Standard Operating Procedure for the Dental Management of Non-COVID-19 Patients in Wales

All Wales Clinical Dental Leads COVID-19 Group – Reports to CDO Welsh Government

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The Group is independent of Welsh Government but provides reports and recommendations directly to the Chief Dental Officer for Wales.

Executive Summary

This guidance is applicable to Wales. The document brings together the information from previous Standard Operating Procedures and key changes are highlighted in the text. It is intended for dental care settings that provide care involving patients who are COVID-19 (C-19) negative or who are not suspected of being C-19 positive. Separate SOPs are available at centres for people with suspected/ confirmed C-19. Further documents have been developed in conjunction with National Groups/ Managed Clinical Networks for specific areas of service provision e.g. paediatrics, orthodontics, and domiciliary care. Primary care providers in other UK nations should refer to guidance produced by their own administrative bodies and regulators.

Background

The onset of symptoms after exposure (incubation time) to C-19 is currently estimated at between one and fourteen days.[1] Patients may be infectious for one to two days before the onset of symptoms, they may be most infectious when they are symptomatic and it is estimated that they may be infectious for up to two weeks.

Cases can deteriorate rapidly, often during the second week of disease, and this can lead to death.[1] As this is a novel virus there is no immunity in the population and current estimates indicate that C-19 has caused infection for between 5 and 10% of the UK population with the rest remaining susceptible to infection. For most patients the symptoms are mild and many may be asymptomatic.

C-19 symptoms can vary in severity from no symptoms, to having fever ≥37.8°C, flu like symptoms, persistent cough (with or without sputum), anosmia (loss of the sense of smell), ageusia (the loss of the sense of taste), hoarseness, nasal discharge or congestion, shortness of breath, sore throat, wheezing, sneezing, general fatigue, muscular pain and GI symptoms. Severe cases can develop pneumonia, acute respiratory distress syndrome, sepsis and septic shock.[1]

Recent reports indicate that C-19 transmission is primarily between people through respiratory droplets and contact routes, this includes fomites on surfaces.[2] The amount of viable virus in aerosol has not yet been confirmed and the amount of virus exposure which can result in infection is also unclear at this time. At present, the World Health Organisation (WHO) recommend airborne precautions for AGPs in conjunction with undertaking risk assessments. The WHO also recommends frequent hand hygiene, respiratory etiquette, and environmental cleaning and disinfection.[3]

The Welsh Government strategic approach since March 2020 has been to reduce community transmission through social distancing, protecting the most vulnerable and pausing all non-essential services at the peak of the pandemic. Services are being restored in this recovery phase. This has been supported by the introduction of a Test, Trace, Protect strategy for identification, isolation and containment (in Wales) on the 1st of June 2020.[4] The aim is to restore the delivery of routine care to dental patients whilst taking the necessary measures to ensure patient safety. Patient advice and information is provided by NHS Direct Wales (online) and NHS 111 Wales (telephone).

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[1] European Centre for Disease Prevention and Control: Q and A on COVID-19 https://www.ecdc.europa.eu/en/covid-19/questions-answers

[2] Modes of transmission of virus causing COVID-19: implications for IPC precaution recommendations (29 March 2020) https://www.who.int/news-room/commentaries/detail/modes-of-transmission-of-virus-causing-covid-19-implications-for-ipc-precaution-recommendations

[3] Modes of transmission of virus causing COVID-19: implications for IPC precaution recommendations: https://www.who.int/publications-detail/modes-of-transmission-of-virus-causing-covid-19-implications-for-ipc-precaution-recommendations

[4] Test Trace Protect: Our strategy for testing the general public and tracing the spread of coronavirus in Wales. https://gov.wales/test-trace-protect-html

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Changes since previous releases

This document should be considered as a live document and will be updated as new information and evidence becomes available.

Key changes from previous SOPs

The key changes included in this document have been highlighted within the text. This document brings together the information from previous Standard Operating Procedures.

Information about providers for AGP care has been updated to reflect current shielding arrangements.

The definition of low risk patients, for whom standard infection control measures (and no clearance times are needed) has been updated to reflect the latest infection control guidance.[5]

The position in relation to the need for settle time for non–AGP procedures has been clarified following recent publications.

Time for settle and clearance following AGPs has been updated to reflect current transmission-based precaution advice[6], the recent SBAR Ventilation, Water and Environmental Cleaning in Dental Surgeries Relating to COVID-19[7] and HTM-03-01.[8]

No settle time is required for most non-AGP procedures. For non-AGP procedures that have produced a significant about of splatter/ droplets (for example a difficult extraction) it is recommended that there should be a minimum of 10 minutes between the end of the procedure (e.g. the tooth being removed) and the next patient entering the room to allow larger droplets to settle and enable effective cleaning.

For rooms with known air changes, where mitigating measures are used, this document refers to the tables (examples provided in table 1 and 2 below) that are provided in the SBAR document.[7] **For AGPs in a room with the recommended number of air changes (>10ACPH)** as outlined in HTM-03-01[7,8] a minimum of 16 minutes is considered appropriate for short AGP treatments (>10 min) where high volume (HV) suction is used, extending to 18 minutes for AGP treatments of 40minutes.

Where other mitigating factors are also used e.g. rubber dam, fallow times cannot be below 10 minutes. A minimum of 10 minutes must remain for larger droplets to settle prior to surgery decontamination and before the next patient enters the room irrespective of the calculated fallow time and any mitigation.

Clarification has been given to indicate that the end of AGP is the completion of the AGP component of treatment.

[5] https://www.gov.uk/government/publications/decontamination-in-primary-care-dental-practices
[6] https://phw.nhs.wales/services-and-teams/harp/infection-prevention-and-control/nipcm/chapter-2-transmission-based-precautions-tbps/
[7] https://www.scottishdental.org/wp-content/uploads/2020/08/Ventillation-Final-Copy-1.pdf
[8] https://www.gov.uk/government/publications/guidance-on-specialised-ventilation-for-healthcare-premises-parts-a-and-b

Table 1 Post AGP settle and clearance time for surgeries (in minutes) according to the duration of procedure when **no mitigation is used** (i.e. no HV suction) and the number of air changes per hour in the room (table from SBAR Ventilation, Water and Environmental Cleaning in Dental Surgeries Relating to COVID-19)

	Room Air change rate (ACPH) (with post AGP times for procedures times in min below)								
Duration of AGP (mins)	1	2	3	4	5	6	8	10	12
10	299	147	96	71	56	46	34	26	21
20	336	163	106	77	60	49	35	27	22
40	368	176	112	81	63	50	36	27	22

Table 2 Post AGP settle and clearance time for surgeries (in minutes) according to the duration of procedure and the number of air changes per hour in the room with rubber dam and high-volume suction* mitigation (table from SBAR Ventilation, Water and Environmental Cleaning in Dental Surgeries Relating to COVID-19)

	Room Air change rate (ACPH) (with post AGP times for procedures times in min below)								
Duration of AGP (mins)	1	2	3	4	5	6	8	10	12
10	130	63	40	29	22	18	12	10*	10*
20	167	79	50	35	27	21	14	10*	10*
40	199	91	56	39	29	22	15	10*	10*

*Please note that not all units can provide high volume suction

This document also provides an update on the use of local recirculating air cleaning devices (with HEPA filtration and UVC) to improve air quality. Instructions for practices who wish to use this equipment and the need to verify measurements (flow rates) and ACPH is also included. In addition, the use of optimal maintenance regimes, calculations from the ventilation SBAR[5] and maintenance of records of all information relating to decisions about times for possible future reference is included.

Fallow times for AGPs may be omitted if the next patient is a member of the same household in close contact and is not in an at-risk group. A fallow time must be in place following the care of the household group.

Advice has now been included on the very brief, gentle use of the 3 in 1. If used in this way, with high volume suction mitigation, with a low risk patient in a low risk geographic area, this would be a low risk procedure and no additional fallow time should be needed.

Advice to maintain social distancing (2m) and wearing of masks in all communal areas where this is not possible is also emphasised in the main text.

Personal protective guidance has been updated to reflect the latest Infection Control Guidance, which now omits shoe covers and hats. These are now optional.

De-escalation in Wales

De-escalation of the C-19 response covers the phase when community transmission is decreasing.[9]

Aim

The aim will be to implement a phased, risk-based re-establishment of dental services to meet population needs.

Objectives

Prioritise dental care for at-risk groups and people with symptoms/ urgent routine dental problems.

Increase practice-based dental care to meet the population's oral health needs.

Maintain emergency/ urgent dental care provision (COVID and non-COVID) to meet requirements.

Re introduction of routine dental care and dental prevention activities based on risk

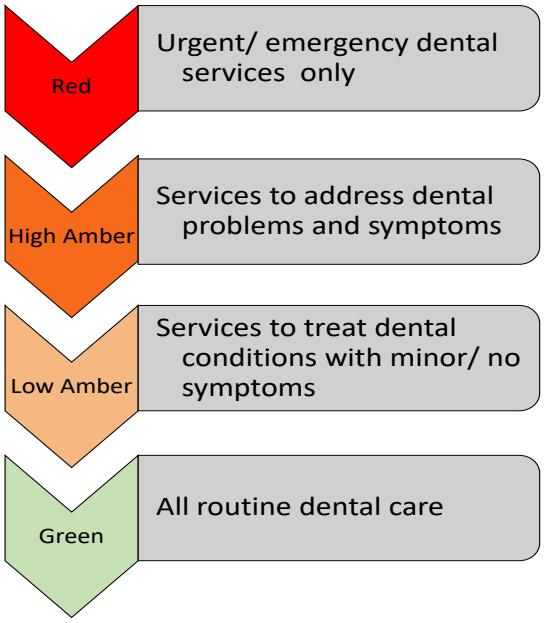
This approach will be based on risk assessment, to minimise the possibility of transmission of C-19 to patients and the dental team within the dental care setting or during dental care procedures.

De-escalation principles

Capacity for dental care is limited by measures to reduce transmission risk particularly in the early stages of de-escalation. However, given the current lower community transmission in Wales we are now moving into low amber. The approach aims to deliver dental services in a way that prioritises care for those most in need and at risk of serious complications or significant deterioration. Services provided can now increase as C-19 risk reduces. Routine assessment can resume if there is capacity to do so, again by focussing on those who are vulnerable or at risk first. This SOP supports the safe delivery of AGP care and a stepwise increase in care to meet patient needs based on risk.

The Urgent/ Emergency Designated Dental Centres will continue to provide urgent and emergency dental care for patients with C-19 during the green phase of de-escalation until the point where this is no longer necessary.

De-Escalation Alert Levels and Dental Services



[9] Official communications from the Welsh Government AWDPH pages: https://awfdcp.ac.uk/covid-19/official-comms

Relevant Guidance

This document should be considered alongside current advice, guidance and guidelines for dental care:

- COVID dental de-escalation plans [10]
- COVID-10 infection prevention and control (IPC)[11,12]
- COVID-19 personal protective equipment (PPE)[13]
- Advice on PPE guidance implementation COVID-19: infection prevention and control (IPC)[14]

Advice on aerosol generating procedures [15]should be read alongside guidance for standard and transmission based precautions.[14] The situation is constantly changing and documents are being updated as new evidence becomes available. As such, it is important to continue to access information regularly, from recognised and reliable sources.

Updates and information

Dental teams are advised to keep up to date, regularly reviewing information and the latest updates:

- Information for Health and Social Care Professionals – Wales (including PPE);
- Coronavirus (COVID-19): latest information and advice;
- PHW COVID-19 interim guidance for primary care.

Remote assessment resources

Patients should be assessed by a dentist by telephone or video, where appropriate, gathering enough information to identify whether the individual has:

- A serious condition requiring urgent medical/dental attention to save life;
- A condition which could be self-managed with appropriate advice and possible prescription;
- An urgent dental condition which needs face-to-face assessment, diagnosis or treatment.

It is recommended that assessments are used in advance of the appointment to reduce appointment times in practice. The video consultation platform Attend Anywhere is currently being made available to support practices in this role.[16]

A number of resources have been developed to support the management of dental cases, and dental care in the recovery phase of the pandemic.

- Management of Acute Dental Problems During COVID-19 Pandemic[17]
- British Endodontic Society: COVID-19[18]
- COVID19 BOS Advice[19]

10 Official communications from the Welsh Government AWDPH pages: https://awfdcp.ac.uk/covid-19/official-comms
11 https://www.gov.uk/government/publications/wuhan-novel-coronavirus-infection-prevention-and-control
12 https://phw.nhs.wales/services-and-teams/harp/infection-prevention-and-control/nipcm/
13 https://www.gov.uk/government/collections/coronavirus-covid-19-personal-protective-equipment-ppe
14 https://phw.nhs.wales/topics/latest-information-on-novel-coronavirus-covid-19/information-for-healthcare-workers-in-wales/advice-on-ppe-guidance-implementation/
15 https://www.gov.uk/government/publications/covid-19-personal-protective-equipment-use-for-aerosol-generating-procedures
16 https://digitalhealth.wales/tec-cymru/vc-service
17 http://www.sdcep.org.uk/published-guidance/acute-dental-problems-covid-19/
18 https://britishendodonticsociety.org.uk/
19 https://www.bos.org.uk/COVID19-BOS-Advice/COVID19-BOS-Advice

Conditions which require urgent medical/dental attention to save life

Patients with suspected life-threatening conditions should be immediately referred to the appropriate emergency medical services.

Advice on self-care

Some cases will only require advice to enable the patient to self-care. NHS 111 Wales Encyclopedia[20] has 31 pages on dental topics. Evidence-based principles of prevention should be used for all patients.[21]

Remote prescribing

Dentists may prescribe pain relief and/ or antimicrobials in situations where it is clinically appropriate, following an assessment (including medical history and virtual assessment). A face-to-face consultation should be undertaken where possible.

- Drugs for the Management of Dental Problems During COVID-19 Pandemic;[22]
- Primary Care Dental Services COVID-19 Toolkit: Appendices 2 and 4;[23]
- FGDP COVID-19: latest guidance and resources for GDPs;[24]
- High level principles for good practice in remote consultations and prescribing.[25]

Advice must be given to the patient so that they know what to do if their condition starts to deteriorate and to call Dental Helpline, 111 or 999 should airway problems develop. They must be reminded of their need to declare their C-19 status to the ambulance service/A&E staff.

Risk Assessment

A C-19 and medical history should be taken in advance of care (Appendix 2) and this should be undertaken remotely. Where this is available the option of testing for C-19 to confirm status should be considered. New infection control guidance now categorises risk.[26] Most dental patients currently will be in a medium or high-risk category for treatment.

Patients who are categorised as low risk for C-19 (in accordance with the infection control classification)[28] may be treated with standard infection control precautions (SICPS)[27] and no fallow time.

LOW RISK for C-19

Triaged/clinically assessed individuals with:
no symptoms
OR
no known recent COVID-19 contact who have isolated/shielded
AND
Have a negative SARS-CoV-2 (COVID-19) test within 72 hours of treatment and, for planned treatment and have self-isolated from the test date
OR
Have recovered from COVID-19 and have had at least 3 consecutive days without fever or respiratory symptoms and a negative COVID-19 test
OR
Are regularly tested (remain negative) e.g. some care facilities and prisons

20 https://111.wales.nhs.uk/encyclopaedia/
21 Delivering better oral health: an evidence-based toolkit for prevention: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/605266/Delivering_better_oral_health.pdf
22 https://www.sdcep.org.uk/wp-content/uploads/2020/04/SDCEP-MADP-COVID-19-drug-supplement-080420.pdf
23 https://heiw.nhs.wales/files/covid-19-primary-care-dental-services-toolkit/
24 https://www.fgdp.org.uk/news/covid-19-latest-guidance-and-resources-gdps#Remote%20prescribing%20and%20advice
25 https://www.gdc-uk.org/docs/default-source/guidance-documents/high-level-principles-remote-consultations-and-prescribing.pdf
26 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/910885/COVID-19_Infection_prevention_and_control_guidance_FINAL_PDF_20082020.pdf
27 https://www.gov.uk/government/publications/wuhan-novel-coronavirus-infection-prevention-and-control/standard-infection-prevention-control-precautions-sicpsall-pathways

Prioritising Care

Urgent/ emergency conditions should be prioritised. Those with the most urgent care need should be seen ahead of low risk routine cases. Routine cases should be seen wherever there is capacity to do so.

Figure 1: Examples of severe urgent/ emergency dental conditions

Situations where leaving the dental condition without a clinical intervention may endanger the health of the patient/ would be likely to result in admission to hospital e.g.:

- Diffuse swelling / lymphadenopathy without a discharging sinus
- Suspected cancer
- Bleeding that cannot be controlled with local measures

Cases that have not responded to local management following local advice, antibiotics and appropriate analgesia e.g.:

- Severe pain that has not responded to painkillers after 48 hrs of use
- Severe pain or diffuse swelling that has not responded to antibiotics after 72 hours of use
- A recent injury in a vital tooth which has resulted in pulpal involvement or trauma that has resulted in a deranged occlusion.

Practices should continue to work to support patients with dental care problems, managing patient expectations and minimising the burden of dental problems on other health care services (e.g. working to prevent unnecessary patients attending at general medical practices, other NHS teams and helplines).

C-19 and urgent dental conditions which need face to face assessment, diagnosis or treatment

Patients should be assessed for signs and symptoms of C-19 at the stage of telephone consultation using the latest criteria.[28]

Cases/suspected cases would include one or more of the following in the previous 14 days:

- Confirmed C-19 (tested positive);
- Symptoms consistent with C-19 i.e. new continuous dry cough and/ or high temperature ≥37.8°C, a recent loss of smell or taste (sore throat, shortness of breath, difficulty breathing, nasal discharge and GI symptoms are also possible symptoms);
- Contact with a confirmed case (tested positive).
- Where an individual has been told to self-isolate as part of TTP or travel

Clinicians should also be aware of the possibility of other symptoms particularly in patients who are immunocompromised (including severe sore throat, loss of sense of taste).[29]

28 COVID-19: investigation and initial clinical management of possible cases: https://www.gov.uk/government/publications/wuhan-novel-coronavirus-initial-investigation-of-possible-cases

[29] https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html

Provision of care during the recovery phase

Patient status	Dental condition	Dental Care Provider
Suspected or confirmed C-19 (high risk C-19)	Routine/ non-urgent	Treatment should be deferred for 14 days after symptoms have stopped/ until confirmed negative.
	Urgent/ emergency non-AGP/ AGP	U/EDDC for C-19
No history/symptoms of C-19	All care	Primary Care Dental Practice
Patients who are shielding[4] or who have a higher risk of complications from C-19[30]	All care	People with no history/symptoms of C-19 (low risk C-19) can be seen in Primary Care Dental Practice. People with suspected or confirmed C-19 (high risk C-19) should follow the urgent/ non-urgent pathway as required.
Patients who require domiciliary care	All care	Procedures of domiciliary care services should follow Health Board Domiciliary SOPs and it is recommended that those providing regular dental domiciliary are tested regularly for C-19 (e.g. every fortnight)

[30] Examples of high-risk individuals include: Older people, People who are shielding or who have health conditions which put them at risk, Pregnant women, People living in institutions e.g. residential care and prisons.

Scheduling Appointments

Appointments should be arranged in advance.

Patients must be spaced throughout the day to leave time for cleaning and to limit waiting /contact times. A recommended 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 social distancing and recommended decontamination processes[31] 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-AGPs	Space appointments to ensure social distancing. Schedule appointment plus decontamination time. For non-AGP procedures that have produced a significant about of splatter/ droplets (for example a difficult extraction) it is recommended that there should be a minimum of 10 minutes between the end of the procedure (e.g. the tooth being removed) and the next patient entering the room to allow larger droplets to settle out and enable effective cleaning.[32,33,35]

The time for decontamination following AGPs will depend on the number of air changes in the surgery per hour (ACPH). For a precise figure, ACPH verification is required for each surgery. Where the ACPH is not known, currently recommended times should be used (e.g. 1 hour following the cessation of an AGP, ensuring any fallow time includes 10 minutes for larger droplets to settle).[34] Windowless surgeries with no air changes should not be used for AGPs. Where no other option is available, measures must be employed to improve air quality (installation/use of appropriate equipment to increase air changes and remove contaminants).[30] Verification should be sought from an appropriately qualified expert (e.g. commissioning company or occupational hygienist) when calculating ACPH and times. If the patient is in a Low Risk COVID-19 Pathway in accordance with the infection control guidance released August 2020, [35] standard infection control measures (e.g. FRSM) with no additional settle time is appropriate. Further advice will be provided as relevant evidence develops.

Should PPE supplies be limited, dental teams should avoid unnecessary referral or their use to ensure that supplies are maintained for those who are most in need of care (e.g. those who have pain or

31 https://www.gov.uk/government/publications/decontamination-in-primary-care-dental-practices
32Transmission routes of respiratory viruses among humans: https://www.sciencedirect.com/science/article/pii/S1879625717301773
33The airborne lifetime of small speech droplets and their potential importance in SARS-CoV-2 transmission: https://www.pnas.org/content/117/22/11875
34 https://www.scottishdental.org/wp-content/uploads/2020/08/Ventillation-Final-Copy-1.pdf
35https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/910885/COVID-19_Infection_prevention_and_control_guidance_FINAL_PDF_20082020.pdf

infection). Criteria for AGP procedures and for acceptance for AGP care at designated sites may be modified if the risk of transmission reduces and PPE availability changes.

Record keeping

Good record keeping is essential. Notes should be completed before and after care. Do not take any paperwork into the surgery for AGPs. All paperwork must be signed by the dentist and, where relevant, signed on the patient's behalf by the dentist and marked with COVID-19. Where possible, remove computer equipment from the surgery. Where this is not possible ensure this is appropriately covered during treatments and can be decontaminated.

Records for each patient:	When	Example data management
A triage Urgent/Emergency Checklist/ Plan (Appendix 3)	Completed by phone before entering the surgery	Disposed of in the surgery following treatment
A full, written medical history form (Appendix 2)	Completed by phone before entering the surgery	Scan/ enter to computer same day
If necessary, a radiograph request form	Before entering the surgery if indicated	Scan/ enter to computer same day
A FP17 PRWe for NHS patients	If NHS	Scan/ enter to computer same day

Preparing staff

Practice policies, staff risk assessments, training needs, wellbeing arrangements and instructions (for example laundry and uniform) should be reviewed and measures put in place as required (Appendix 4).

Preparing the practice environment

The use of facilities and zoning should be considered in terms of infection control for C-19 and in line with guidance on social distancing. Instructions for each area and PPE should be clear (Appendix 5). For example:

Location	Facility /zone
Main Entrance	Patients enter.
Reception	Contactless payments/ over the phone payments
Waiting room	Socially distanced seating. Masks and Hand Hygiene.
Surgery 1	AGP treatment room
Surgery 2	AGP treatment room
Surgery 3	Non-AGP treatment room
Staff Entrance	Exit
Storeroom	Storage of PPE. Emergency Resus Kit Direct dispensing of prescriptions Emergency kit including oxygen and defib /emergency drugs

Consider the patient flow, keeping foot-fall to a minimum. A map of facilities can also assist with planning for infection control and zoning.

There should be a designated entrance which should remain closed if possible to avoid patients "dropping in".

Communal areas (Appendix 6) and surgeries should be prepared for care (Appendix 7).

Procedures for Patients Requiring non-AGP

Primary care teams should offer appropriate non-AGP care during the amber phases of de-escalation if appropriate. To minimise the risk teams should:

- Carry out risk assessments for C-19 as part of the assessment prior to care;
- Have a clear process for managing the patient journey
- Manage urgent/emergency issues as a key priority during de-escalation;
- Plan treatment in accordance with the level of alert, taking in to consideration, the risk of transmission of C-19;
- Employ measures to reduce risk of aerosol e.g. high-volume suction wherever possible (Appendix 4 and 5);
- Use approaches to reduce contamination of the oral cavity and the working field e.g. the use of rubber dam (Appendix 5);
- Paediatric guidance should be used for children's dentistry (Paediatric Dentistry SOP);
- Recommended guidance and SOPs (e.g. orthodontic[36], domiciliary care, sedation) should be followed when providing care in accordance with the level of alert;
- There is a risk of contamination from the removal of PPE after non-AGP carer and so the area should be cleaned with care whilst wearing appropriate PPE.[37]

Non-AGP Patient Arrival Example

Patient will be collected or will follow staff instructions for entry to the practice.

- Patient will be asked to confirm their identity and will then be instructed to use alcohol hand rub, directed to wear a FRSM.
- Where waiting room facilities are in use these should be socially distanced and both patients and staff should wear masks in this area.
- If a radiograph (e.g. OPT) has been requested to be taken before entering the surgery, member of staff will escort the patient directly to the radiography room where a trained operator will take the radiograph.
- The staff member will remain outside the radiography room will then escort the patient directly to the surgery.
- Radiograph/ OPT should be printed and taken into surgery for clinician.

36 The AGP Question: Implications for Orthodontics: https://www.bos.org.uk/Portals/0/Public/docs/Advice%20Sheets/COVID19%20FACTSHEETS/Recovery%20Phase%20Advice/AGP%20BOS%20guide%20Version%20May%206th%202020%2016.30aw.pdf

37 Liu, Y., Ning, Z., Chen, Y., Guo, M., Liu, Y., Gali, N. K.,. & Liu, X. (2020). Aerodynamic analysis of SARS-CoV-2 in two Wuhan hospitals. Nature, 1-6.

Non-AGP PPE

Area	Recommended PPE
Waiting Areas	• Good Hand Hygiene • Fluid Resistant Surgical Mask (IIR)
Dental Surgeries non-COVID (non-AGP area)	• Good Hand Hygiene • Disposable Dental Gloves • Disposable Plastic Apron • Fluid Resistant Surgical Mask • Eye Protection (if possible, disposable goggles or face shield. Where reusable this should be cleaned following manufacturer recommended process) • Use of Appropriate Donning and Doffing non-AGP PPE.[38]

In the surgery example

Maintaining social distance where possible

- Withdraw to at least 2 metre distance when able.
- The dental nurse should stand 2 metres away unless needed for chair side working.
- Approach the patient only as necessary for treatment.
- Disposable instruments should be used whenever possible and placed directly into the surgery sharps bin after use.
- Equipment and materials required should be set out in advance. Drawers should be kept shut and covered. Please note all unused instruments must be re autoclaved.
- The need for additional instruments or materials should be avoided. If they are required, these can be laid out ready or a 'runner nurse' be available outside the surgery.

Additional procedures example

Radiographs

- Intra-oral radiographs can be taken in the surgery but be aware that these procedures can cause coughing which may generate aerosolised saliva/ droplets.
- The computer and digital reader should be set ready to process prior to the patient entering the room before the radiograph is exposed. If no monitor is available in the surgery then a print off of the radiograph should be made available to the clinician
- The contaminated package should be opened by the gloved dentist/therapist film removed by a nurse with clean gloves on and placed IMMEDIATELY into the digital reader for processing so that only minimal light damage occurs. If scanner is not in the surgery then the clean radiograph can be handed to a 'runner' nurse to develop.

[38] Donning and doffing PPE: https://www.youtube.com/watch?v=-GncQ_ed-9w

Non-AGP treatment protocols

Environment and ventilation

- The surgery door should be closed during treatment, settle time and decontamination with a notice on the door to indicate when in use and safe time for re-entry.
- Windows should be open where appropriate (this may not be appropriate where closed environment, negative pressure systems are in place).
- Air conditioning which recirculates air into the surgery should be switched off if it is linked to other practice areas.[39]
- Air conditioning that removes air from the environment should be switched on (venting of extractor fans must be assessed alongside the risk of contamination of other areas) with notices placed at the vents. Seek advice in relation to air conditioning as required.
- Consider using more than one surgery to support surgery downtime.

Treatment procedures

- Manage urgent/emergency issues as a key priority during amber phase;
- Plan treatment in accordance with the level of alert, taking in to consideration, the risk of transmission of C-19.
- Where there is a risk of transmission of C-19 (though local community transmission), avoid aerosol generating procedures (AGPs), unless there is no other practical option.
- Employ measures to reduce risk e.g. high-volume suction and rubber dam wherever possible (Appendix 10).
- Paediatric guidance should be used for children's dentistry (Paediatric Dentistry SOP).
- Recommended guidance and SOPs (e.g. Orthodontics[40], domiciliary care, sedation etc) should be followed when providing care in accordance with the level of alert if available.

At the end of the appointment

- Maintain social distance, patient should put mask back on should then be directed to leave the room after the treatment and any necessary post-operative instruction.
- Patients should be escorted by a staff member to the exit.
- Payment arrangements should be made in advance or procedures followed to minimise contamination.
- Arrangements for future appointments should follow appropriate procedures (telephone or a pathway minimising contamination).
- Patients should be directed to dispose of mask on exit.
- No settle time is needed for most non-AGP procedures. For non-AGP procedures that have produced a significant about of splatter/ droplets (for example a difficult extraction) it is recommended that there should be a minimum of 10 minutes between the end of the procedure (e.g. the tooth being removed) and the next patient entering the room to allow larger droplets to settle out and enable effective cleaning.

[39] HSE- ebulletin 22.5.2020 Coronavirus update-Air conditioning
[40] The AGP Question: Implications for Orthodontics: https://www.bos.org.uk/Portals/0/Public/docs/Advice%20Sheets/COVID19%20FACTSHEETS/Recovery%20Phase%20Advice/AGP%20BOS%20guide%20Version%20May%206th%202020%2016.30aw.pdf

Additional Procedures for Patients Requiring AGP

Procedures may need to be adjusted to fit with individual circumstances. However, for guidance purposes:

Surgery staff:

- 1 clinician,
- 1 chairside dental nurse
- 1 "buddy" dental nurse (does not need to be FFP3/2 fit tested) to be allocated to work outside the surgery on a rotational basis.

Suitable alternatives to a dental nurse can also considered such as another suitably qualified and experienced member of the dental team. **The clinician and chairside nurse must follow the current guidance in respect to fit testing of the relevant mask type (FFP3/2)**. Copies of fit test certificates (where issued) and records of fit tests (pass and fail) for each staff member and each mask type should be retained by the practice. It should be made clear to staff that the test is only applicable to the type of mask that has been fitted. Reusable masks should be fit tested. Manufacturer's instructions for decontamination and must be followed and logged for each item and each time it is used.

The patient should be provided with information in advance of the appointment and should follow a specified agreed patient journey on arrival (checklist: Appendix 8).

Before the patient enters the building (AGP)

Clinician and nurse to don new PPE

Pre-donning instructions

- Ensure you are hydrated (you will not be able to eat or drink whilst in the room) and you have been to the toilet
- Change into scrubs or spare uniform (including trousers)
- Tie hair back and loop long hair to easily be able to keep it inside a surgical hat
- Remove all lanyards and jewellery – 1 wedding band is permitted but take care to dry thoroughly underneath the band after washing hands
- Check PPE in correct size is available – long sleeved water resistant theatre gown, FFP3/2 respirator that you have been fitted for, long visor/face shield, gloves, elasticated theatre hat, safety glasses/spectacles as required
- Enter surgery and put on dedicated surgery footwear (Crocs, wellies, plastic shoes that can be cleaned with an appropriate solution/ wipe e.g. Actichlor / Clinell. Foot covers can be used.

Donning PPE

- Staff must adhere to the Donning and Doffing PPE techniques for C-19 (Appendix 5)
- Wash hands (Appendix 9)
- It is essential to wear a fit tested mask (respirator hoods with equivalent respiratory protection can be used where these are available). Masks should be worn and checked in accordance with training.

AGP treatment protocols

Environment and ventilation in addition to non-AGP

- Seek advice where there are windowless surgeries with low (>6) or unknown ACPH as these should not be used for AGP while there is a risk of transmission.
- Where there are unknown air changes in a surgery, open the windows and leave room for 1 hour after an AGP. Where there are known air changes, (measurements can be taken to determine air changes per hour for each surgery) the exact time needed can be calculated.[41] If this has taken place, records of measurements and advice should be kept and be readily available.
- Local recirculating air cleaning devices (with HEPA filtration and UVC) to improve air quality can be considered. If practices wish to use these pieces of equipment, they will need to verify measurements (flow rates) and must ensure optimal maintenance (seek advice where needed). Calculations from the ventilation SBAR [37]should be applied and ACPH must be known. Any decision should be clearly documented and retained by the practice for possible future reference. The default position otherwise is to follow the guidance described above.
- Fogging techniques (with e.g. hypochlorous acid) are not currently recommended as this has not been confirmed as effective for C-19 and the health effects e.g. respiratory issues and long-term health implications for staff are unknown. This guidance will be updated as the evidence develops. If practices wish to consider these techniques, they should seek advice from the local IPC Teams.
- The advice of an expert should be sort when calculating exact ACPH and the potential effect of any additional ventilation or recirculating techniques.

Treatment procedure considerations in addition to non-AGP

- Time within the surgery should be optimised where this is possible to do so e.g. assessment via video consultation in advance.
- Ideally, treatment requiring AGP should have been decided prior to the patient entering the surgery and the equipment set up in advance.
- This includes, 3 in 1, handpieces, LA, rubber dam equipment, disposable container with hydrogen peroxide to swab the tooth and single use equipment.
- The practice is advised to have an agreed system in place for the equipment required for specific procedures.

[41] https://www.scottishdental.org/wp-content/uploads/2020/08/Ventillation-Final-Copy-1.pdf

Doffing PPE

Doffing (local procedure example)

- PPE doffing procedure should be carried out as per the Appendix 5 and current recommended guidance. It is helpful if the buddy observes and reads out the procedure to ensure that staff know exactly what to do.
- Wash/clean gloves with hand gel/ABHR
- The buddy will break waist and neck gown ties at the surgery door
- Lean forward over waste bag/bin and roll gown forwards from shoulders down arms to hands
- Wash/clean gloves with hand gel/ABHR
- Remove hat (if worn) by placing hand on top of head and pull off to the side – again close eyes while doing this and place in bin
- Wash/clean gloves with hand gel/ABHR
- Remove visor by pulling elastic backwards and lifting up and forward over the head – close eyes while doing this and place in bin
- Wash/clean gloves with hand gel/ABHR
- Move to the surgery exit
- Gather lower then upper elasticated mask straps up and over head from the back forwards with head forward and immediately discard mask into clinical bag by surgery door
- Move to outside surgery room and clean gloves with hand gel/ABHR
- Remove glasses/spectacles and clean with wipes as per manufacturer's instructions
- Remove gloves by rolling inside out and drop into clinical bin surgery door
- Remove and discard shoe covers (if used) or if surgery footwear, place in 1tab/litre Actichlor solution (1000ppm Cl-) by the door or use an appropriate disinfectant wipe.
- The buddy will also dispense hand gel/ABHR onto the hands of the surgery staff when appropriate
- Clean hands thoroughly with soap and water in accordance with recommended practice.

Decontamination

This must be carried out in accordance with the latest recommended procedures. The responsible person undertaking the cleaning with detergent and disinfectant should be familiar with these processes and procedures and must wear recommended PPE.

Decontamination of the surgery

The room must be left for 1 hour for rooms with unknown air changes and then deep cleaned (place a notice on door for re-entry time). This time may be adjusted with known measured air changes in accordance with ventilation recommendations.[42]

Collect all cleaning equipment and clinical waste bags before entering the room

Before entering the room, perform hand hygiene then put on a disposable plastic apron gloves and FRSM IIR mask

The window should be open for ventilation whilst the room is cleaned (unless there is an appropriate air conditioning extraction unit for which it is recommended that the window is not opened)

Double bag all items that have been used for the care of the patient as clinical waste, for example, contents of the waste bin and any consumables that cannot be cleaned with detergent and disinfectant

Close any sharps containers wiping the surfaces with either a combined detergent disinfectant solution at a dilution of 1000 parts per million (ppm) available chlorine (av.cl.) or a neutral purpose detergent followed by disinfection (1000 ppm av.cl.).[43]

Use disposable cloths or paper roll or disposable mop heads, to clean and disinfect all hard surfaces or floor or chairs or door handles or reusable non-invasive care equipment or sanitary fittings in the room, following one of the 2 options below:

- use either a combined detergent disinfectant solution at a dilution of 1000 parts per million (ppm) available chlorine (av.cl.) e.g. Actichlor (=1 x 1.7g tablet in 1 litre of water)
- or a neutral purpose detergent followed by disinfection (1000 ppm av.cl.)

Follow manufacturer's instructions for dilution, application and contact times for all detergents and disinfectants

Wipe surfaces and leave for 2 minutes before drying with blue roll (surfaces must stay wet for at least 60 seconds to be effective against SARS Cov-2)

Clean all reusable equipment systematically from the top or furthest away point.

Do not use a spray bottle. Use a wet cloth and wipe from clean areas towards the most contaminated zone.

Any cloths and mop heads used must be disposed of as single use items

[42] https://www.scottishdental.org/wp-content/uploads/2020/08/Ventillation-Final-Copy-1.pdf
[43] COVID-19: infection prevention and control guidance
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/881489/COVID-19_Infection_prevention_and_control_guidance_complete.pdf

On leaving the room

- Discard detergent or disinfectant solutions safely at disposal point
- Clean, dry and store re-usable parts of cleaning equipment, such as mop handles
- Remove all PPE before leaving the clinical room and place in the clinical waste bin (follow PPE doffing poster)
- Wash hands

Radiography areas should also be disinfected after use

When dry, the room can be used again (surgery cleaning could take 10-20 minutes)

WASH HANDS

Communal areas e.g. for example, a waiting area or toilet facilities may also need disinfection. These areas should be cleaned with detergent and disinfectant (as above) as soon as practicably possible, unless there has been a blood or body fluid spill which should be dealt with immediately. Once cleaning and disinfection have been completed, the area can be put back in use.

If there are carpeted floors or item cannot withstand chlorine-releasing agents, consult the manufacturer's instructions for a suitable alternative to use, following or combined with detergent cleaning.

Post decontamination processes

On leaving the room

- Clean, dry and store re-usable parts of cleaning equipment, such as mop handles – buddy can help
- Remove and discard PPE as clinical waste (see below)
- Perform hand hygiene
- Place new gloves, plastic apron and FRSM on and pour cleaning liquid down sluice dirty sink. Please allow for another staff member to open the door

Actions in the event of a patient being identified with C-19 in the surgery

In the event of a patient attending at the practice who is then identified as having signs, symptoms or a contact history which indicates suspected C-19, the patient should be assessed to determine if care could be carried out safely. If care cannot be carried out safely, patients should be signposted to care or sent home in accordance with procedures for C-19 patients. Environmental cleaning should be carried out as required.[44]

[44] https://phw.nhs.wales/topics/latest-information-on-novel-coronavirus-covid-19/information-for-healthcare-workers-in-wales/

Medical emergencies

Primary care dental practices (GDS and CDS) should follow health board guidance for CPR where this is available. In the absence of local guidance, dental teams should follow Public Health England guidance[45]

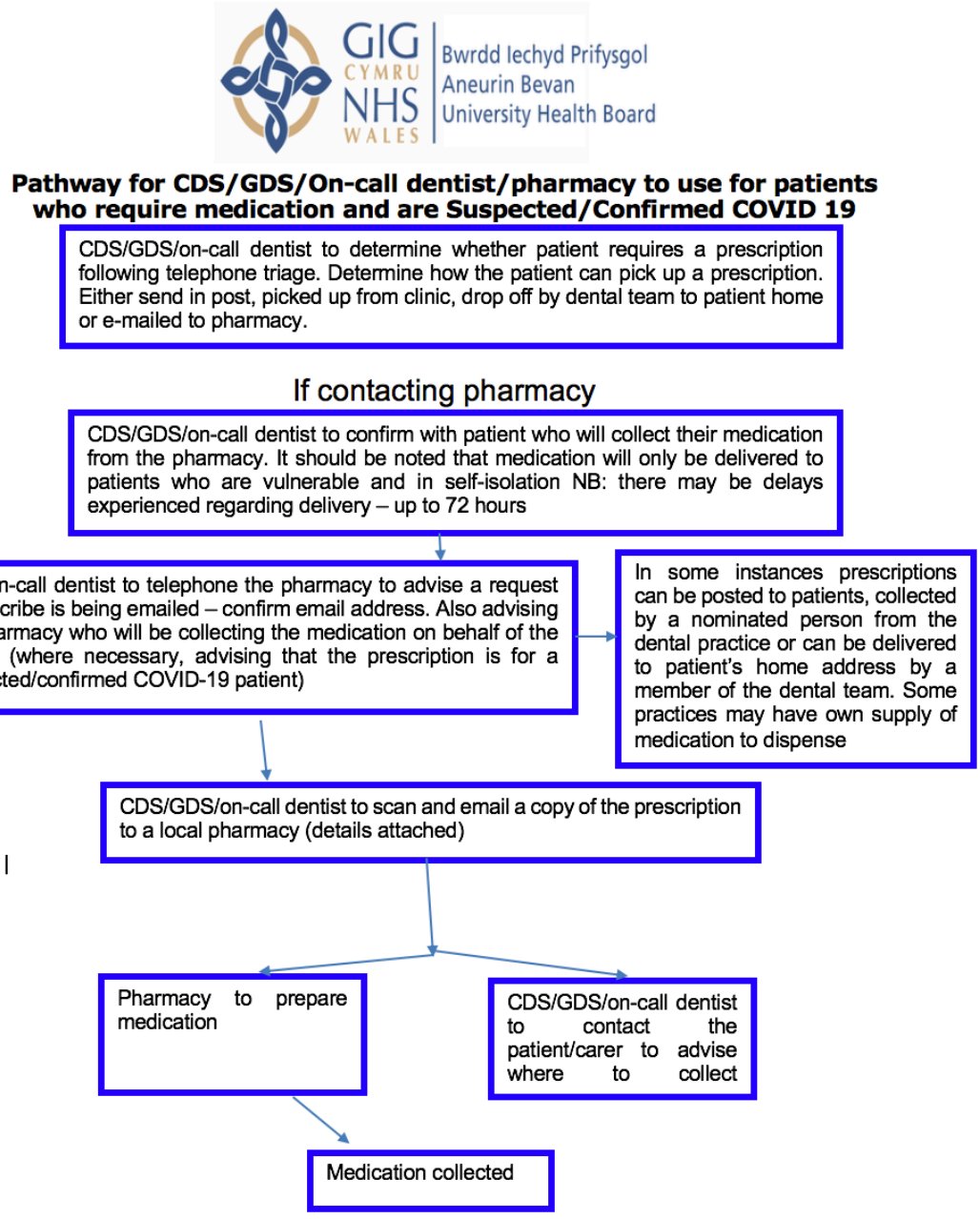
"Where possible, it is recommended that you do not perform rescue breaths or mouth-to-mouth ventilation; perform chest compressions only".

Practices should provide defibrillation and should continue CPR until the ambulance (or advanced care team) arrives. Staff are advised to wear available PPE and staff should avoid delays in delivering this life saving intervention.

(Appendix 11)

[45]Guidance COVID-19: guidance for first responders updated 18 May 2020: https://www.gov.uk/government/publications/novel-coronavirus-2019-ncov-interim-guidance-for-first-responders/interim-guidance-for-first-responders-and-others-in-close-contact-with-symptomatic-people-with-potential-2019-ncov

Appendix 1: Prescribing Remotely



Guidance on best practices for prescribing are available from:

http://www.sdcep.org.uk/published-guidance/drug-prescribing/

Appendix 2: Assessment for C-19 and Medical History

Example:

Name of person:_____ D.O.B.: _____

Height:_____ Weight:_____ Gender: _____

Please complete the following questions about COVID -19	Yes	No	Details
Do you or any member of your household/ family have a confirmed diagnosis of COVID-19?	☐	☐	
Do you have any of the following symptoms? • high temperature or fever • new, continuous cough • a loss or alteration to taste or smell	☐	☐	
Have you had a positive test (laboratory) for COVID-19 (if yes please give date)	☐	☐	
Are you or any member of your household/family waiting for a COVID-19 test result?	☐	☐	
Have you had a positive test for COVID-19 antibodies?	☐	☐	
Have you had a test with a negative test result in the past 72 hours? (if yes give details)	☐	☐	
Have you travelled internationally in the last 14 days? If yes, confirm if this is a country that has been agreed as safe for travel by the government. (for some countries14 days quarantine will apply)	☐	☐	
Have you had contact with someone with a confirmed diagnosis of COVID-19, or been in isolation with a suspected case in the last 14 days	☐	☐	

ABUHB Medical History Questions

Has this person ever had or suffered from any of the following:	Yes	No	Details
Heart murmurs, heart valve damage, heart defects?	❑	❑	
Cardiovascular disease (e.g. angina, atrial fibrillation)?	❑	❑	
Breathing difficulty, chest problems, asthma, pneumonia, bronchitis?	❑	❑	
Sleep apnoea, loud snoring, sleep disturbance?	❑	❑	
Bleeding disorders, take medication to "thin" the blood (e.g. Warfarin)?	❑	❑	
Blood Pressure or circulation problems?	❑	❑	
Stroke?	❑	❑	
Anaemia (Iron, B12 or Folate deficient)?	❑	❑	
Allergies (e.g. penicillin, latex, food products, etc)?	❑	❑	
Metabolic problems (e.g. thyroid problems, steroid treatment)?	❑	❑	
Jaundice, liver disease?	❑	❑	
Kidney problems?	❑	❑	
Diabetes (Type 1 or 2)?	❑	❑	
Fits, fainting, seizures, epilepsy?	❑	❑	
Mental health problems (e.g. depression, anxiety bipolar, schizophrenia, panic attacks)?	❑	❑	
Do you have memory problems or dementia?	❑	❑	
Feeding, swallowing problems (PEG, food supplements)?	❑	❑	
Arthritis, osteoporosis or other bone disorder?	❑	❑	
Artificial joints, shunts, heart valves, pacemakers or transplants?	❑	❑	
Any infectious diseases (e.g. TB, hepatitis, HIV, MRSA)?	❑	❑	

Has this person ever had or suffered from any of the following:	Yes	No	Details
Does the person drink more than 14 units of alcohol per week?	❑	❑	
Does the person smoke or use tobacco products?	❑	❑	
Does the person smoke, snort, inject or ingest any drugs?	❑	❑	
Does the person take any over the counter medication?	❑	❑	
Does the person have any physical disability?	❑	❑	
Does the person have a learning disability?	❑	❑	
Does the person have any sight problems?	❑	❑	
Does the person have any hearing problems?	❑	❑	
Does the person need an interpreter?	❑	❑	**Language**
Any further information :			

Has this person ever had to stay in hospital or have any operations? (including being put to sleep for dental extractions)	**Yes** ❑	**No** ❑	(Please give details below)
REASON FOR HOSPITAL ADMISSION			**APPROXIMATE DATE**

Is this person taking any regular medication? (including inhalers, tablets, medicine, creams, injections, unprescribed or herbal drugs)	**Yes** ❑	**No** ❑	(Please give details below)

Name of Drug	Dose/day		Name of Drug	Dose/day

Please give contact details for person's doctor, and also consultant and support worker if relevant:

Doctors/GP Name Address Tel No	Consultant's Name Dept Hospital	Support worker's name Address Tel No
Healthcare worker's name Dept Hospital	Consultant's Name Dept Hospital	Consultant's Name Dept Hospital

To the best of my knowledge, the above information is accurate at the time of signing.

Name of person completing form _____

Address _____

Post Code _____ **Tel No** _____

Relationship to person (if applicable)_____

Signature:	Date:	Signature:	Date:
Signature:	Date:	Signature:	Date:
Signature:	Date:	Signature:	Date:

Appendix 3: Triage Checklist example

Bwrdd Iechyd Prifysgol Cwm Taf Morgannwg University Health Board

Triage Urgent/Emergency Dental Centre Checklist

Patient Name	
Risk Assessment carried Out by	
Senior Dentist Name	
AGP ☐	Non AGP ☐
OPT ☐	OPT not required ☐
Appointment date and time	Surgery
8 7 6 5 4 3 2 1 | 1 2 3 4 5 6 7 8	
Proposed Treatment plan	Items of Equipment/materials needed

Triage Urgent/Emergency Dental Centre Checklist/V1 / April 7th 2020

Appendix 4: Staff risk assessment, training, wellbeing and instructions checklists

Practices should risk assess staff and implement training as required.

Risk Assessments	Confirmed Complete by	Date	Date of Review
Risk assess "at risk" groups e.g. older people, pregnant[46] , those who are shielding and those who have relevant health conditions[47] which put them at particular risk from C-19. [48]			
Redeploy at-risk staff to duties without patient contact such as supporting the 'remote contact' preparing patients prior to appointments.			
Staff Training	**Confirmed Complete by**	**Date**	**Date of Review**
Information about C-19, recognition, screening, and risk			
Patient management and journey in the practice			
Management of a person with symptoms entering the practice			
Infection control			
Donning and doffing personal protective equipment			
Minimally invasive dentistry/ non AGP care			
Clinical assessment			
AGP care			
CPR/ management of emergencies			

Training needs should be reviewed as necessary.

Staff experience should be considered and more complex procedures should be carried out by staff with experience in order to minimise procedural time and possible complications.

Staff illness and wellbeing

[46] Advice on pregnant healthcare workers 21.03.2020 https://www.rcog.org.uk/globalassets/documents/guidelines/2020-03-28-covid19-pregnancy-guidance.pdf

[47] any person aged 70 or older, aged under 70 with an underlying health condition (i.e. adults who should have seasonal flu vaccination because of medical conditions)

[48] https://www.gov.uk/government/publications/guidance-on-shielding-and-protecting-extremely-vulnerable-persons-from-covid-19/guidance-on-shielding-and-protecting-extremely-vulnerable-persons-from-covid-19

Staff illness and wellbeing checklist	Confirmed Complete by	Date	Date of Review
Practice policy for staff illness			
Staff informed of latest advice[49] and guidance on self-isolation if they or a member of their household develop signs of infection. [50]			
Practices should consider processes to check for signs of possible infection for anyone entering the practice i.e. staff and patients			
Confirm arrangements for staff with symptoms to be tested. [51]			
Where agreed with Health Boards, have clear arrangements regular testing for staff involved in higher risk			
Implement measures to check and support staff well-being.[52]			
Rotas should be arranged to cohort staff (groups) to minimise the risk of transmission between staff members. This should include timings of breaks.			

Uniform instructions for staff	Confirmed Complete by	Date	Date of Review
Establish uniform policy			
Instruct staff to change into uniform on arrival to work this includes trousers			
Staff should wear a separate pair of (work) shoes in the surgery these should not be worn outside			
Staff instructed to change place uniform in a plastic disposable bag/ washable at the end of the day and taken home for laundry (or follow practice procedure if central laundry)			
Wash separately from household linen – do not shake the items before placing in the washing machine in a load not more than half the machine's capacity ≥60°C. At the maximum temperature the fabric can tolerate without fabric softener, dried then ironed.			

[49] COVID-19: management of exposed staff and patients in health and social care settings: https://www.gov.uk/government/publications/covid-19-management-of-exposed-healthcare-workers-and-patients-in-hospital-settings

[50] https://www.gov.uk/government/publications/covid-19-stay-at-home-guidance/stay-at-home-guidance-for-households-with-possible-coronavirus-covid-19-infection

[51] Key (critical) workers testing policy: coronavirus (COVID-19) Policy sets out a needs based approach testing criteria for NHS and non-NHS workers (key workers). https://gov.wales/critical-workers-testing-policy-coronavirus-covid-19-html

[52] https://leadershipportal.heiw.wales/playlists/view/c0abd55e-92ee-44d2-bcd1-33dd0221d1e3/en/1?options=oHXU%252BPmvHPR07%252FdPJVyiI5sWo5wWqGQ3R4ZWrZU%252B9vn1fRQkuIHkJS3aCF%252F5pPA4NRIUrRdtEhtlc1jVmauiYg%253D%253D

Appendix 5: Areas and zoning and personal protective equipment

Personal protective equipment must be worn in accordance with the latest guidance[53].

Dental practice

Area/Zone	Recommended PPE
Waiting Areas and Staff Areas	○ Good Hand Hygiene ○ Fluid Resistant Surgical Mask (IIR)
Dental Surgeries non-COVID (or confirmed non-C-19) (Non-AGP area)	○ Good Hand Hygiene ○ Disposable Gloves ○ Disposable Plastic Apron ○ Fluid Resistant Surgical Mask (IIR) ○ Eye Protection (Disposable goggles or face shield. Where reusable this should be cleaned following manufacturer recommended process)
Dental Surgeries (AGP where C-19 status is not clinically confirmed with tests)	○ Good Hand Hygiene ○ Disposable Gloves ○ Disposable Fluid Resistant gown (or non-fluid resistant gown and a Disposable plastic apron) ○ Filtering Face Piece respirator (FFP3/2) ○ Eye Protection (full face shield if FFP is not water resistant)

Environment Reduction of risk

Actions that may be taken to support decontamination and reduce risk include:

- Promotion of hand hygiene
- Clearing clutter
- Preparing clinical areas in advance (no opening of drawers)
- Not putting tips on the 3 in 1 to prevent accidental habitual use
- Social distancing and wearing of masks during breaks and in staff areas

Decontamination

- Training and use of correct procedures for donning and doffing of PPE to prevent contamination[54] (videos for donning and doffing)
- Use of a spotter/ buddy for doffing.

Counterfeit PPE products and checks that PPE is fit for purpose before use

Teams should be alert for counterfeit/ substandard PPE. [55,56] Further information about appropriate PPE is available in the guidance[44] and from the HSE.[57]

[53] COVID-19 personal protective equipment (PPE) Updated 20 May 2020: https://www.gov.uk/government/publications/wuhan-novel-coronavirus-infection-prevention-and-control/covid-19-personal-protective-equipment-ppe

[54] https://www.gov.uk/government/publications/covid-19-personal-protective-equipment-use-for-aerosol-generating-procedures

[55]Counterfeit Respirators / Misrepresentation of NIOSH-Approval https://www.cdc.gov/niosh/npptl/usernotices/counterfeitResp.html

[56] Clamping down on risk of unsafe PPE https://www.gov.uk/government/news/clamping-down-on-risk-of-unsafe-ppe

[57] Using PPE at work during the coronavirus outbreak: https://www.hse.gov.uk/news/using-ppe-at-work-coronavirus.htm?utm_source=hse.gov.uk&utm_medium=refferal&utm_campaign=coronavirus&utm_term=ppe&utm_content=home-page-popular

Appendix 6: Preparing waiting and communal areas

Checklist to minimise the risk of transmission[58]	Confirmed Complete by	Date	Date of Review
Providing handwashing facilities or hand gel on entry to the practice (and notices)			
Decluttering, removal of textiles that cannot be cleaned and all unnecessary items (including posters that cannot be wiped clean, toys and magazines) from waiting areas and surgeries			
Spacing chairs in waiting areas to accommodate social distancing (as per guidance e.g. 2m)			
Placing bathroom notices to close the lid before flushing to reduce risk			
Consider making bathroom facilities for emergency use only (ask staff to use) while there is a risk of transmission [59]			
Ensuring that there is a schedule of regular cleaning for the environment with specific attention to areas and objects frequently used or touched by the public i.e. door handles, chair arms, tablet devices used for medical histories and toilet facilities.			

[58] Rapid Review of the literature: Assessing the infection prevention and control measures for the prevention and management ofCOVID-19 in health and care settings: https://www.hps.scot.nhs.uk/web-resources-container/rapid-review-of-the-literature-assessing-the-infection-prevention-and-control-measures-for-the-prevention-and-management-of-covid-19-in-healthcare-settings/

[59] Liu, Y., Ning, Z., Chen, Y., Guo, M., Liu, Y., Gali, N. K.,. & Liu, X. (2020). Aerodynamic analysis of SARS-CoV-2 in two Wuhan hospitals. Nature, 1-6.

Appendix 7: Preparing surgeries

The surgery should be decluttered, cleaned and decontaminated and waterlines should be flushed. WHTM 01 05[60] provides guidance for decontamination of treatment areas including:

	Confirmed Complete by	Date	Date of Review
Staff schedule with clear responsibilities and timings for general hygiene principles (Chapter 6)			
Staff schedule with clear responsibilities for cleaning between each patient (6.62)			
Staff schedule with clear responsibilities for cleaning at the end of each session (6.61)			
Staff schedule with clear responsibilities for Items of furniture to be cleaned each day (6.64)			
Staff schedule with clear responsibilities for managing dental water lines (See 6.84-6.86 and 19.8-19.17)			
Review date-limited items (e.g. emergency drugs) to make sure the practice is compliant and has all of the necessary items.			
Check supplies and place orders where necessary (as supply chains may be affected).			

[60]Welsh Health Technical Memorandum HTM 01 05: http://www.nwssp.wales.nhs.uk/sitesplus/documents/1178/WHTM%2001-05%20Revision%201.pdf

Appendix 8: Visit information checklist

Information on practice websites, online booking, appointment reminders/texts, voice mail/ telephone appointment protocols should be up to date. Messages should be in line with the extant public advice. Advice and visit information packs should state that patients should not turn up without an appointment.

Before the appointment the patient should be advised:	Completed by
To use the bathroom facilities at home before leaving	
To arrive alone or if needed with one escort	
To attend without bags or extra items	
To contact the practice by telephone when they arrive	
To wait in the car until practice contacts to say they are ready for the patient to come in (Should a patient not arrive in a car they should be asked wait outside before being called into the surgery).	
Of payment arrangements (contactless/ over the phone in advance)	
Of social distancing if using the waiting area	
To be aware of cough etiquette (Catch it. Bin it. Kill It)	
That someone will meet them at the door (provide details of person's name/ colour of uniform etc)	
They should wear the mask provided whilst walking through the corridor to the surgery	
Use hand gel as instructed on arrival	
Not to touch anything and follow the nurse when being escorted to the surgery	
To be aware that the dentist and nurse will already have the required protective uniform on (reassure the patient not be alarmed by their appearance as this is for the safety of our staff)	

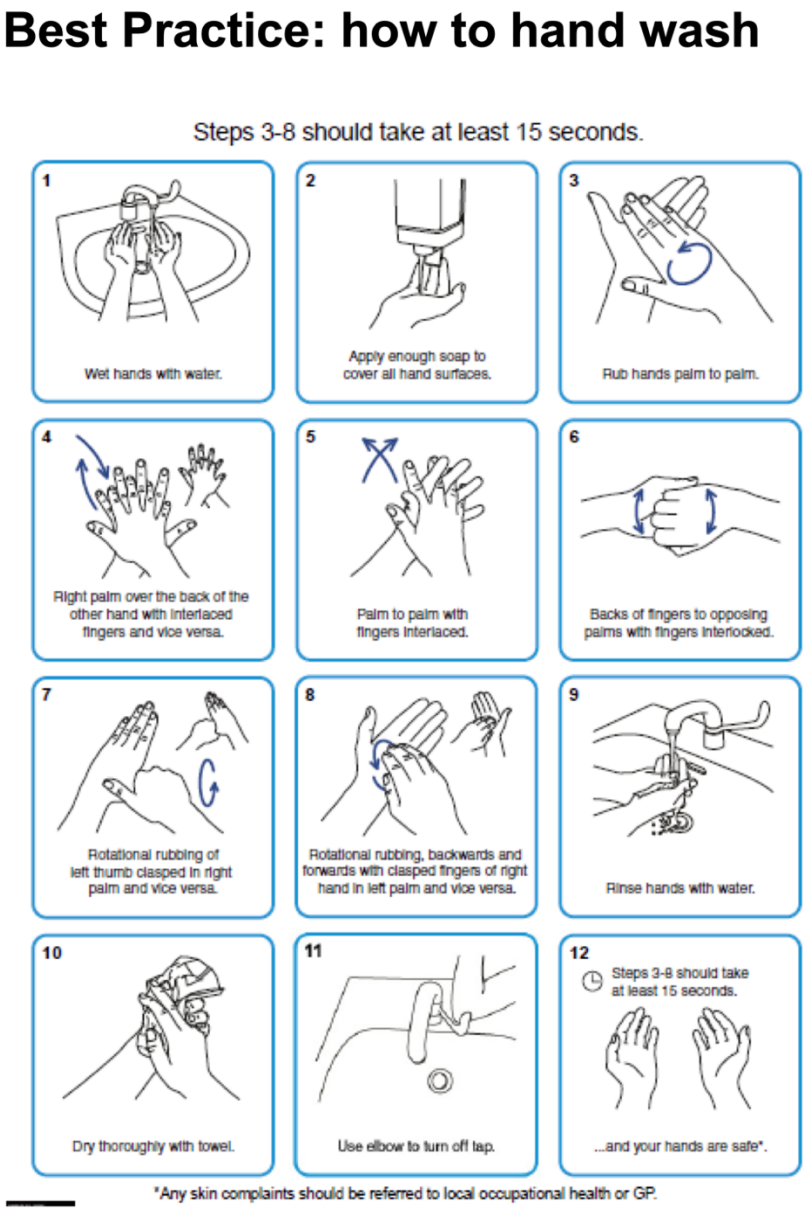
Information resources are available from Public Health Wales:

- https://phw.nhs.wales/topics/latest-information-on-novel-coronavirus-covid-19/coronavirus-resources/;
- NHS Wales Public Information Posters;
- NHS Wales Social Media Assets;
- NHS Wales - patient facing Information .

Checklist for patient discharge	Completed by
Remind patient to avoid touching anything, reapply mask.	
Escorted/ instructed to follow arrows on the wall as they did on the way in	
Return home immediately	
If the patient has attended alone please check if they need help with anything else particularly they are still following isolation rules.	
Confirm arrangements to collect medications etc	
Confirm arrangements for payments	
Confirm arrangements for further appointments	
Explain what to do if problems	
Record patient attendance and schedule follow up call for the following day	

Appendix 10: Hand Hygiene

Hand washing[61]



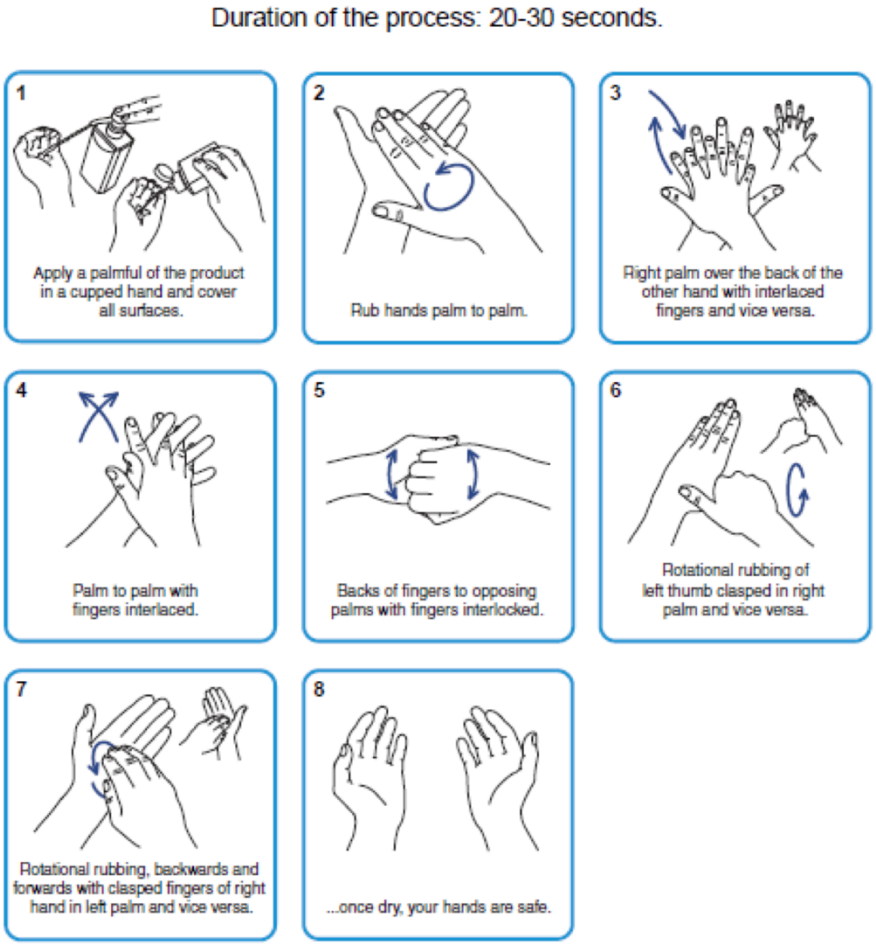
From: COVID-19. Guidance for infection prevention and control in healthcare settings

Video demonstration from WHO https://www.youtube.com/watch?v=3PmVJQUCm4E

[61]https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/877530/Best_Practice_hand_wash.pdf

Alcohol rub[62]

Best Practice: how to hand rub



From: COVID-19. Guidance for infection prevention and control in healthcare settings

Video demonstration from WHO https://www.youtube.com/watch?v=ZnSjFr6J9HI

[62]https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/877529/Best_Practice_hand_rub.pdf

Appendix 10: C-19 clinical dental risk assessment considerations

Some procedures which are not deemed aerosol generating may be more difficult than others and may lead to the need for an aerosol generating procedure. Patient related factors and procedural factors may also increase the risk of aerosol generation. It is therefore important to risk assess each procedure to minimise aerosol and transmission risk.

As an example, for a dental extraction factors that **may** be considered in this assessment include:

Dental Extraction	Examples of simple and unlikely to become an AGP examples.	More likely to require AGP
Periodontal Status of the tooth	Mobile tooth >50% bone loss	Non-mobile
Caries/ tooth loss	Complete coronal structure	< 10% crown Extensive caries of coronal area
Tooth	Deciduous tooth Single rooted tooth (incisor or premolar)	Canine or molar tooth
Patient related factors	Young person	Older adult Dense bone structure Strong gag reflex Prone to/ likely to cough Significant behavioural issues which may increase risk. History of difficult extractions
Operator Skill and Experience	Highly skilled and experienced	Inexperienced dentist

Please note that this list is intended to support decisions and is not designed to be comprehensive or instructive. Clinical judgement should be used in each case.

If a tooth extraction is attempted, and fails, it may be appropriate to stabilise the area and leave remnants in situ (for retrieval as an AGP at a later date).

When assessing risk, for caries and other dental problems, consideration should be given to procedural and transmission risk:

- location of the tooth
- oral health and dentition
- extent of the lesion and possible complications
- difficulty of procedure

- the time taken to carry out a procedure (this should be as short as possible)
- medical justification e.g. bisphosphonate
- whether the tooth is predictably restorable with a good prognosis
- risk of transmission

Options to avoid AGP for the management of caries may include:

- Simple excavation, dressing/ temporisation to stabilise the tooth (potentially leaving caries in situ)
- Atraumatic Restorative Technique (ART)
- Extraction

The range of recommended treatments offered with AGP will be reviewed in relation to risk of transmission and current evidence. Where there is a risk of transmission, AGP treatments offered will need to be limited with priority given to people with urgent/ emergency problems.

Useful information:

- BSP Back to work- risks associated with steps of treatment[63]
- BES COVID-19 return to work SOP[64]
- British Orthodontic society orthodontic provider advice[65] and RCS guidance[66]
- Paediatric Dentistry RCS guidance[57]
- Special Care Dentistry RCS guidance[57]
- Restorative RCS guidance[57]
- Oral Medicine RCS guidance[57]
- Oral Surgery RCS guidance[57]
- Diagnostic imaging RCS guidance[57]

Patient pathways are outlined in Appendix 12.

[63] https://www.bsperio.org.uk/userfiles/BSP-Back-to-work-version-2-Risks-associated-with-steps-of-treatment-07.06-2020.pdf
[64] https://britishendodonticsociety.org.uk/wp-content/uploads/2020/06/BES_SOP-080620-v1.pdf
[65] https://www.bos.org.uk/COVID19-BOS-Advice/Orthodontic-Provider-Advice
[66] https://www.rcseng.ac.uk/dental-faculties/fds/coronavirus/

Risk reduction and aerosol generation in dentistry

Aerosols are generated in a number of routine dental procedures and though patient behaviours (coughing and sneezing). Measures should be taken to minimise the risks of transmission of C-19 associated with aerosols from all dental procedures.

Principles

- Primary care teams can now (in amber phase) re-introduce routine and essential dental procedures including aerosol generating procedures but should do so safely using this guide and advice.
- Employ measures to remove aerosols which are generated, in particular four-handed dentistry, high-volume suction and use of rubber dam.
- Decontamination of the environment which must be carried out following recommended decontamination procedures and timings (allowing time for air clearance)[1]. It is essential for all members of the team to use recommended personal protective equipment PPE and ensure face protection during dental treatment care.[67]
- Employ measures/ techniques to reduce amount, duration and contamination of aerosol while carrying out all care.

AGP care and U/EDDCs

- Where aerosol generating procedures (AGPs) cannot be avoided and a patient is suspected as covid-19 positive (during amber phases of de-escalation) patients should be referred to U/EDDCs

Aerosol Generating Procedures

AGPs are procedures that create aerosols (air suspension of fine (≤ 5µm) particles). These are required and essential in the delivery of routine dentistry. These procedures require safe practice and adherence to this guide and are reported to include: [68,69]

- Handpieces (turbine);
- Air abrasion;
- Ultrasonic scaler;
- Air polishing;
- Slow speed handpiece polishing and brushing;
- 3 in 1 syringe (air/ water, air settings)

Some dental treatments and procedures may involve very brief, very limited (a few seconds), gentle use of a 3 in 1. This is likely to produce a small amount of amount of aerosol but where this is for a patient who is not suspected or confirmed COVID-19 in a geographic area of low transmission and high-volume suction is used, this would constitute a lower risk procedure and no additional fallow time is needed.

67COVID-19 Safe ways of working A visual guide to safe PPE: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/877528/COVID-19_easy_visual_guide_to_PPE_poster.pdf

68 Bentley CD, Burkhart NW, Crawford JJ. Evaluating spatter and aerosol contamination during dental procedures. J Am Dent Assoc 1994; 125: 579–584.

69 Zemouri C, De Soet H, Crielaard W, Laheij A. A scoping review on bio-Aerosols in healthcare & the dental environment. PLoS One 2017; 12: e0178007.

Procedures that are reported as not considered to be aerosol generating procedures AGP are:[70]

- Examinations;
- Hand scaling with high volume suction;
- Simple extractions;
- Removal of caries using hand excavation;
- Using slow-speed (non-turbine) handpiece;
- Local anaesthesia.

Some non-aerosol generating procedures may increase the risk of aerosol (e.g. stimulate gag reflexes, saliva, sneezing and coughing). In these circumstances, procedures should be undertaken with care. Alternatives e.g. using extraoral instead of intraoral radiographs may be considered for patients who may be likely to gag or cough etc where this is deemed clinically appropriate.

Measures to reduce aerosols[71,72,73]

Technique/ measure	Recommendation
High volume suction	Essential
Personal protection PPE: Face masks, visors/goggles, gloves and protective outwear in accordance with guidance	Essential
Use of recommended techniques for donning and doffing PPE including the use of a spotter for doffing	Essential
Time and procedures for decontamination and air change between patients as per guidance[1]	Essential
Using 4 handed techniques for dentistry	Strongly recommended
Reduce any unnecessary use of and time spent on procedures that may generate aerosol	Strongly recommended
Dry field operating (rubber dam,* cotton wool rolls)	Essential
Alternate procedures to reduce aerosol use via handpieces (e.g. ART/ Hall technique or chemotherapeutic caries removal)	Recommended as an option where clinically appropriate.
Resorbable sutures	Recommended as an option where clinically appropriate to reduce clinical contact

70 Aerosol generating procedures and COVID: https://www.yumpu.com/en/document/read/63158133/aerosol-generating-procedures-v2
[71] Harrel SK, Molinari J. Aerosols and splatter in dentistry: A brief review of the literature and infection control implications. J Am Dent Assoc 2004; 135: 429–437.
[72] Leggat PA, Kedjarune U. Bacterial aerosols in the dental clinic: A review. Int Dent J 2001; 51: 39–44.
[73] Ge Z yu, Yang L ming, Xia J jia, Fu X hui, Zhang Y zhen. Possible aerosol transmission of COVID-19 and special precautions in dentistry. J. Zhejiang Univ. Sci. B. 2020; : 1–8.

Extraoral radiographs (where appropriate)	Recommended as an alternative to intraoral radiographs
Pre-procedural mouthrinse	The use of hydrogen peroxide mouth rinse and Povidone Iodine as a mouthwash has been suggested as a potential method to reduce amount of virus in aerosols. This may be of benefit where there is a high risk of transmission but there is currently limited direct evidence of the efficacy of this to reduce C-19 transmission. Clinicians should risk assess based on current available evidence. Those electing to use mouth rinses must ensure that a relevant medical history (including allergies) has been taken.

*Rubber Dam in combination with high volume saliva ejectors can significantly reduce the microbiological load in an aerosol. Pre-treatment disinfection swabbing of isolated teeth isolated with rubber dam may also reduce the viral aerosol load.

Appendix 11: Medical emergency procedure for when an AGP has commenced

Should a medical emergency occur once an AGP procedure has started, the following procedure must be followed.

1. Activate emergency alarm

2. Clinical team to communicate to runner nature of emergency and request exact Resus kit and emergency management poly-pocket.

3. DO NOT OPEN DOOR.

4. Runner to instruct another staff member to call for Ambulance - call XXX. Ambulance service to be informed that Emergency attendance is required and AGP procedure has started and/or suspected COVID patient.

5. Runner (in standard PPE) to knock twice to alert presence, quickly open door, place Emergency kit inside and close door. Immediately remove PPE.

6. Clinical team to provide emergency medical care in line with current Resus Council advice.

7. Early use of AED is recommended

Example procedure below:

Management of suspected cardiac arrest when an AGP has commenced (wearing FFP)	
Suspected cardiac arrest **Look for the absence of signs of life and normal breathing** **DO NOT listen or feel for breathing by placing your ear and cheek close to the patient's mouth**	
Call for help and press panic button, notify senior member of staff **Clinical team in surgery to immediately start chest compressions**	
Call 999, **advise ambulance cardiac arrest**	Runner to get Resus bag and AED from identified location, quickly open door and place inside surgery, shut door
Clinical team to attach AED and follow instructions **Clinical team to continue CPR** **Airway interventions must be carried out using bag valve mask (n.b. only if wearing FFP3/2)** **DO NOT CARRY OUT MOUTH TO MOUTH**	
Only clinical team wearing enhanced PPE should be present in the surgery	
Continue CPR until paramedics arrive **Any additional helpers must be wearing enhanced PPE to enter surgery**	
Once patient has been transferred out of the surgery, dispose of or clean all equipment used during CPR	
Doffing of PPE and decontamination of the surgery shall be carried out in accordance with AGP SOP	

Appendix 12: Care pathway