

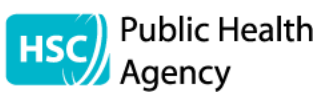


Public Health
England



COVID-19: infection prevention and control dental appendix

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About this guidance

The guidance is issued jointly by the Department of Health and Social Care (DHSC), Public Health Wales (PHW), Public Health Agency (PHA) Northern Ireland, Health Protection Scotland (HPS), Public Health Scotland, Public Health England and NHS England as official guidance.

Whilst this guidance seeks to ensure a consistent and resilient UK wide approach, some differences in operational details and organisational responsibilities may apply in Northern Ireland, England, Wales and Scotland.

Please note that this guidance is of a general nature and that an employer should consider the specific conditions of each individual place of work and comply with all applicable legislation, including the [Health and Safety at Work etc. Act 1974](#).



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1. Key messages for dental services

Patients will fall into either low, medium or high risk COVID-19 pathways.

Patients must be screened, triaged (and when available tested) prior to treatment.

Treatment for patients who are on the high-risk pathway should be restricted to urgent care only and these patients will need to be separated by space or time from other patients.

Airborne precautions are required for all patients on the medium and high-risk pathways if an AGP is undertaken.

Standard infection control precautions are required for patients in the low risk pathway even if an AGP is undertaken.

Dental practices are recommended to ascertain the air changes per hour (ACH) within all dental surgeries.

Post AGP downtime (fallow time) is dependent on air changes per hour and procedural mitigating factors (see section 9) but does not fall below 10 mins for patients in medium or high-risk pathways.

Mitigation against aerosols, such as high-volume suction and dental dam, should be used routinely and mitigation is considered essential where air changes are low.

AGPs should not be carried out in rooms where there is no natural or mechanical ventilation.

Practices should ensure physical distancing and good hand and respiratory hygiene measures are followed at all times throughout the practice.

2. Background

This document is an appendix to the 'COVID-19: Guidance for the maintaining of services within health and care settings' and covers the additional dental specific requirements to facilitate remobilisation. This should be read in conjunction with this guidance. Services should use the COVID-19 care pathways when planning care and treatment.

This guidance:

- seeks to ensure a consistent and resilient UK wide approach, though some differences in operational details and organisational responsibilities may apply in Northern Ireland, England, Wales and Scotland
- applies to all clinical dental services in all settings, including those provided on a private or independent basis

Academic evidence has been considered in the development of this guidance, and in particular, relevant sections of published reports from 2 UK dental expert working groups, which include:

- SBAR Ventilation, water and environmental cleaning in dental surgeries relating to COVID-19
- Mitigation of Aerosol Generating Procedures in Dentistry A Rapid Review

3. Administration measures for the care pathways in dentistry

Screening and triaging must be undertaken prior to the patient attending the dental setting/hospital or immediately upon arrival.

Patients with symptoms fulfilling the **clinical case definition** should not attend for routine dental care in any setting.

Signage at the entrance to the surgery/clinic/hospital should alert patients not to attend if suffering from the symptoms of COVID-19 and should signpost alternative courses of action if they have an urgent care need.

Treatment for patients on the high-risk pathway should be restricted to urgent care only and they must be separated in time or place from other patients.

Hand hygiene facilities and face masks should be available at the entrance and exit of the surgery/clinic/hospital.

If possible, all patients should be separate in space (2 metre) and time such as longer appointment times to ensure segregation.

In settings where multiple chairs are in use in the same room, there needs to be physical spacing of at least 2 metres and a method of physical segregation that provides at least a 2-metre barrier in the horizontal and vertical planes are recommended where AGPs are undertaken. Each 'pod' should have adequate ventilation.

Only the person receiving dental treatment should attend unless a carer or escort is required for example a child.

The use of face masks is mandatory for healthcare staff and all members of the dental team should wear masks in dental settings at all times.

Face coverings/masks are required by members of the public in public places such as hospitals, outpatient waiting areas and dental surgeries/clinics.

Waiting and treatment areas should be kept clean and clutter free with all non-essential items removed.

The example care pathways are outlined below:

High-Risk COVID-19	Medium Risk COVID-19	Low Risk COVID-19
<p>a) untriaged individuals present for assessment or treatment (symptoms unknown)</p> <p>OR</p> <p>b) confirmed SARS-CoV-2 positive individuals are cared for</p> <p>OR</p> <p>c) symptomatic or suspected COVID-19 individuals including those with a history of contact with a COVID-19 case, who have been triaged/clinically assessed and are waiting test results</p> <p>OR</p> <p>d) symptomatic individuals who decline testing</p>	<p>a) triaged/clinically assessed individuals are asymptomatic and are waiting a SARS-CoV-2 test result</p> <p>OR</p> <p>b) triaged/clinically assessed individuals are asymptomatic with COVID-19 contact/exposure identified</p> <p>OR</p> <p>c) testing is not required or feasible on asymptomatic individuals and infectious status is unknown</p> <p>OR</p> <p>d) asymptomatic individuals who decline testing</p>	<p>a) triaged/clinically assessed individuals with no symptoms or known recent COVID-19 contact /exposure</p> <p>AND</p> <p>have a negative SARS-CoV-2 test within 72 hours of treatment and, for planned admissions, have self-isolated for the required period or from the test date</p> <p>OR</p> <p>b) Individuals who have recovered (14 days) from COVID-19 and have had at least 48 hours without fever or respiratory symptoms</p> <p>OR</p> <p>c) patients or individuals are part of a regular formal NHS testing plan and remain negative and asymptomatic</p>

Currently, and until 'point of care' testing is available, patients requiring routine dental care will predominantly fall into the medium risk pathway. If a patient has evidence of a recent (72 hours) negative SARS-CoV-2 test and no screening or triaging risks are identified, then the low risk pathway can be followed.

4. Standard Infection Prevention Control Precautions (SICPs)

SICPs are the basic infection prevention and control measures necessary to reduce the risk of transmission of infectious agents from both recognised and unrecognised sources and are required across all COVID-19 pathways. Patients on the low risk pathway require SICPs alone unless another infectious agent is present.

The elements related to COVID-19 for dentistry

Patient placement/assessment for infection risk

There must be screening/triaging/testing as outlined above in the administrative measures for the care pathways.

Hand hygiene

Hands should be washed with soap and water: use of at least 60-80% alcohol based hand rub before and after caring/treating a patient, entering and leaving the surgery and after removal of PPE.

Respiratory and cough hygiene

Display posters on the need to cover the nose and mouth, have disposable tissues, hand hygiene facilities and waste receptacles available for staff and patients. Encourage patients to wear a face mask or covering.

Personal protective equipment

See below Table 2 for each pathway.

Safe management of the care environment/equipment

The frequency of cleaning across all risk pathways should be increased during the pandemic to at least twice daily. Frequently touched sites/points, in particular waiting rooms/dental chair, should be cleaned between patients and:

- a disinfectant agent such as a solution of chlorine at 0.1% or 1000ppm or an equivalent disinfectant effective against viruses, bacteria and fungi to EN standard 14476 for viricidal activity should be used
- equipment used for cleaning, for example cloths, should preferably be disposable; however, reusable items such as mops/buckets should be stored clean and dry between use
- medical devices and equipment should be managed as per manufacturer's instructions - decontamination processes for equipment and the environment following dental treatment should follow country specific guidance ([England](#), [Scotland](#) and [Wales](#))

Safe management of linen

Uniforms and scrubs should be washed separately at the highest temperature setting for the fabric.

Safe disposal of waste (including sharps)

Clinical waste should be treated as infectious waste and treated accordingly.

Occupational safety, prevention and exposure management

Prompt recognition of cases of COVID-19 among staff is crucial to limit spread and staff should not come to work if symptomatic until negative test results are available or until they do not have symptoms and have stayed at home and self-isolated for 10 days since the test was taken. If symptoms develop after the test, the 10-day isolation period should restart from the day the symptoms start. Employers should risk assess staff at high risk of complications from COVID-19 and manage their work commitments accordingly.

Maintain physical distancing of 2 metres

This is at all time in healthcare settings unless wearing PPE during direct care. If it is not possible to achieve this distance such as multi-chair clinics or reception areas, physical barriers should be used for example clear screens for reception. If space in staff rest areas is limited, consider allocating separate break times.

5. Transmission Based Precautions (TBPs)

TBPs are additional measures to SICPs required when caring for patients/individuals with a known or suspected infection such as COVID-19. TBPs are based upon the route of transmission and include:

- contact precautions - used to prevent and control infections spread by direct (hands) or indirect (environment or equipment) contact; COVID-19 can be spread via this route
- droplet precautions - used to prevent and control infections that spread from the respiratory tract via droplet ($>5 \mu\text{m}$ via coughs and sneezing) over short distances 1-2 metres from one individual to another; COVID-19 is predominately spread via this route
- airborne precautions - used to prevent and control infections that spread by aerosols ($<5 \mu\text{m}$) from the respiratory tract of one individual to another; COVID-19 can be spread via this route when an AGP is undertaken

SICPs are the basic IPC measures necessary to reduce the risk of transmitting infectious agents from both recognised and unrecognised sources of infection and are required across ALL COVID-19 pathways.

6. Aerosol generating procedures (AGPs)

AGPs are procedures that create a higher risk of respiratory infection transmission and are defined as any medical, dental or patient care procedure that can result in the release of airborne particles $<5 \mu\text{m}$ in size from the respiratory tract of an individual. These can remain suspended in the air, may travel over a distance and may cause infection if they are inhaled when treating someone who is suffering from an infectious disease, transmitted wholly or partly by the airborne or droplet route.

Airborne precautions are required when undertaking AGPs on the medium and high-risk pathway and only essential staff who are needed to undertake the procedure should be present. Dental procedures that use high velocity air and water streams are considered a high risk of creating aerosols and include:

- ultrasonic scaler (including piezo)
- high speed air/electric rotor (that is $>60,000$ rpm)
- Piezo surgical handpiece
- air polishers

NB. Research demonstrated that use of the 3-in-1 syringe with either air-only or water-only resulted in lower levels of contamination, with water-only causing the least contamination. There is currently no consensus to include the use of a 3-in-1 as an AGP.

7. Personal protective equipment including respiratory protective equipment (RPE)

The PPE required for low, medium and high-risk pathways including the use of airborne precautions when undertaking an AGP is summarised in Table 2. PPE/RPE (if AGP) must be worn by all members of the dental team undertaking, or assisting with, the procedure.

There is further advice available on donning and doffing for PPE for AGP precautions and donning and doffing for **non-aerosol procedures**.

Table 2: Personal protective equipment (PPE) and Respiratory PE for COVID-19 in dental care settings			
Patient pathway	High risk Airborne precautions	Medium risk Droplet/Contact precautions unless an AGP	Low risk ¹ SICPs
Waiting room/ reception No clinical treatment	Hand hygiene FRSM ²	Hand hygiene FRSM	Hand hygiene FRSM
Dental surgery Non- AGP	Hand hygiene Disposable gloves (not vinyl) Disposable plastic apron FRSM Eye/Face protection ³	Hand hygiene Disposable gloves (not vinyl) Disposable plastic apron FRSM Eye/Face protection	Hand hygiene Disposable gloves (not vinyl) Disposable plastic apron FRSM Eye/Face protection
Dental surgery AGP	Hand hygiene Disposable gloves (not vinyl) Disposable gown ⁴ FFP3 ⁵ or hood Eye/Face protection	Hand hygiene Disposable gloves (not vinyl) Disposable gown FFP3 or hood Eye/ Face protection	Hand hygiene Disposable gloves (not vinyl) Disposable plastic apron FRSM Eye/Face protection

¹Airborne precautions are NOT required for AGPs on patients/individuals in the low risk COVID-19 pathway, providing the patient has no other infectious agent transmitted via the droplet or airborne route.

²FRSM is a fluid-resistant (type IIR) surgical mask.

³Eye/Face protection (visors) ideally should be disposable. Re-usable eye and face (visors) protection (such as polycarbonate safety glasses/goggles/visors) is acceptable if decontaminated according to the manufacturer's instructions or local infection control policy. Regular prescription glasses are not considered adequate eye protection. Eye/face protection should be removed outside the surgery if worn with a respirator as part of airborne precautions.

⁴Reusable gowns can be used for sessional wear if disposable gowns are unavailable as a contingency measure only. Further advice on the use of reusable gowns may be found in country specific Standard Operating Procedures.

⁵ Reusable respirators can be utilised by practices where the practice, as the employer, holds the evidence that the respirator complies with HSE (Health & Safety Executive) recommendations, that the relevant staff members have been fitted to that mask according to manufacturers' guidance. Reusable respirators are decontaminated, and filters replaced according to the manufacturer's instructions. Sessional use of respirators is recommended if the dental team is undertaking multiple AGPs. FFP3s with valves should be shielded with full face visors.

Dental technician and laboratory workers should continue with their routine infection prevention and control measures in the laboratory and should follow the same guidance as dental practices in terms of hand and respiratory hygiene and physical distancing.

Engineering support workers for dental practices should adhere to PPE requirements and only work on equipment and rooms that have been decontaminated.

8. Ventilation requirements

All enclosed workplaces must be ventilated by natural or artificial means as set out in the [Workplace \(Health, Safety and Welfare\) Regulation](#). UK building regulations recommend whole building ventilation to be 10 l/s/person and current healthcare guidance for new buildings and major refurbishments specifies that a treatment room should have at least 10 air changes per hour (ACH).

Ventilation is important to reduce the risk of aerosol contamination from potential airborne/droplet pathogens in dental settings. Specialist advice should be sought on how best to achieve the recommended air changes.

It is recognised that transitional arrangements may need to be in place to support dental practices where air changes are unknown or below this recommended level.

9. Additional advice for environmental mitigation measures

Air cleaning devices

Recirculating air cleaning devices based on HEPA filter systems or UV-C are likely to be effective, but each device needs to be validated by the manufacturer and maintained.

It is difficult to make general recommendations for devices that remove viable microbes from air, either by filtration or microbicidal action. This is because: there is variability in the rate they pass air through the device, the removal or inactivation will vary according to filtration or microbicidal efficacy, and over time filters will become progressively blocked. Microbicidal treatment such as UV can get obscured by a build-up of dust and the spectrum of UV emission, critical for microbicidal efficacy, can change over time.

Addition of recirculating air cleaning devices could enhance the effective air change rate. Devices should be correctly sized and the impacts on the room air flows considered. The effectiveness of air cleaning devices will depend on the flow rate of the device, the efficiency of air cleaning and the size of the room.

Fans

These will create turbulence that dilutes the most concentrated aerosols. In these environments, it may be beneficial to move air towards windows and mechanical extract points.

Fans should not be directed towards doors, driving air into other rooms. Fans should be cleaned regularly to remove visible soiling and should not be used in the high-risk pathway.

Planned preventative maintenance, and cleaning of fans and their blades should continue.

Air conditioning units

Fixed air conditioning units (for example, wall or ceiling mounted recirculating air coolers -split units) and portable air conditioning, which do not recirculate to other rooms, can be used. Where there is poor air circulation within a room, it may be beneficial to mix air so as to dilute aerosols. These types of air conditioning will cool staff wearing water repellent PPE.

Portable air conditioning should not be directed towards doors, driving air into other rooms, nor should any pipework or cables impede fire doors. Care should be taken when emptying the reservoir of portable air conditioning due to the risk of legionella or other microorganisms being present in the condensate water. See separate HTM 04 01 guidance for [England, Wales, Northern Ireland](#) and [Scotland](#) on this. Daily emptying of the reservoir should be recorded. Planned maintenance should be carried out on the device following manufacturer's guidance and should be recorded. Do not use portable air conditioning that incorporates humidifiers.

Fumigation and fogging

The use of fumigation and fogging devices with disinfection chemicals are not advised for routine cleaning and or disinfection against COVID-19 and should only be considered in healthcare settings when multi-drug resistant organisms cannot be eradicated. This must always be under specialist infection prevention and control advice.

10. Post AGP downtime

A multidisciplinary working group (SDCEP) have proposed a pragmatic algorithm with mitigation factors for post AGP downtime that has been accepted by the 4 UK Chief Dental Officers.

See figure 1 for post AGP downtimes.

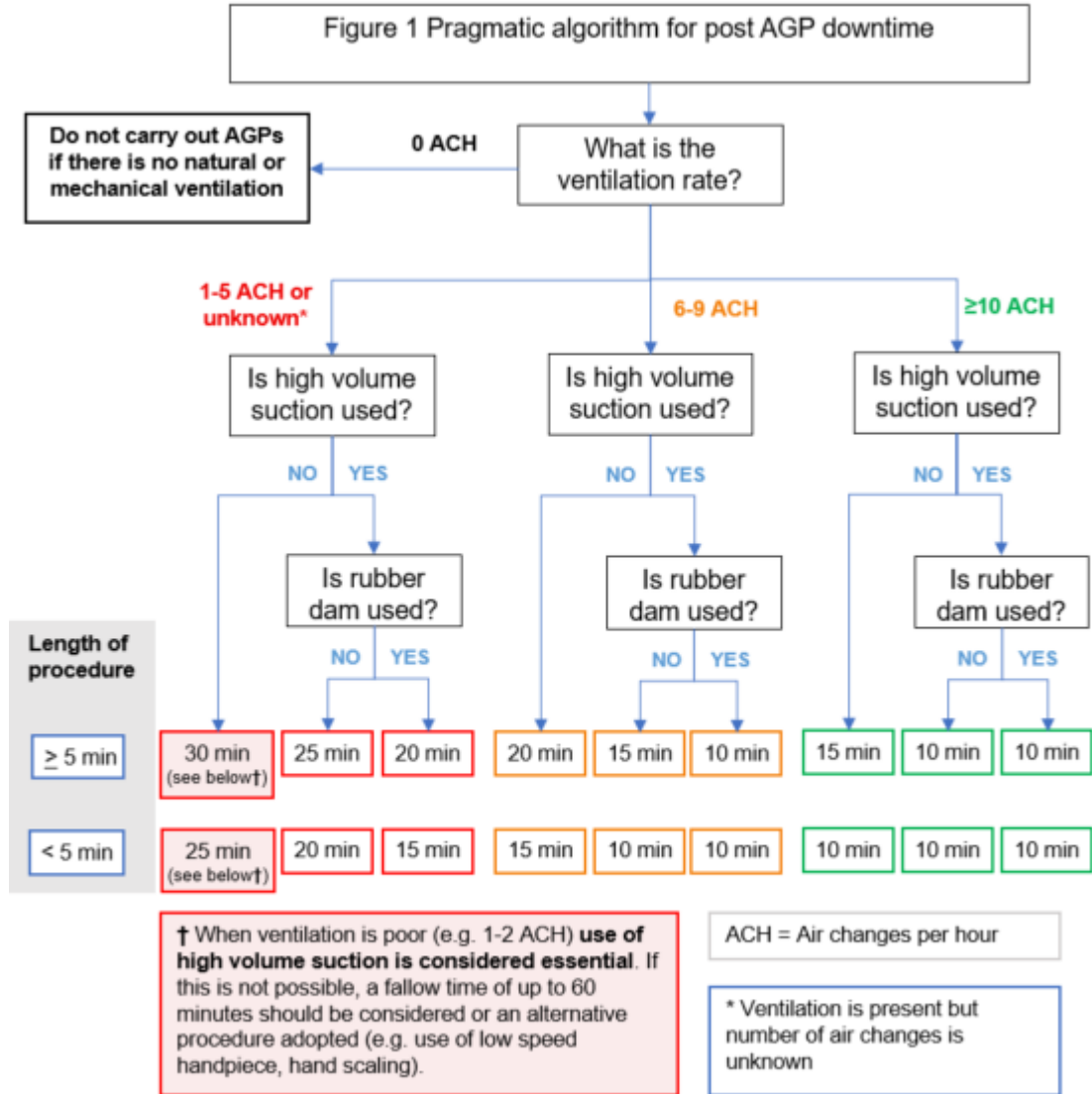
They advise that:

- where there is ventilation but the number of ACH are unknown, or there are air changes of 1 to 5 ACH, a baseline post AGP downtime of 30 minutes is recommended with mitigation such as high-volume suction/ rubber dam
- where there are 6 to 9 ACH, a baseline post AGP downtime of 20 minutes is recommended
- where there are 10 or more ACH, a baseline post AGP downtime of 15 minutes is recommended

Please note:

- low risk patients do not require post AGP downtime
- high risk patients should be separated by space or time from other patients
- AGPs should not be conducted in a room that has no natural (that is a window) or mechanical ventilation
- all equipment including ventilation, suction, air cleaners etc is maintained according to manufacturer's instructions and is operating effectively
- a minimum post AGP downtime of 10 minutes should apply to allow larger droplets to settle before environmental cleaning
- post AGP downtime can commence at the end of aerosol production

Figure 1: Algorithm for post AGP downtime



Algorithm for post AGP downtime: text description for accessibility

Top of chart begins Q: "What is the ventilation rate?"

1. If "1-5 ACH or unknown", then Q: "Is high volume suction used?"
 - a) If "Yes", then Q: "Is rubber dam used?"
 - i. If "Yes", then Q: "What is the length of procedure?"
 - a. If "5 minutes or greater" then post AGP down time= 20 minutes
 - b. If "less than 5 minutes" then then post AGP down time= 15 minutes
 - ii. If "No", then Q: "What is the length of procedure?"
 - a. If "5 minutes or greater" then post AGP down time= 25 minutes
 - b. If "less than 5 minutes" then then post AGP down time= 20 minutes
 - b) If "No", then Q: "What is the length of procedure?"
 - a. If "5 minutes or greater" then post AGP down time= 30 minutes
 - b. If "less than 5 minutes" then then post AGP down time= 25 minutes
2. If "6-9 ACH", then Q: "Is high volume suction used?"
 - c) If "Yes", then Q: "Is rubber dam used?"
 - iii. If "Yes", then Q: "What is the length of procedure?"
 - a. If "5 minutes or greater" then post AGP down time= 10 minutes
 - b. If "less than 5 minutes" then then post AGP down time= 10 minutes
 - iv. If "No", then Q: "What is the length of procedure?"
 - a. If "5 minutes or greater" then post AGP down time= 15 minutes
 - b. If "less than 5 minutes" then then post AGP down time=10 minutes
 - d) If "No", then Q: "What is the length of procedure?"
 - a. If "5 minutes or greater" then post AGP down time= 20 minutes
 - b. If "less than 5 minutes" then then post AGP down time= 15 minutes
3. If "10 or greater ACH", then Q: "Is high volume suction used?"
 - e) If "Yes", then Q: "Is rubber dam used?"
 - v. If "Yes", then Q: "What is the length of procedure?"
 - a. If "5 minutes or greater" then post AGP down time= 10 minutes
 - b. If "less than 5 minutes" then then post AGP down time= 10 minutes
 - vi. If "No", then Q: "What is the length of procedure?"
 - a. If "5 minutes or greater" then post AGP down time= 10 minutes
 - b. If "less than 5 minutes" then then post AGP down time= 10 minutes
 - f) If "No", then Q: "What is the length of procedure?"
 - a. If "5 minutes or greater" then post AGP down time= 15 minutes
 - b. If "less than 5 minutes" then then post AGP down time= 10 minutes