

Dental management
of patients in Wales during
C-19 pandemic recovery

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

Dr Warren Tolley	Deputy Chief Dental Officer and Associate Dental Director, Powys Teaching Health Board
Dr Ilona Johnson	Reader and Hon Consultant in Dental Public Health, Cardiff University
Dr Vicki Jones	Clinical Director for Community Dental Services, Consultant in Special Care Dentistry, Aneurin Bevan University Health Board
Dr Mick Allen	Consultant in Special Care Dentistry. Clinical Director for Community Dental Services, Cardiff and Vale UHB
Mr Karl Bishop	Dental Director and Consultant in Restorative Dentistry, Swansea Bay University Health Board
Professor Ivor Chestnutt	Professor and Honorary Consultant in Dental Public Health. Clinical Director, University Dental Hospital, Cardiff and Vale UHB
Dr Catherine Nelson	Associate Medical Director for Dental, Hywel Dda Health Board
Dr Robert Davies	Associate Dental Director, Cwm Taf Morgannwg University Health Board.
Dr Sandra Sandham	Clinical Director for North Wales Community Dental Service and Director of Dental Public Health, Betsi Cadwaladr University Health Board
Dr Nigel Monaghan	Consultant in Dental Public Health, Public Health Wales and Visiting Professor in Public Health, University of South Wales

Advice to the Group is provided when required by Dr Melanie Wilson, Lead and Senior Lecturer in Oral Microbiology, Health & Safety, Cardiff University School of Dentistry. The Group is independent of Welsh Government but provides reports and recommendations directly to the Chief Dental Officer for Wales.

Table of Contents

Executive Summary	4
Background	4
De-escalation in Wales	5
Relevant Guidance	6
Updates and information	6
C-19 Risk Assessment.....	7
Planning for care	8
Prioritising Care	8
Scheduling Appointments	8
Advice on self-care	8
Remote prescribing.....	9
Preparing the practice environment	9
Care for patients requiring Non-AGP procedures	10
Care for patients requiring AGP procedures	10
PPE Pre-donning advice.....	11
Donning PPE	11
Environment and ventilation for AGP care	12
Decontamination	13
Record keeping	13
C-19 Patient care	14
Actions in the event of a patient being identified with C-19 in the surgery.....	14
Appendix 1: Risk Assessment for C-19 and Medical History	15
Appendix 2: Staff risk assessment, training, wellbeing and instructions checklists.....	18
Appendix 3: C-19 Risk assessment for dental practice	20
Appendix 4: Areas, zoning, personal protective equipment, and social distancing.....	21
Appendix 5: Preparing waiting and communal areas	23
Appendix 6: Preparing surgeries	24
Appendix 7: Visit information for patients	25
Appendix 8: Care pathway	26
Appendix 9: C-19 Dental aerosol risk assessment considerations.....	27
Appendix 10: Hand Hygiene	32
Appendix 11: Medical emergency procedure for when an AGP has commenced for a high COVID risk patient	34

Executive Summary

This document is intended for dental settings that provide dental care in Wales. Primary care providers in other UK nations should refer to guidance produced by their own administrative bodies and regulators.

Background

Novel Coronavirus, SARS-CoV-2 (C-19) is a highly infectious respiratory borne virus. For most patients, the symptoms are mild, and many may be asymptomatic. 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. However, C-19 does cause serious illness and cases can deteriorate rapidly, often during the second week of disease, and this can lead to death.¹ Reports show that as of September 2021, 91% of over 16's in Wales had received a first vaccination for C-19 and 84% had received a second dose², reducing the risk of and from infection in the population, when compared to the early stages of the pandemic, where there was no immunity.

C-19 symptoms can vary in severity from no symptoms, to having fever $\geq 37.8^{\circ}\text{C}$, 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

Reports indicate that C-19 transmission is primarily between people through respiratory droplets and contact routes.³ 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. Dental procedures involve close contact and procedures that can generate aerosols (AGPs). At present, the World Health Organisation (WHO) recommends airborne precautions for AGPs in conjunction with undertaking risk assessments. The WHO also recommends frequent hand hygiene, respiratory etiquette, and environmental cleaning and disinfection.⁴

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 <https://research.senedd.wales/research-articles/covid-19-vaccination-data/>

³ 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>

⁴ 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>

De-escalation in Wales

De-escalation of the C-19 response.⁵

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 **routine** practice-based dental care **and assessment** to meet the population's oral health needs **when capacity available**.

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

Delivery of 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

The aim of de-escalation is to rebuild the delivery of dental services in a way that prioritises care for those most in need and at risk of serious complications or significant oral health deterioration. Services should increase as C-19 risk reduces. Routine oral health assessments should resume, focussing on those who are vulnerable or at risk first.

⁵ 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-19 infection prevention and control \(IPC\)](#)^{6,7}
- [COVID-19 personal protective equipment \(PPE\)](#)⁸
- [COVID-19 infection prevention and control dental appendix](#)⁹

The situation is constantly evolving, and documents will be 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](#).

⁶ <https://www.gov.uk/government/publications/wuhan-novel-coronavirus-infection-prevention-and-control>

⁷ <https://phw.nhs.wales/services-and-teams/harp/infection-prevention-and-control/nipcm/>

⁸ <https://www.gov.uk/government/collections/coronavirus-covid-19-personal-protective-equipment-ppe>

⁹ <https://www.gov.uk/government/publications/wuhan-novel-coronavirus-infection-prevention-and-control/covid-19-infection-prevention-and-control-dental-appendix>

C-19 Risk Assessment

A medical history including an assessment of risk for C-19 infection should be taken in advance of care (Appendix 1). Testing for C-19 to confirm status can be considered as part of the C-19 risk assessment. Patients should be managed in accordance with risk following infection control guidance.²⁸ Appropriate risk assessments and mitigation should be put in place to minimise transmission and health risks in the dental setting (Appendix 2 and 3).

Signs and symptoms of C-19

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 $\geq 37.8^{\circ}\text{C}$, a recent loss of smell or taste;
- Contact with a confirmed case (tested positive).
- Where an individual has been told to self-isolate as part of TTP or travel
 - (It is important to note and consider other possible symptoms including sore throat, shortness of breath, difficulty breathing, nasal discharge, sneezing, headache and GI symptoms)

Patient status	Dental condition	Dental Care Provider
Suspected or confirmed C-19 (high risk C-19)	Routine/ non-urgent	Treatment should be deferred until recovered. Recovery should be (14 days) from COVID-19 onset and have had at least 48 hours without fever or respiratory symptoms
	Urgent/ emergency non-AGP/ AGP	General practice for remote consultations/ prescribing, assessment, analgesia, antibiotics and where necessary, urgent/ emergency dental treatment for patients with suspected/confirmed C-19. Providers can seek advice from CDS services with regards to managing C-19 patients. Where appropriate, referrals may be made to appropriate local services.

Dental teams should be aware of atypical presentations of C-19 particularly amongst vulnerable groups. Risk assessments should be carried out in situations where a patient is not identified as having signs and symptoms of C-19 but screening questions identify other possible symptoms associated with C-19. Where there are concerns about symptoms associated with C-19 or other common infections (e.g. Flu, Norovirus), consideration should be given to delaying non-urgent treatment or treating the patient at the end of a session to reduce infection risk

Planning for care

Prioritising Care

Urgent/ emergency conditions should be prioritised. Those with the most urgent care need should be seen ahead of low-risk routine cases.

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.

Scheduling Appointments

Patients must be spaced throughout the day to leave time for cleaning and to limit waiting /contact times. Consideration should be given to appointment scheduling for specific patient groups:

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 ¹⁰ before and after care to minimise risk.
C-19 Emergency/ Urgent Care	Arrange appointment time to avoid contact with other patients/ staff. Book at the end of a session if possible to allow time for cleaning. Schedule time for procedure <u>and</u> time for decontamination (to include air clearance (fallow time) in an appropriate room)

Advice on self-care

Some cases will only require advice to enable the patient to self-care. NHS 111 Wales Encyclopaedia¹¹ has 31 pages on dental topics. Evidence-based principles of prevention should be used for all patients.¹²

¹⁰ <https://www.gov.uk/government/publications/decontamination-in-primary-care-dental-practices>

¹¹ <https://111.wales.nhs.uk/encyclopaedia/>

¹² 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

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) and using an appropriate process (Appendix 1). A face-to-face consultation should be undertaken where possible.

- Drugs for the Management of Dental Problems During COVID-19 Pandemic;¹³
- FGDP COVID-19: latest guidance and resources for GDPs;¹⁴
- High level principles for good practice in remote consultations and prescribing.¹⁵

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.

Preparing the practice environment

The use of facilities and zoning should be risk assessed. Mitigation and infection control measures for C-19 should be employed in accordance with IPC guidance and legislation (Appendix 4, 5, 6 and 7).

Measures may include.

- A map of facilities indicating required infection control measures and zoning
- Use of appropriate PPE in each area (Use of appropriate masks in waiting areas)
- Measures to manage unnecessary foot-fall (planning of appointments and signposting)
- C-19 Screening and separation in time, place and person e.g. patients with known C19 or who are self-isolating due to risk, contact with an individual with C-19 or travel history should not wait in the waiting room with other patients.
- Social distancing
- Open windows and maximising ventilation
- Processes to manage people who are vulnerable to infection (ie first appointment/straight to surgery) and who cannot wear masks
- Where surgery doors open directly to the waiting room ensure that this is closed during AGP procedures, and that fallow time is complete before opening the door.
- Frequent cleaning of waiting, communal areas, bathrooms and areas that are touched regularly.

¹³ <https://www.sdcep.org.uk/published-guidance/acute-dental-problems-covid-19/>

¹⁴ <https://www.fgdp.org.uk/news/covid-19-latest-guidance-and-resources-gdps#Remote%20prescribing%20and%20advice>

¹⁵ <https://www.gdc-uk.org/docs/default-source/guidance-documents/high-level-principles-remote-consultations-and-prescribing.pdf>

Care for patients requiring Non-AGP procedures

Primary care teams should offer appropriate non-AGP care to patients using appropriate care pathways and risk assessments (Appendix, 1, 2,3 and 8);

- Have a clear process for managing the patient journey to include risk assessments for C-19 as part of the assessment prior to care;
- Plan treatment in accordance with need, taking into consideration, the risk of transmission of C-19 (Appendix 9);
- Employ measures to reduce aerosol risk e.g. high-volume suction wherever possible;
- Use approaches to reduce contamination of the oral cavity and the working field e.g. the use of rubber dam;
- Maintain good hand hygiene (Appendix 10)
- Ensure appropriate use of PPE to include disposable gloves, appropriate gowns/ aprons/ body protection/ eye protection and respiratory protection.
- Ensure cleaning is carried out whilst wearing appropriate PPE.¹⁶
- Have a SOP in place for seeing urgent C-19 patients to include personal protective equipment and infection control procedures;

Care for patients requiring AGP procedures

- Carry out risk assessments prior to care (Appendix 1, 2 and 3);
- Defer unnecessary procedures for patients (14 days) who are high risk of having C-19.
- Have an SOP in place for seeing urgent C19 patients to include personal protective equipment and infection control procedures;
- Follow recommended IPC and PPE guidance ([COVID-19 infection prevention and control \(IPC\)](#)^{17,18}, [COVID-19 personal protective equipment \(PPE\)](#)¹⁹)
- The patient should be provided with information in advance of the appointment and should follow a specified agreed patient journey on arrival.

Where respiratory protection is required 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.

¹⁶ 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.

¹⁷ <https://www.gov.uk/government/publications/wuhan-novel-coronavirus-infection-prevention-and-control>

¹⁸ <https://phw.nhs.wales/services-and-teams/harp/infection-prevention-and-control/nipcm/>

¹⁹ <https://www.gov.uk/government/collections/coronavirus-covid-19-personal-protective-equipment-ppe>

PPE Pre-donning advice

- 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 is correct size and 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 may be worn, safety glasses/spectacles as required
- Put on dedicated surgery footwear (Crocs, wellies, plastic shoes that can be cleaned with an appropriate solution/ wipe e.g. Actichlor / Clinell).

Donning PPE

- Staff should adhere to the Donning and Doffing PPE techniques for C-19²⁰
- Wash hands (Appendix 11)
- FFP3/2 masks must be appropriately fit tested and then worn and checked in accordance with training and guidance (respirator hoods with equivalent respiratory protection can be used where these are available).

²⁰ <https://www.gov.uk/government/publications/covid-19-personal-protective-equipment-use-for-aerosol-generating-procedures>

Environment and ventilation for AGP care

- Advice should be sought for windowless surgeries with no mechanical ventilation as these should not be used for AGP.
- It is recommended that treatment rooms have minimum of 10 air changes per hour as poor ventilation will increase the risk of transmission.⁹ General dental practices should refer to the UK Infection Prevention Control (IPC) Dental Appendix for clearance times.²¹
- Advice should also be sought and measures should be put in place for surgeries with poor ventilation (<6) or where there is unknown ACPH. If surgeries with poor ventilation are used, AGPs should be avoided. Where this is not possible, these should be provided at the end of a session and procedures should be carried out using mitigation (Appendix 10).
- 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, it is essential that they are appropriate for use in a clinical environment (according to manufacturer's instructions) and can be appropriately cleaned and maintained. Practices will need to verify measurements (flow rates) and must ensure optimal maintenance (seek appropriate advice where needed). These should be sited optimally in accordance with manufacturers recommendations, calculations should assume a 50% efficiency³⁷ and room ACPH must be 1 ACPH or more. Where more than one device is used, practices will need to check with the manufacturers with regards to efficiency and optimal location. Evidence of advice, decisions and maintenance protocols and logs should be clearly documented and retained by the practice for possible future reference.
- Fogging techniques (with e.g. hypochlorous acid) are not currently recommended as this technique has not been confirmed 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.
- Additional considerations apply for practices using sedation e.g. management of ventilation/active scavenging of nitrous oxide gas (please refer to Wales sedation SOP/ guidance).

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 and single use equipment.
- The practice is advised to have an agreed system in place for the equipment required for specific procedures.

The time for decontamination following AGPs will depend on the number of air changes in the surgery per hour (ACPH). It is recommended that treatment rooms have minimum of 10 air changes per hour as poor ventilation will increase the risk of transmission.⁹ For a precise figure, ACPH verification is advised for each surgery. Where the ACPH is not known, currently recommended times should be used as per UK Infection Prevention Control (IPC)

²¹ <https://phw.nhs.wales/services-and-teams/harp/infection-prevention-and-control/nipcm/chapter-2-transmission-based-precautions-tbps/>

Dental Appendix for clearance times (a “fallow time” calculator ²² is available to support this).²³ Windowless surgeries with no natural or mechanical ventilation should not be used for AGPs or for seeing patients with C-19. Where no other option is available, measures must be employed to improve air quality (installation/use of appropriate equipment to improve ventilation and remove contaminants).³⁰ It is recommended that advice and verification should be sought from an appropriately qualified expert (e.g. commissioning company or occupational hygienist) when calculating ACPH and times.

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. ^{24,25} The room must be left for the recommended down (fallow) time and then deep cleaned (place a notice on door for re-entry time). General dental practices should refer to the UK Infection Prevention Control (IPC) Dental Appendix for non-C-19 clearance times.²⁶

Record keeping

Good record keeping is essential. Notes should be completed before and after care. Infection control procedures should be followed to minimise risk, e.g. not taking any paperwork into the surgery for AGPs or for seeing patients with C-19.

²² <https://account.myftc.co.uk/login?callbackDomain=https://myftc.co.uk>

²³ <https://phw.nhs.wales/services-and-teams/harp/infection-prevention-and-control/nipcm/chapter-2-transmission-based-precautions-tbps/>

²⁴ <https://www.gov.uk/government/publications/wuhan-novel-coronavirus-infection-prevention-and-control>

²⁵ <https://phw.nhs.wales/services-and-teams/harp/infection-prevention-and-control/nipcm/>

²⁶ <https://phw.nhs.wales/services-and-teams/harp/infection-prevention-and-control/nipcm/chapter-2-transmission-based-precautions-tbps/>

C-19 Patient care

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. This should determine if care can be deferred and the patient sent home in accordance with procedures for C-19 patients. If deferral is not possible, an assessment should be carried out to determine if urgent/ emergency care could be carried out safely in practice. Advice should be sought (e.g. from local CDS services) where there are concerns about managing urgent/ emergency dental care safely in the practice. Patients should be referred to local services for appropriate care (e.g. the CDS) where it is not possible to provide urgent/ emergency dental care safely in the practice. Environmental cleaning should be carried out as required.²⁷

Plans should be in place for the management of medical emergencies (Appendix 11).

²⁷ <https://phw.nhs.wales/topics/latest-information-on-novel-coronavirus-covid-19/information-for-healthcare-workers-in-wales/>

Appendix 1: Risk 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?	<input type="checkbox"/>	<input type="checkbox"/>	
Do you have any of the following symptoms? <ul style="list-style-type: none"> • high temperature or fever • new, continuous cough • a loss or alteration to taste or smell 	<input type="checkbox"/>	<input type="checkbox"/>	
Do you have any of the following symptoms? (recent onset and not usual to you) *frequency of symptoms in C-19 in brackets ²⁸ <ul style="list-style-type: none"> • loss of appetite (49-84%) • sputum production (28-33%) • aches and pains (11-44%) • sore throat (11-13) • diarrhoea (5-24%) • nausea/ vomiting (5-19%) • headache (6-70%) • a new skin rash/dicolouration of fingers or toes (<10%) 	<input type="checkbox"/>	<input type="checkbox"/>	
Have you had a positive test (laboratory) for COVID-19 (if yes, ask for confirmation message and record date)	<input type="checkbox"/>	<input type="checkbox"/>	
Are you or any member of your household/family waiting for a COVID-19 test result?	<input type="checkbox"/>	<input type="checkbox"/>	
Have you had double vaccination (over 2/52 ago) / positive test for COVID-19 antibodies? (please record details including date)	<input type="checkbox"/>	<input type="checkbox"/>	
Have you had an NHS (PCR or LFD) test with a negative test result in the past 72 hours? (if yes give specific details)	<input type="checkbox"/>	<input type="checkbox"/>	
Are you participating in regular setting/ workplace based COVID-19 testing?	<input type="checkbox"/>	<input type="checkbox"/>	
Have you travelled internationally in the last 14 days? If yes, confirm if this is a country agreed as safe for travel by the government. (for some countries up to 14 days quarantine / additional guidance will apply)	<input type="checkbox"/>	<input type="checkbox"/>	
Have you had contact with someone with a confirmed diagnosis of COVID-19, or been in isolation with a suspected case in the last 10 days	<input type="checkbox"/>	<input type="checkbox"/>	

ABUHB Medical History Questions

²⁸ <https://www.canada.ca/en/public-health/services/diseases/2019-novel-coronavirus-infection/guidance-documents/signs-symptoms-severity.html>

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

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?	<input type="checkbox"/>	<input type="checkbox"/>	
Does the person smoke or use tobacco products?	<input type="checkbox"/>	<input type="checkbox"/>	
Does the person smoke, snort, inject or ingest any drugs?	<input type="checkbox"/>	<input type="checkbox"/>	
Does the person take any over the counter medication?	<input type="checkbox"/>	<input type="checkbox"/>	
Does the person have any physical disability?	<input type="checkbox"/>	<input type="checkbox"/>	
Does the person have a learning disability?	<input type="checkbox"/>	<input type="checkbox"/>	
Does the person have any sight problems?	<input type="checkbox"/>	<input type="checkbox"/>	
Does the person have any hearing problems?	<input type="checkbox"/>	<input type="checkbox"/>	
Does the person need an interpreter?	<input type="checkbox"/>	<input type="checkbox"/>	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)
<input type="checkbox"/>	<input type="checkbox"/>		
REASON FOR HOSPITAL ADMISSION		APPROXIMATE DATE	
Is this person taking any regular medication? (including inhalers, tablets, medicine, creams, injections, unprescribed or herbal drugs)		Yes <input type="checkbox"/>	No <input type="checkbox"/>
		(Please give details below)	
Name of Drug	Dose/day	Name of Drug	Dose/day

Appendix 2: 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 ²⁹ , and those who have relevant health conditions ³⁰ which put them at particular risk from C-19.			
Risk assess staff. ³¹ (risk assessment tool: https://gov.wales/covid-19-workforce-risk-assessment-tool). 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 protocol and procedures			
Donning and doffing personal protective equipment			
Minimally invasive dentistry/ non AGP care			
Clinical assessment			
AGP care for confirmed/suspected C-19 cases			
CPR/ management of emergencies			

Training needs should be reviewed as necessary.

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

Staff illness and wellbeing

Staff illness and wellbeing checklist	Confirmed Complete by	Date	Date of Review
Practice policy for staff illness and for social distancing			
Staff informed of latest advice ³² and guidance on self-isolation if they or a member of their household develop signs of infection. ³³			

²⁹ Advice on pregnant healthcare workers 21.03.2020 <https://www.rcog.org.uk/globalassets/documents/guidelines/2020-03-28-covid19-pregnancy-guidance.pdf>

³⁰ 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)

³¹ <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>

³² 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>

³³ <https://www.gov.uk/government/publications/covid-19-stay-at-home-guidance/stay-at-home-guidance-for-households-with-possible-coronavirus-covid-19-infection>

Practices should consider processes to check for signs of possible infection for anyone entering the practice i.e. staff and patients			
Make sure that all staff are aware of what to do if they have symptoms. (Dental Track Trace and Protect FAQ information is available, this can be obtained from DPAS/Local Health Board Dental Leads). ³⁴			
Where agreed with Health Boards, have clear arrangements for regular testing for staff involved in higher risk			
Implement measures to check and support staff well-being. ³⁵			
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.			

³⁴Key (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>

³⁵ <https://leadershipportal.heiw.wales/playlists/view/c0abd55e-92ee-44d2-bcd1-33dd0221d1e3/en/1?options=oHXU%252BPmvHPR07%252FdPJVyl5sWo5wWqGQ3R4ZWZU%252B9vn1fRQkuIHkJS3aCF%252F5pPA4NRIUrRdtEhtlc1jVmauiYg%253D%253D>

Appendix 3: C-19 Risk assessment for dental practice

Risk assessments should be carried out to inform care decisions. Information that may be considered include:

Population transmission risk

- e.g. Low risk area, (low community transmission where cases are isolated e.g. to a small number of localised clusters).

Staff and patients

- e.g. Vulnerable groups and vaccination status
- No infections in the practice and no patient infections associated with the practice i.e. subsequent to dental attendance in the past 14 days.

Mitigation measures

- Air quality measures (ventilation/ air extraction) in place (>6 ACPH).
- Mitigation such as high-volume suction etc. should be used where possible
- All practice staff have been vaccinated (2nd dose 14 or more days prior) and are part of an occupational twice weekly LFD testing programme (can be increased to every other day/ daily).
- Patient risk assessment indicates low risk of COVID-19. This may include:
 - No symptoms associated with COVID -19
 - No recent risk contact with individuals with COVID-19
 - No recent travel history to red or amber list countries³⁶ areas with higher transmission within 10 days of returning
 - Vaccinated (full course i.e. 1st and 2nd dose at least 14 days prior to appointment) and not in a vulnerable group
- Social distancing following IPC and Welsh Government Guidance³⁷
- Where patients are from vulnerable group risk assessments and planning should take place to minimise the risks to the individual (i.e. first patient of the day/ session).
- Maintain records of staff vaccination dates and LFD results for future reference or audit purposes.
- Risk assessments will be needed for staff members who are vaccinated but who are identified as a contact of someone with C-19. ³⁸
- Members of staff who have symptoms must self-isolate and seek a PCR test
- Members of staff who are patient facing with a C-19 positive case in their household should be redeployed to non- patient facing work or should self- isolate
- Where the member of staff is patient facing, they should be redeployed, to non-patient facing work for 10-14 days from the point of exposure or participate in a specified testing programme (risk decisions need to consider the vulnerability of patients) ³⁹

³⁶ <https://www.gov.uk/guidance/red-amber-and-green-list-rules-for-entering-england#amber-list>

³⁷ <https://gov.wales/coronavirus-social-distancing-guidance>

³⁸ <https://gov.wales/covid-19-contacts-guidance-health-and-social-care-staff-html>

³⁹ <https://gov.wales/covid-19-contacts-guidance-health-and-social-care-staff-html>

Appendix 4: Areas, zoning, personal protective equipment, and social distancing

Personal protective equipment must be worn in accordance with the latest guidance⁴⁰⁴¹.

Dental practice

Area/Zone	Recommended PPE
Waiting Areas and Staff Areas	<ul style="list-style-type: none"> ○ Good Hand Hygiene ○ Fluid Resistant Surgical Mask (IIR)
Dental Surgeries non-AGP area (confirmed non-C-19)	<ul style="list-style-type: none"> ○ 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 non-COVID (risk assessed and tested as low risk C-19 in accordance with IPC guidance)	<ul style="list-style-type: none"> ○ 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 C-19 high risk in accordance with IPC guidance)	<ul style="list-style-type: none"> ○ 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)

*IPC guidance states: Where the risk assessment shows an FFP2 respirator is suitable, they are recommended as a safe alternative.⁴²

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 to minimise touching/ contamination (e.g. no opening of drawers)
- Not putting tips on the 3 in 1 to prevent accidental habitual use

Decontamination

- Training and use of correct procedures for donning and doffing of PPE to prevent contamination⁴³ (videos for [donning](#) and [doffing](#))
- Use of a spotter for doffing.

⁴⁰ COVID-19 personal protective equipment (PPE) Hub: <https://www.gov.uk/government/collections/coronavirus-covid-19-personal-protective-equipment-ppe>

⁴¹ <https://www.gov.uk/government/publications/wuhan-novel-coronavirus-infection-prevention-and-control/covid-19-infection-prevention-and-control-dental-appendix>

⁴² 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

⁴³ <https://www.gov.uk/government/publications/covid-19-personal-protective-equipment-use-for-aerosol-generating-procedures>

Reduction of Risk in Non-Clinical Areas

- Risk assess and mitigate against risks (use of facemasks, social distancing and cohorting of staff)
- Avoid sharing workstations/ workspaces and decontaminate between use (e.g. wipe phone, mouse, keyboard, pens must be wiped between use)
- Manage the risk of transmission in communal areas e.g. during breaks, when eating/drinking, in staff areas and at the beginning and end of the day
- Face masks must be worn by staff at all times. This includes all clinical and public facing areas, communal areas and corridors
- Rooms should be risk assessed, ventilation should be optimised, foot flow should be managed and crowding should be avoided (e.g. maximum number per room should be indicated on the door)
- Car sharing should be avoided. Where this is not possible masks should be worn and ventilation should be optimised (e.g. open windows)
- National rules should also be followed⁴⁴

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

Teams should be alert for counterfeit/ substandard PPE. ^{45,46} Further information about appropriate PPE is available in the guidance⁴⁴ and from the HSE.⁴⁷

⁴⁴ <https://gov.wales/coronavirus-regulations-guidance>

⁴⁵Counterfeit Respirators / Misrepresentation of NIOSH-Approval <https://www.cdc.gov/niosh/npptl/usernotices/counterfeitResp.html>

⁴⁶ Clamping down on risk of unsafe PPE <https://www.gov.uk/government/news/clamping-down-on-risk-of-unsafe-ppe>

⁴⁷ Using PPE at work during the coronavirus outbreak: <https://www.hse.gov.uk/coronavirus/ppe-face-masks/index.htm>

Appendix 5: Preparing waiting and communal areas

Checklist to minimise the risk of transmission ⁴⁸	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)			
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 high risk of transmission (e.g. periods of high transmission or cases with potential symptoms) ⁴⁹			
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. Ensure there are notices positioned on walls to remind staff of social distancing and wiping down after use – i.e. phones, mouse, kettle and SD markers on the floor and tape between chairs to stop patients sitting together			
Chairs and desks in working areas should be spaced and facing the wall so that staff are not facing each other without a protective mask.			

⁴⁸ Rapid Review of the literature: Assessing the infection prevention and control measures for the prevention and management of COVID-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/>

⁴⁹ 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 6: Preparing surgeries

The surgery should be decluttered, cleaned and decontaminated and waterlines should be flushed. [WHTM 01 05](#)⁵⁰ 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).			

⁵⁰Welsh Health Technical Memorandum HTM 01 05: <http://www.nwssp.wales.nhs.uk/sitesplus/documents/1178/WHTM%2001-05%20Revision%201.pdf>

Appendix 7: Visit information for patients

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 advise patients to not turn up without an appointment.

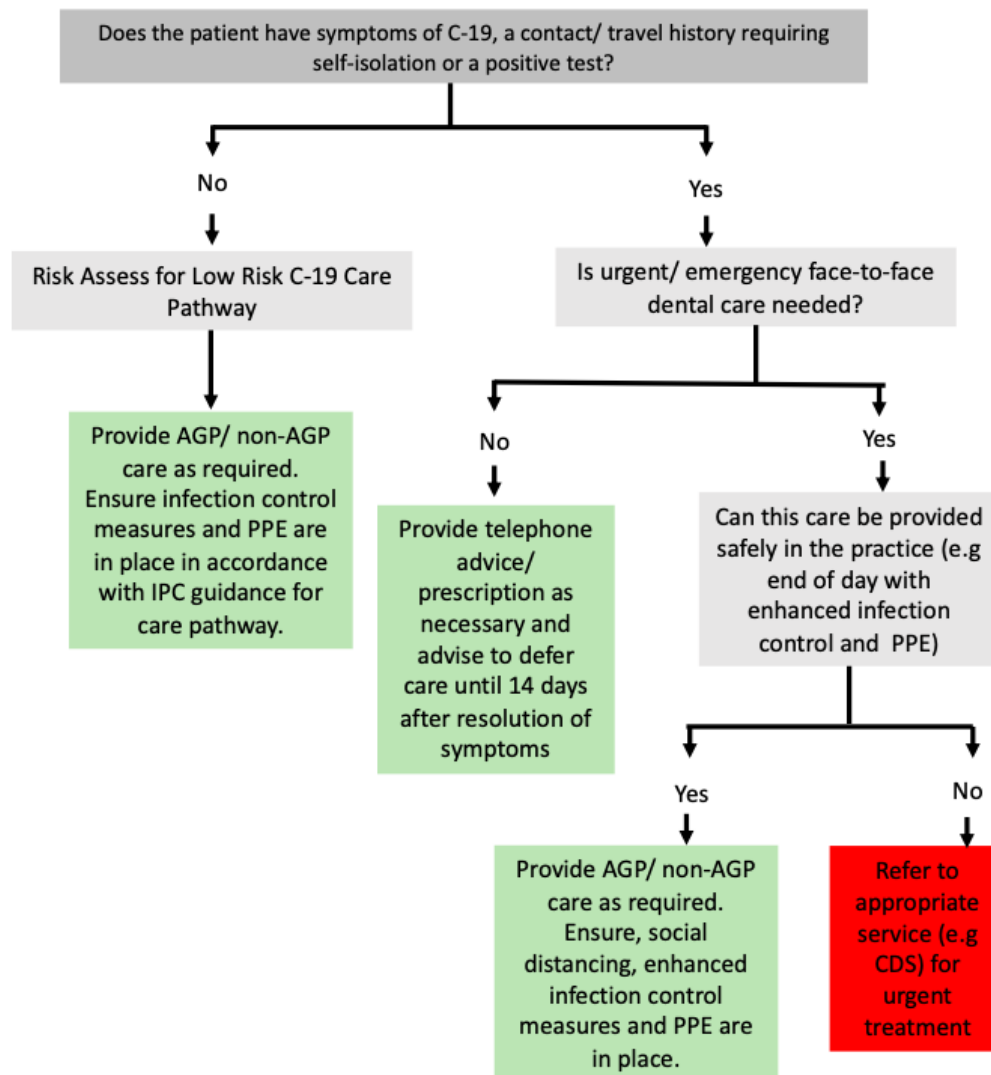
Before the appointment the patient should be advised:
To use the bathroom facilities at home before leaving
To arrive alone/ with the minimum number of people possible
To attend where possible, without bags or extra items
To use the agreed contact system e.g. contact the practice by telephone when they arrive
To follow practice procedures for entry to the practice e.g. 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 (notices on walls/ floors)
To be aware of cough etiquette (Catch it. Bin it. Kill It)
Details of who will meet them at the door (person's name/ colour of uniform etc)
They should wear the mask provided in all areas e.g. whilst walking through the corridor to the surgery and within the surgery when not receiving treatment. If the patient is exempt from wearing a mask, they should be taken directly 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 reapply mask, follow social distancing and avoid touching anything	
Escorted/ instructed to follow arrows on the wall as they did on the way in (C-19 patients should leave the building directly)	
Advise to return directly home after an AGP	
If the patient has attended alone please check if they need help with anything else	
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 any follow up calls	

Care Pathway



Appendix 9: C-19 Dental aerosol 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 later).

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 may need to be limited. Priority should be given to people with urgent/ emergency problems.

Useful information:

- BSP Back to work- risks associated with steps of treatment⁵¹
- BES COVID-19 return to work SOP⁵²
- British Orthodontic society orthodontic provider advice⁵³ and RCS guidance⁵⁴
- Paediatric Dentistry RCS guidance⁵⁷
- Special Care Dentistry RCS guidance⁵⁷
- Restorative RCS guidance⁵⁷
- Oral Medicine RCS guidance⁵⁷
- Oral Surgery RCS guidance⁵⁷
- Diagnostic imaging RCS guidance⁵⁷

⁵¹ <https://www.bsperio.org.uk/userfiles/BSP-Back-to-work-version-2-Risks-associated-with-steps-of-treatment-07.06-2020.pdf>

⁵² https://britishendodonticsociety.org.uk/wp-content/uploads/2020/06/BES_SOP-080620-v1.pdf

⁵³ <https://www.bos.org.uk/COVID19-BOS-Advice/Orthodontic-Provider-Advice>

⁵⁴ <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 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.⁵⁵
- Employ measures/ techniques to reduce amount, duration and contamination of aerosol while carrying out all care.

AGP care

Patients with suspected/ confirmed C-19 who require urgent face-to-face AGP treatment that cannot be deferred must be separated in time, place and person from other patients and staff not involved in their care (e.g. at the end of a session). Enhanced infection control measures must be used alongside personal protective equipment in accordance with the RED infection prevention and control care pathways. The ventilation SBAR should be used as a guide for down times for patients with suspected/ confirmed C-19.⁵⁶

Aerosol Generating Procedures

AGPs are procedures that create aerosols (air suspension of fine ($\leq 5\mu\text{m}$) particles). These are required and essential in the delivery of routine dentistry. These procedures require safe practice and adherence to this guide:^{57,58, 59}

Procedures that produce significant aerosol

- Handpieces (high speed turbine) >60,000 rpm
- Air abrasion;
- Ultrasonic scaler/piezo;
- Air polishing.
- 3 in 1 syringe (air/ water and air settings when used together);

⁵⁵COVID-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

⁵⁶ <https://www.scottishdental.org/wp-content/uploads/2020/08/Ventillation-Final-Copy-1.pdf>

⁵⁷ Bentley CD, Burkhart NW, Crawford JJ. Evaluating spatter and aerosol contamination during dental procedures. J Am Dent Assoc 1994; 125: 579–584.

⁵⁸ 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.

⁵⁹ Innes et al. A Systematic Review of Droplet and Aerosol Generation in Dentistry
<https://www.medrxiv.org/content/10.1101/2020.08.28.20183475v1>

Procedures that may produce aerosol dependent on use e.g. high power settings*

- Slow speed polishing and brushing;
- (turbine) >60,000 rpm, depending on the procedure
- Use of 3 in 1 when used gently as water alone or air alone

*Some dental treatments and procedures can produce varying degrees of aerosol depending on the way that they are used. For these procedures, risk assessments are advised. For example, limited, gentle use of 3 in 1 air 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, most likely, constitute a lower risk procedure and no additional down time is needed.⁶⁰

Procedures that are reported as not considered to be aerosol generating procedures AGP are:⁶¹

- Examinations/ oral health assessments;
- Hand scaling;
- Simple extractions;
- Removal of caries using hand excavation;
- Using slow-speed (non-turbine) handpiece for caries removal (with high volume suction)
- Local anaesthesia.
- Denture stages

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^{62,63,64}

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

⁶⁰ <https://www.sdcep.org.uk/wp-content/uploads/2021/04/SDCEP-Mitigation-of-AGPs-in-Dentistry-Rapid-Review-v1.2-April-2021.pdf>

⁶¹ Aerosol generating procedures and COVID: <https://www.yumpu.com/en/document/read/63158133/aerosol-generating-procedures-v2>

⁶² 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.

⁶³ Leggat PA, Kedjarune U. Bacterial aerosols in the dental clinic: A review. Int Dent J 2001; 51: 39–44.

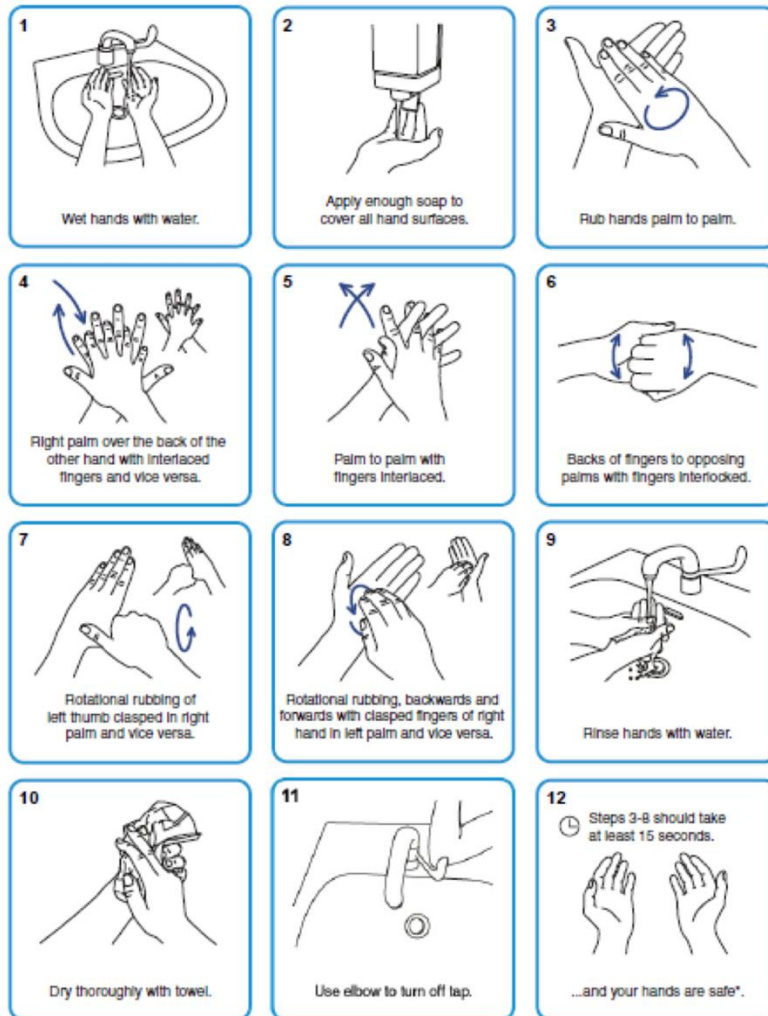
⁶⁴ Ge Z yu, Yang L ming, Xia J jia, Fu X hui, Zhang Y zhen. Possible aerosol transmission of COVID-19 and special precautions in dentistry. J. Zhejiang Univ. Sci. B. 2020; : 1–8.

Dry field operating (rubber dam,* cotton wool rolls)	Where possible
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
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.

Best Practice: how to hand wash

Steps 3-8 should take at least 15 seconds.



*Any skin complaints should be referred to local occupational health or GP.

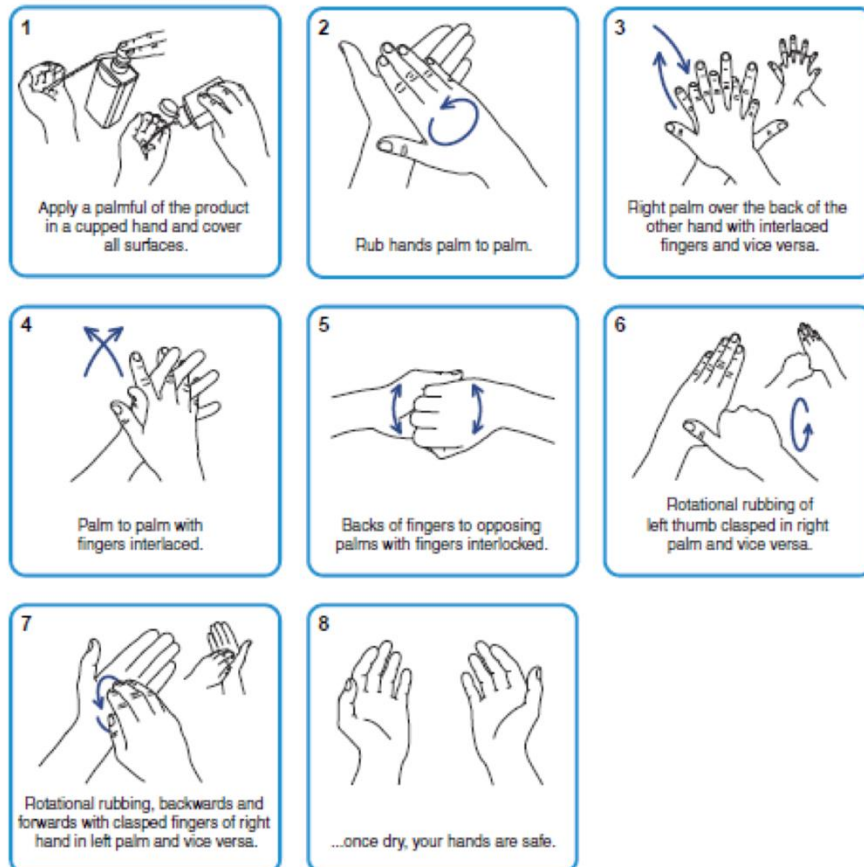
From: COVID-19. Guidance for infection prevention and control in healthcare settings

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

⁶⁵https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/877530/Best_Practice_hand_wash.pdf

Best Practice: how to hand rub

Duration of the process: 20-30 seconds.



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

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

⁶⁶https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/877529/Best_Practice_hand_rub.pdf

Appendix 11: Medical emergency procedure for when an AGP has commenced for a high C-19 risk patient

Should a medical emergency occur once an AGP procedure has started for a high risk patient, appropriate procedures should be followed to minimise transmission risk.

For a patient allocated to the Low-Risk category, the standard pre-COVID algorithms can be used and all healthcare staff attending resuscitation events should wear a minimum of a Type II fluid resistant surgical mask, eye protection, disposable gloves, and an apron.

For High Risk patients:

1. Activate emergency alarm
2. Clinical team to communicate to a runner nature of emergency and request exact Resus kit and emergency management poly-pocket.
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.
6. Clinical team to provide emergency medical care in line with current Resus Council advice⁶⁷.
7. Early use of AED is recommended

Example procedure below:

Management of suspected cardiac arrest when an AGP has commenced for a high risk COVID patient (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	

⁶⁷ <https://www.resus.org.uk/about-us/news-and-events/resuscitation-council-uk-position-covid-19-guidance-september-2020>