https://www.bos.org.uk/COVID19-BOS-Advice/Recovery-Phase-Advice/What-is-an-orthodontic-AGP
[11] https://awfdcp.ac.uk/content/files/Standard-Operating-Procedures-for-AGPs-on-non-Covid-19-patients.pdf
[12] https://awfdcp.ac.uk/content/files/De-escalation-SOP.pdf
[13] https://digitalhealth.wales/tec-cymru/vc-service

- All Wales Toolkit[14]

Commencing a Course of Orthodontics

Those cases that have been accepted for treatment but do not yet have fixed appliances placed should not be started until all cases that are currently in treatment have been seen and can adequately be seen on a regular basis to bring their treatment under control. The exception to this is where the clinician feels that the individual's treatment will be compromised if further delayed e.g. patients that have already under gone extractions.

Scheduling Appointments

Appointments should be arranged in advance and patients triaged in advance to ensure that they or their family members are in an appropriate position to attend any scheduled appointment.[15]

Patients must be spaced throughout the day to leave time for cleaning and to limit waiting / contact times. A suggested scheduling process is described in the table below:

Patient	Recommendations
Shielding / in vulnerable groups	If appropriate, to be seen in primary care with an appointment at the beginning of the day. Ensure SOP is fully followed including social distancing and recommended decontamination processes before and after care to minimise risk.
AGPs	Space appointments to ensure social distancing. Book at the end of a session Schedule time for procedure and time for decontamination (to include air clearance in an appropriate room).*
Non-AG's	Space appointments to ensure social distancing. Schedule appointment plus decontamination and cleaning of surgery. (Only include a period to allow settle of droplet/ splatter for procedures that are likely to cause this outcome)*

* for patients with suspected/confirmed COVID or for patients who have unknown COVID status during a period of community spread/ outbreak of COVID).

[14] https://awfdcp.ac.uk/content/files/Primary-Care-Dental-Services-COVID-19-Toolkit.pdf
[15] https://awfdcp.ac.uk/content/files/De-escalation-SOP.pdf

Air Clearance Times (ACTs)

This is the time for the contaminated air to be replaced with fresh air in the surgery. The time this will take depends on the number of air changes in a surgery and is described as the number of exchanges per hour (ACPH). Currently, under the Amber phase, this is still based on the premise that contact with asymptomatic COVID-19 patients is a possibility. ACTs are important since they determine when the virus is likely to be cleared from the surgery air following an AGP is undertaken. ACTs also usually include the time for the virus to settle (aerosols and droplets) prior to surface decontamination in the surgery.[16] The time for air clearance commences at the point where aerosol generation stops.

The table below provides an indication of ACTs based on a range of ACPHs for the surgery. However, professional opinion should ideally be sought when calculating these times e.g. Occupational Therapists.

ACPH ¶	Time (mins.) required for removal 99% efficiency	Time (mins.) required for removal 99.9% efficiency
2	138	207
4	69	104
6+	46	69
8	35	52
10+	28	41
12+	23	35
15+	18	28
20	14	21
50	6	8

Settle Times

Infectious droplets will be produced during aerosol generating and non-aerosol generating procedures carried out on COVID-19 (symptomatic/asymptomatic) patients. These droplets can be highly infectious and can take 8-17 minutes to settle and before surface decontamination procedures can be undertaken. For AGPs, this period is usually included within the ACTs. For non-AGPs settle period is only required before cleaning and decontamination if the procedure has caused significant splatter.[17]

If a dental visit is unlikely to have generated droplets then a settle time is no longer necessary, given low community transmission at present. However, during 'Amber Alert' there could be circumstances (local outbreaks) where this might be the case: patients will be only attending if they need an examination and/or treatment.

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[16] https://www.cdc.gov/infectioncontrol/guidelines/environmental/appendix/air.html#tableb1
[17] https://awfdcp.ac.uk/content/files/De-escalation-SOP.pdf

Practicalities

Once a procedure has finished, if the patient replaces their facemask, if settle time required, time begins at this point and the timer should start. Decontamination of the surfaces can also be started at this time at distant points in the room-before the settle time is complete, but dental teams should try not to create too much disturbance/movement in the room (to allow the droplets to settle). Dental teams should be aware of potential contamination of these areas from aerosol settle. The greatest contamination will be within 1 m of the patient, so this area should be cleaned last after the settle time, if required, is complete.

For AGPs, at present, where the air clearance time is unknown, a one-hour ACT/settle time should be used (this is based on Public Heath England Infection control guidance). https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/893320/COVID-19_Infection_prevention_and_control_guidance_complete.pdf

However, the timer for the air clearance time can commence at the point where aerosol generation stops (e.g. handpiece is put down). The timer should be started again from the beginning if there is further aerosol generation. Although it is recognised that use of a rubber dam/HVE reduces aerosols, the implication of reduced aerosols on possible transmission is unknown.

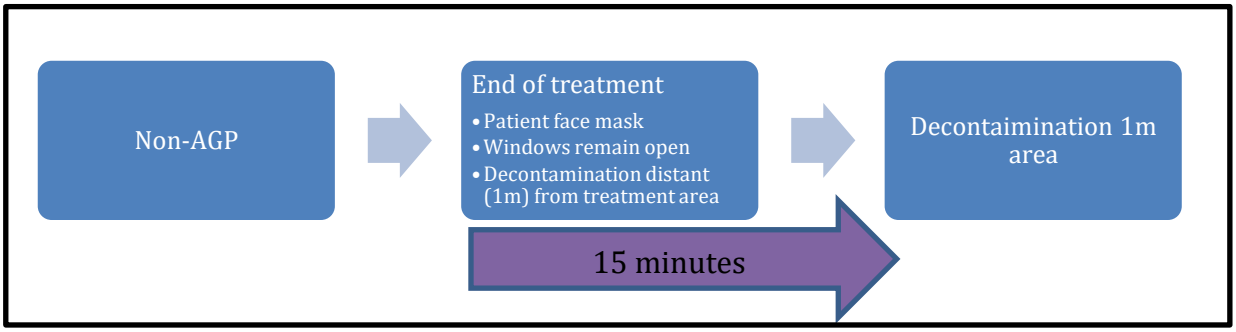
Examples

For non-AGP

Non-AGP settle time (only required if there has been significant splatter) begins as soon as the patient puts their facemask on after the dental procedure has finished.

For example:

- The surgery can be cleaned in this time apart from the 1 m radius where the patient was sitting. Computer patient records can also be completed during this period if outside the 1 m zone and the equipment is able to be decontaminated between patients. The 1 m area should be decontaminated last. (and at the end of any required settle time – if this has been required).

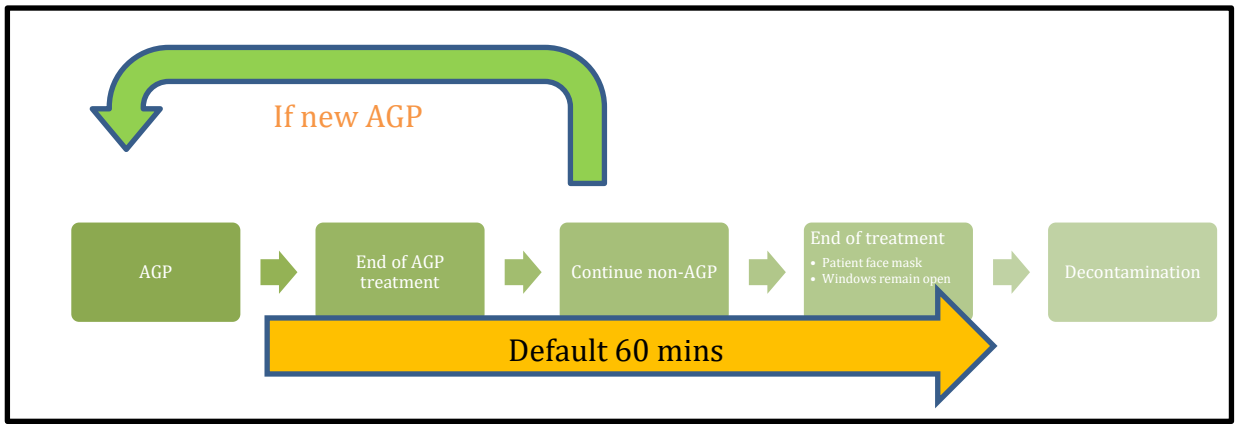


For AGP

- AGP settle time can begin as soon as the handpiece/3-in-1/ultrasonic is last used. Non AGP dental care can continue to be carried out in that time. Surgery decontamination can commence at the end of the treatment for non-AGPs but the 1 m zones should be cleaned last; and not until the settle time (if required) is complete.

For example:

- A room with one-hour settle time, if the handpiece was last used at 2 pm and non-AGP care is provided for a further 30 minutes and the facemask placed on the patient at the end of dental treatment then the settle time will be a further 30 minutes. Optimal ventilation (10 air changes per hour reduces this settle time to 20 mins)



Additional Notes

- If the surgery is planning to have an air exchange system fitted i.e. air extraction unit, the manufacturer's information can be used to verify the number of air exchanges per hour depending on the size of the surgery.

- If the surgery already has an air extraction unit then evidence of the number of air changes per hour (ACH) should be available. If this cannot be verified then advice should be sought from an occupational hygienist or commissioning consultant.

- In the absence of verification of the number of air changes per hour (ACH), even if there is an air extraction unit or windows that open, the one-hour default fallow time for AGPs should be followed.

- If a surgery does not have any windows or ventilation then current recommendations are that it should not be used for AGPs at the present time.

Where the number of air changes per hour (ACPH) in a room is used as the basis for practices to reduce Air Clearance Time (ACT) of less than 60 mins, such information and calculations provided to the practice by a competent person/organisation should be made available on request by the Health Boards/Healthcare Inspectorate Wales or any other relevant authority.

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