Dental management for respiratory transmitted illnesses (Including COVID-19) in Wales

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

Dr Warren Tolley	Deputy Chief Dental Officer and Associate Dental Director, Powys Teaching Health Board
Dr Ilona Johnson	Consultant in Public Health, Public Health Wales
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

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

This document is intended for dental settings that provide dental care in Wales. The COVID-19: Infection prevention and control dental appendix was withdrawn on 27th May 2022. The risk assessments and mitigations described within this document are intended to guide dental services to reduce the risk from Novel Coronavirus, SARs-CoV-2 (C-19) and other respiratory pathogens in dental practice, using the learning from C-19. 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.

Many infectious respiratory illnesses including C-19 are primarily transmitted between people through respiratory droplets and contact routes.[12] The World Health Organisation recommends frequent hand hygiene, respiratory etiquette, and environmental cleaning and disinfection for health and care environments to prevent transmission.[1] Dental procedures involve close contact and procedures that can generate aerosols (AGPs). Infection prevention and control (IPC) guidance recommends risk assessments and transmission based precautions for AGPs for a number of infectious agents where there is a particular transmission risk.[3]

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]

[1] Infection prevention and control in the context of coronavirus disease (COVID-19): A living guideline. WHO (7 March 2022) https://www.who.int/publications/i/item/WHO-2019-nCoV-ipc-guideline-2022.1

[2] Killingley B, Nguyen-Van-Tam J. Routes of influenza transmission. Influenza Other Respir Viruses. 2013 Sep;7 Suppl 2(Suppl 2):42-51. doi: 10.1111/irv.12080. PMID: 24034483; PMCID: PMC5909391.

[3] NIPCM Chapter 2 Appendix 11. https://phw.nhs.wales/services-and-teams/harp/infection-prevention-and-control/nipcm/chapter-2-transmission-based-precautions-tbps/

Service Recovery and learning from COVID-19 in Wales

Service recovery principles and managing risk

The aim of recovery is to rebuild service delivery for dentistry. Service providers should work to ensure that care is available for those who are most in need and who are at risk of serious complications or significant oral health deterioration.

A risk based approach should be used to minimise the possibility of transmission of C-19 and other serious respiratory infections to patients and the dental team within the dental care setting or during dental care procedures.

Risk Assessment

Dental teams should ensure that procedures are in place to minimise infection risk within the practice setting. Risk assessments and appropriate communication should be used to minimise risks to other patients and the practice team for, example respiratory/C-19 risk assessments and appropriate medical history (Appendix 1). Unnecessary treatment should be dererred where possible for patients with symptoms of infection (e.g. C-19, influenza, diahorrea, vomiting) where there is a risk of transmission.

Testing e.g.for C-19 to confirm status can be considered as part of risk assessments. Patients should be managed in accordance with risk, following infection control guidance.[4]

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 ≥37.8°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)

[4] NIPCM: Chapter 2 Transmission Based Precautions (TBPs) https://phw.nhs.wales/services-and-teams/harp/infection-prevention-and-control/guidance/infection-prevention-and-control-measures-for-sars-cov-2-covid-19-in-health-and-care-settings-wales/

Example of patient care management in relation to risk

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 is normally 5-10 or more days from C-19 onset. Patients should have had at least 48 hours without fever or respiratory symptoms before receiving routine dental treatment.
	Urgent/ emergency non-AGP/ AGP	Care may be provided in General Dental Practice. Providing the necessary, urgent/ emergency dental treatment for patients as required with appropriate infection prevention and control measures. C-19. Providers can seek advice from CDS services with regards to managing C-19 patients.

Dental teams should be aware of atypical presentations of conditions such as C-19 and other infectious respiratory borne conditions particularly amongst vulnerable groups.. Where there are concerns about symptoms associated with C-19 or other common infections (e.g. Flu, Norovirus), risk assessments should be completed and consideration should be given to delaying non-urgent treatment or treating the patient at the end of a session to reduce infection risk.

Managing the practice environment

Mitigation and infection control measures should be employed in accordance IPC guidance and legislation. Areas should be risk assessed and measures employed to reduce risks in accordance with Health and Safety legislation. Measures may include.

- Opening windows and maximising ventilation.
- Encouraging the use of masks in waiting areas.
- Supporting staff to wear facemasks (particularly those in patient facing roles).
- Patients with respiratory symptoms should wear facemasks (RII recommended) and visitors with respiratory symptoms should not attend.
- Patients or staff who are vulnerable to infection should wear masks (RII recommended).
- Risk based mitigation meaures, e.g. masks and where necessary, physical spacing are recommended where there is a particular risk of transmission e.g unventilated, crowded waiting areas, waiting areas for care of C-19 patients or in areas/ periods of high transmission of illness, or for services where there are particularly vulnerable patients.
- Processes to manage people who are vulnerable to infection (ie first appointment/straight to surgery) and who cannot wear masks.

Cleaning of waiting, communal areas, bathrooms and areas that are touched regularly.

Scheduling Appointments to manage risk

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

Patient information in advance of appointments should discourage patients with C-19 infection from attending (Appendix 4)

Care for patients

Primary care teams should have clear processes in place for assessing and managing risk. Following risk assessment, patients who do not have confirmed or suspected C-19, respiratory infections or other conditions (e.g. norovirus) that would indicate the need for transmission based precautions, may be managed with Standard infection control procedures and PPE guidance[6].(Appendix 5)

Patients who are identified as having confirmed or suspected C-19, respiratory infections or other conditions (e.g. norovirus) should defer unnecessary and non-urgent procedures. Practices should have processes in place for seeing urgent patients who require transmission based precautions using a hierarchy of controls (Appendix 6) to include personal protective equipment, infection control procedures. Personal protective equipment guidance should be followed in accordance with risk status.[5]

Where respiratory protection is required the clinician and chairside nurse must follow 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.

Teams should be alert for counterfeit/ substandard PPE.

[5] Welsh Health Technical Memorandum 01-05: Decontamination in primary care dental practices and community dental services. http://www.wales.nhs.uk/sites3/documents/254/WHTM%2001-05%20Revision%201.pdf

[6] NIPCM NIPCM - Public Health Wales (nhs.wales)

Environment and ventilation for AGP care when transmission based precautions are required

- 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.
- 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.
- 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% efficiency 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 care for patients who may require transmission based precautions.

- 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 where there is a respiratory transmission risk, will depend on patient risk assessment and 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. [7] For a precise figure, ACPH verification is advised for each surgery. Where the ACPH is not known, currently recommended clearance times should be used.[7] 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). 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 for transmission based precautions

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 [8,].The room must be left for the recommended down (fallow) time and then cleaned in accordance with transmission based precautions (a notice on door can help with re-entry time). General dental practices should refer to SDCEP guidance for recommended clearance times.[7]

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, respiratory or other illness where there is particular risk of infection, the patient should be assessed. This should determine if care should be deferred and the patient sent home until they are no longer infectious. 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.[7]

Plans should be in place for the management of medical emergencies (Appendix 7)

[7] Rapid review of AGPs | Scottish Dental Clinical Effectivenes (sdcep.org.uk). https://www.sdcep.org.uk/published-guidance/covid-19-practice-recovery/rapid-review-of-agps/

[8] Chapter 2 Transmission Based Precautions (TBPs) https://phw.nhs.wales/services-and-teams/harp/infection-prevention-and-control/guidance/infection-prevention-and-control-measures-for-sars-cov-2-covid-19-in-health-and-care-settings-wales/

Appendix 1: Respiratory Risk Assessment and and Medical History

Example of a risk assessment for respiratory diseases/infectious diseases i.e. norovirus:

Respiratory Risk Assessment May 2022

Please check the latest IPC guidance for where transmission based precautions may be indicated.

Please complete the following questions of both patient and carer	Yes	No	Details
Do you or anyone you live with have a confirmed positive test of COVID19 in the last 10 days or waiting for a result of a COVID19 PCR test? If yes, please give the dates	❑	❑	**If yes, defer. Proceed if urgent.**
Have you or a member of your household been told to isolate in last 10 days?	❑	❑	**If yes, consider deferral. Proceed if urgent.**
Do you have any of the following symptoms in past 24 hours • Fever or temperature that is over 37.8 degrees? • New persistent cough? • Recent loss of or changes to taste or smell? • Cold symptoms – runny nose/sneezing • Sore throat • Diarrhoea, nausea or vomiting • Headache (that is not usual for you) • Recent aches and pains	❑	❑	**If yes, consider deferral. Only proceed if urgent. Advise test if required.**
Have you travelled from another country outside the UK in past 10 days? If yes – which country? Check on gov.uk website for countries with infection risks	❑	❑	**If yes, and this is a country with an identified infection risk consider deferral. Proceed if urgent.**

ABUHB Medical History Questions (example)

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

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, and those who have relevant health conditions[9] which put them at particular risk.			
Staff Training	**Confirmed Complete by**	**Date**	**Date of Review**
Information about C-19, recognition, screening, and risk			
Management of a person with symptoms entering the practice			
Infection control protocol and procedures			
Donning and doffing personal protective equipment			
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 guidance if they or a member of their household develop signs of infection.			
Implement measures to check and support staff well-being.[10]			

[9] 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)
[10] Colleague health and wellbeing. HEIW: https://heiw.nhs.wales/support/colleague-health-and-wellbeing/

Uniform instructions for staff	Confirmed Complete by	Date	Date of Review
Establish uniform policy			
Ensure uniform laundry instructions are in place. 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.			

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 attendance.

Mitigation measures

- Air quality measures (ventilation/ air extraction) in place (>6 ACPH).
- Mitigation such as high-volume suction etc. should be used where possible
- Practice staff have been vaccinated (2nd dose 14 for or more days, plus up to date booster)
- 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 high risk countries or areas with high transmission
    - Not in a vulnerable group
- Follow IPC and Welsh Government Guidance
- 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, and wearing a mask in the practice).
- Members of staff with symptoms must self-isolate following
- Where the member of staff has been exposed to C-19 and is patient facing they should follow recommended guidance, [11] and participate in a specified testing programme. They should not work with immunosuppressed and/ or extremely clinically vulnerable patients for at least 7 days. risk decisions need to consider the vulnerability of patients)

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 contamination.

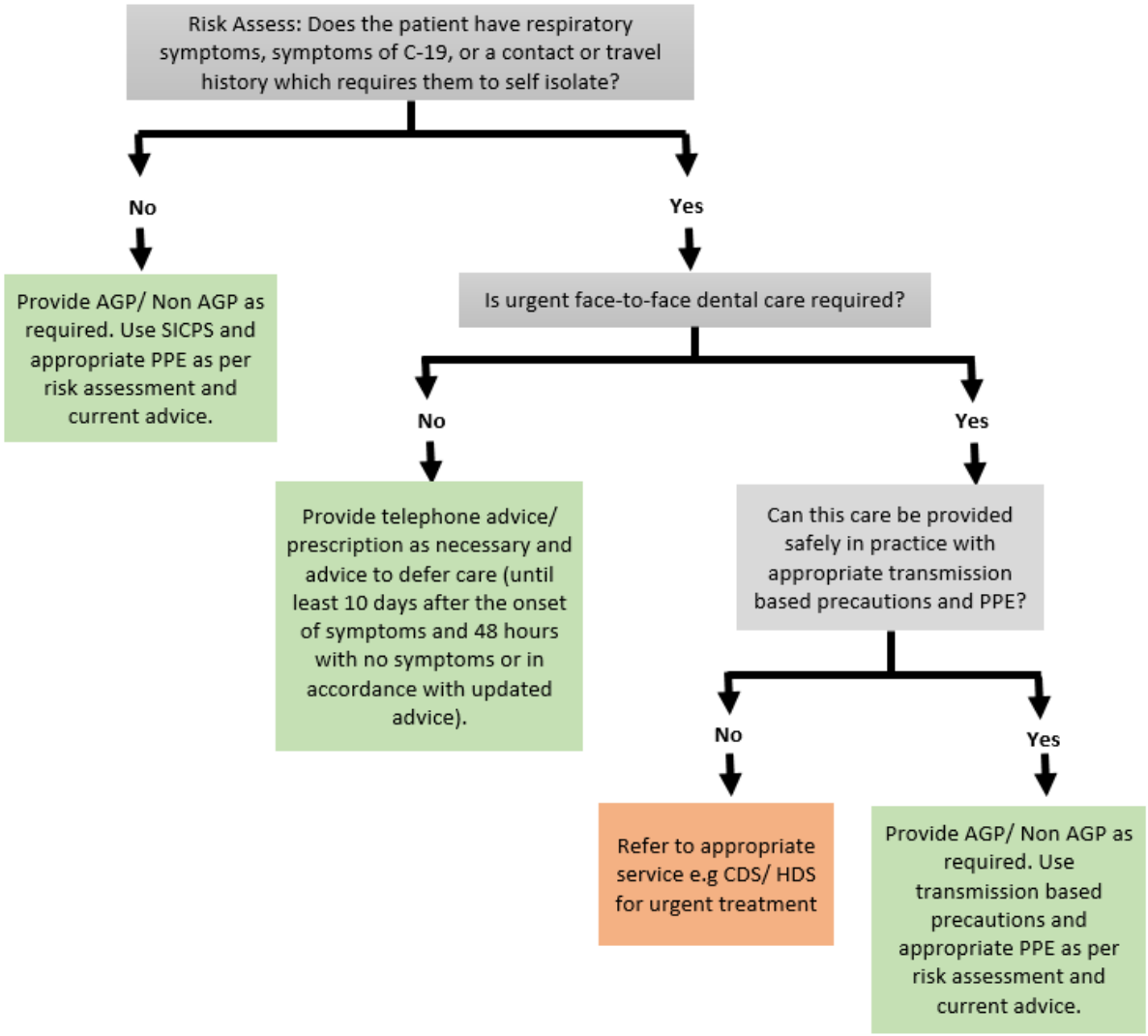
[11] Covid-19 contacts: guidance for health and social care staff. https://gov.wales/covid-19-contacts-guidance-health-and-social-care-staff-html

Appendix 4: 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. Where possible, to maximise the use of waiting areas and spacing, patients should be encouraged to avoid bringing in unnecessary additional visitors. Advice and visit information should also discourage patients from attending if they have C-19 or symptoms.

Patients with C-19 or symptoms who require appointments should wear a mask in the surgery and waiting areas and should be separated from other patients. Patients who are particularly vulnerable to infection (e.g immunocompromised) should be risk assessed and managed in accordance with risk (e.g. at the beginning of the session, and asked to wear a mask in waiting areas).

Appendix 5: Care pathway



Appendix 6: C-19 Hierarchy of controls to manage risk

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.
These may include patient management, environmental controls, personal protective equipment, decontamination and clinical procedures and processes.

Patient management

- Where possible defer treatment for patients with suspected/ confirmed C-19
- Use of non-AGP measures as an interim measure until the patient has recovered
- For urgent face-to-face AGP treatment that cannot be deferred, separate the patient in time, place and person from other patients and staff not involved in their care (e.g. at the end of a session).

Environmental controls, PPE and decontamination

- Ensuring dental care is delivered in surgeries with appropriate ventilation.
- Use an appropriate allowing time for air clearance time after an AGP.
- Decontamination of the environment following recommended decontamination procedures and timings (transmission based precautions for C-19 patients)
- Use appropriate hand hygiene
- Using recommended personal protective equipment PPE and ensure face protection during dental treatment care.

Clinical procedures and processes

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: [12,13, 14]
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);

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

---

[12] Bentley CD, Burkhart NW, Crawford JJ. Evaluating spatter and aerosol contamination during dental procedures. J Am Dent Assoc 1994; 125: 579–584.
[13] 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.
[14] Innes et al. A Systematic Review of Droplet and Aerosol Generation in Dentistry https://www.medrxiv.org/content/10.1101/2020.08.28.20183475v1

*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 limit the production of aerosol.

Procedures that are reported as not considered to be aerosol generating procedures AGP are:[15]

- 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, measures to reduce risk can include undertaking the procedure with particular care to avoid reflexes and coughing or alternatives e.g. using extraoral instead of intraoral radiographs where this is deemed clinically appropriate.

Measures for reducing aerosols[16,17,18]

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 if possible	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

[15] Aerosol generating procedures and COVID: https://www.yumpu.com/en/document/read/63158133/aerosol-generating-procedures-v2

[16] 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.

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

[18] 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. 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 7: Medical emergency procedure for when an AGP has commenced for a patient with a high risk of respiratory transmitted illness

Should a medical emergency occur once an AGP procedure has started for a patient with a high risk of respiratory transmitted illness (e.g C-19), appropriate procedures should be followed, based on risk to minimise the risk of transmission. This may include providing compression only recussitation.[19] Standard pre-COVID algorithms can be used in situations where there is a low risk of transmission.

[19] Resuscitation Council UK Statement on COVID-19 in relation to CPR and resuscitation in first aid and community settings | Resuscitation Council UK