



## COVID-19

# Guidance for Dental Settings

Interim Infection Prevention and Control Guidance for Dental Settings During the Coronavirus Disease 2019 (COVID-19) Pandemic

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## Key Points

- Recognize dental settings have unique characteristics that warrant specific infection control considerations.
- Prioritize the most critical dental services and provide care in a way that minimizes harm to patients from delaying care and harm to personnel and patients from potential exposure to SARS-CoV-2 infection.
- Proactively communicate to both personnel and patients the need for them to stay at home if sick.
- Know the steps to take if a patient with [COVID-19 symptoms](#) enters your facility.

## Additional Key Resources

- [Interim Infection Prevention and Control Recommendations for Healthcare Personnel During the Coronavirus Disease 2019 \(COVID-19\) Pandemic](#)
- [Framework for Healthcare Systems Providing Non-COVID-19 Clinical Care During the COVID-19 Pandemic](#)
- [Information about managing school sealant programs during COVID-19 on CDC's Considerations for School Sealant Programs page.](#)

## Background

This interim guidance has been updated based on currently available information about coronavirus disease 2019 (COVID-19) and the current situation in the United States. As dental healthcare facilities begin to restart elective procedures in accordance with guidance from local and state officials, there are precautions that should remain in place as a part of the ongoing response to the COVID-19 pandemic. Most recommendations in this updated guidance are not new (except as noted in the summary of changes above); they have been reorganized into the following sections:

1. [Recommended infection prevention and control \(IPC\) practices for routine dental healthcare delivery during the pandemic](#)
2. [Recommended IPC practices when providing dental healthcare for a patient with suspected or confirmed SARS-CoV-2 infection](#)

Dental settings should balance the need to provide necessary services while minimizing risk to patients and dental healthcare personnel (DHCP). CDC has developed a [framework](#) for healthcare personnel and healthcare systems for delivery of non-emergent care during the COVID-19 pandemic. DHCP should regularly consult their state dental boards and [state or local health departments](#) for current local information for requirements specific to their jurisdictions, including recognizing the degree of community transmission and impact, and their region-specific recommendations.

**Transmission:** SARS-CoV-2, the virus that causes COVID-19, [is thought to spread](#) primarily between people who are in close contact with one another (within 6 feet) through respiratory droplets produced when an infected person coughs, sneezes, or talks. Airborne transmission from person-to-person over long distances is unlikely. However, COVID-19 is a new disease,

and we are still learning about how the virus spreads and the severity of illness it causes. The virus has been shown to persist in aerosols for hours, and on some surfaces for days under laboratory conditions. SARS-CoV-2 can be spread by people who are not showing symptoms.

**Risk:** The practice of dentistry involves the use of rotary dental and surgical instruments, such as handpieces or ultrasonic scalers and air-water syringes. These instruments create a visible spray that can contain particle droplets of water, saliva, blood, microorganisms, and other debris. Surgical masks protect mucous membranes of the mouth and nose from droplet spatter, but they do not provide complete protection against inhalation of infectious agents. There are currently no data available to assess the risk of SARS-CoV-2 transmission during dental practice.

## Recommendations

### 1. Recommended infection prevention and control (IPC) practices for routine dental healthcare delivery during the pandemic

CDC recommends using additional infection prevention and control practices during the COVID-19 pandemic, along with standard practices recommended as a part of routine dental healthcare delivery to all patients. These practices are intended to apply to all patients, not just those with suspected or confirmed SARS-CoV-2 infection (See [Section 2 for additional practices that should be used when providing dental healthcare for patients with suspected or confirmed SARS-CoV-2 infection](#)). These additional practices for all patients include:


#### Consider if elective procedures, surgeries, and non-urgent outpatient visits should be postponed in certain circumstances.

Provide dental treatment only after you have assessed the patient and considered both the risk to the patient of deferring care and the risk to DHCP and patients of healthcare-associated SARS-CoV-2 transmission. Ensure that you have the appropriate amount of personal protective equipment (PPE) and supplies to support your patients. If PPE and supplies are limited, prioritize dental care for the highest need, most vulnerable patients first – those at most risk if care is delayed. DHCP should apply the guidance found in the [Framework for Healthcare Systems Providing Non-COVID-19 Clinical Care During the COVID-19 Pandemic](#) to determine how and when to resume non-emergency dental care. DHCP should stay informed and regularly consult with the [state or local health department](#) for region-specific information and recommendations. [Monitor trends](#) in local case counts and deaths, especially for populations at higher risk for severe illness.

### Implement Teledentistry and Triage Protocols

- Contact all patients prior to dental treatment.
  - [Telephone screen](#) all patients for [symptoms consistent with COVID-19](#). If the patient reports symptoms of COVID-19, avoid non-emergent dental care and use the [Phone Advice Line Tool for Possible COVID-19 patients](#). If possible, delay dental care until the [patient has ended isolation or quarantine](#).
  - Telephone triage all patients in need of dental care. Assess the patient's dental condition and determine whether the patient needs to be seen in the dental setting. Use [teledentistry](#) options as alternatives to in-office care.
  - Request that the patient limit the number of visitors accompanying him or her to the dental appointment to only those people who are necessary.
  - Advise patients that they, and anyone accompanying them to the appointment, will be requested to wear a cloth face covering or facemask when entering the facility and will undergo screening for fever and symptoms consistent with COVID-19.

### Screen and Triage Everyone Entering a Dental Healthcare Facility for Signs and Symptoms of COVID-19

- Take steps to ensure that everyone (patients, DHCP, visitors) adheres to [respiratory hygiene and cough etiquette](#) and [hand hygiene](#) while inside the facility.
  - Post [visual alerts](#)  (e.g., signs, posters) at the entrance and in strategic places (e.g., waiting areas, elevators, break rooms) to provide instructions (in appropriate languages) about hand hygiene and respiratory hygiene

and cough etiquette. Instructions should include wearing a cloth face covering or facemask for source control, and how and when to perform hand hygiene.

- Provide supplies for respiratory hygiene and cough etiquette, including alcohol-based hand rub (ABHR) with at least 60% alcohol, tissues, and no-touch receptacles for disposal, at healthcare facility entrances, waiting rooms, and patient check-ins.
- Install physical barriers (e.g., glass or plastic windows) at reception areas to limit close contact between triage personnel and potentially infectious patients.
- Remove toys, magazines, and other frequently touched objects from waiting room that cannot be regularly cleaned and disinfected.
- Ensure that everyone has donned their own cloth face covering, or provide a facemask if supplies are adequate.
- Screen everyone entering the dental healthcare facility for fever and [symptoms consistent with COVID-19](#) or exposure to others with SARS-CoV-2 infection.
  - Document absence of symptoms consistent with COVID-19.
  - Actively take their temperature. Fever is either measured temperature  $\geq 100.0^{\circ}\text{F}$  or subjective fever.
  - Ask them if they have been advised to self-quarantine because of exposure to someone with SARS-CoV-2 infection.
- Properly manage anyone with symptoms of COVID-19 or who has been advised to self-quarantine:
  - If a patient is found to be febrile, has signs or symptoms consistent with COVID-19, or experienced an exposure for which quarantine would be recommended, DHCP should follow all precautions recommended in [Section 2 Recommended IPC practices when providing dental healthcare for a patient with suspected or confirmed SARS-CoV-2 infection](#).
  - If a patient has a fever strongly associated with a dental diagnosis (e.g., pulpal and periapical dental pain and intraoral swelling are present) but no other symptoms consistent with COVID-19 are present, dental care can be provided following the practices recommended in [Section 1. Recommended infection prevention and control \(IPC\) practices for routine dental healthcare delivery during the pandemic](#).
  - If a DHCP is found to be febrile or has signs or symptoms consistent with COVID-19, he or she should immediately return home, should notify occupational health services or the infection control coordinator to arrange for further evaluation, or seek medical attention.
- People with COVID-19 who have [ended home isolation](#) can receive dental care following [Standard Precautions](#).

## Monitor and Manage DHCP

- Implement sick leave policies for DHCP that are flexible, non-punitive, and consistent with public health guidance.
- As part of routine practice, DHCP should be asked to regularly monitor themselves for fever and symptoms consistent with COVID-19.
- DHCP should be reminded to stay home when they are ill and should receive no penalties when needing to stay home when ill or under quarantine.
- If DHCP suspect they have COVID-19:
  - Do not come to work.
  - Notify their primary healthcare provider to determine whether medical evaluation is necessary.
- Information about when DHCP with suspected or confirmed COVID-19 may return to work is available in the [Interim Guidance on Criteria for Return to Work for Healthcare Personnel with Confirmed or Suspected COVID-19](#).
- For information on work restrictions for health care personnel with underlying health conditions who may care for COVID-19 patients, see CDC's Healthcare Workers Clinical Questions about COVID-19: Questions and Answers on [COVID-19 Risk](#).

## Create a Process to Respond to SARS-CoV-2 Exposures Among DHCP and Others

- Request that patients contact the dental clinic if they develop signs or symptoms or are diagnosed with COVID-19 within 2 days following the dental appointment.
- If DHCP experience a potential work exposure to COVID-19, follow CDC's [Interim U.S. Guidance for Risk Assessment and Work Restrictions for Healthcare Personnel with Potential Exposure to COVID-19](#).
  - Information on testing DHCP for SARS-CoV-2 is available in the [Interim Guidance on Testing Healthcare Personnel for SARS-CoV-2](#).

- If patients or DHCP believe they have experienced an exposure to COVID-19 outside of the dental healthcare setting, including during domestic travel, they should follow CDC's [Public Health Guidance for Community-Related Exposure](#). Separate guidance is available for [international travelers](#).
- For more information, including frequently asked questions on infected healthcare personnel, see CDC's Healthcare Workers Clinical Questions about COVID-19: Questions and Answers on [Infection Control](#).

## Implement Universal Source Control Measures

Source control refers to use of [facemasks](#) (surgical masks or procedure masks) or [cloth face coverings](#) to cover a person's mouth and nose to prevent spread of respiratory secretions when they are talking, sneezing, or coughing. Because of the potential for asymptomatic and pre-symptomatic transmission, source control measures are recommended for everyone in a healthcare facility, even if they do not have signs and symptoms of COVID-19.

- Patients and visitors should, ideally, wear their own cloth facemask covering (if tolerated) upon arrival to and throughout their stay in the facility. If they do not have a facemask covering, they should be offered a facemask or cloth face covering, as supplies allow.
  - Patients may remove their cloth facemask covering when in their rooms or patient care area but should put it back on when leaving at the end of the dental treatment.
  - Facemasks and cloth face coverings should not be placed on young children under age 2, anyone who has trouble breathing, or anyone who is unconscious, incapacitated or otherwise unable to remove the mask without assistance.
- DHCP should wear a face mask or cloth face covering **at all times** while they are in the dental setting, **including in breakrooms or other spaces where they might encounter co-workers**.
  - When available, surgical masks are preferred over cloth face coverings for DHCP; surgical masks offer both source control and protection for the wearer against exposure to splashes and sprays of infectious material from others.
  - Cloth face coverings should NOT be worn instead of a respirator or facemask if more than source control is required, as cloth face coverings are not PPE.
  - Respirators with an exhalation valve are not currently recommended for source control, as they allow unfiltered exhaled breath to escape. If only a respirator with an exhalation valve is available and source control is needed, the exhalation valve should be covered with a facemask that does not interfere with the respirator fit
  - Some DHCP whose job duties do not require PPE (such as clerical personnel) may continue to wear their cloth face covering for source control while in the dental setting.
  - Other DHCP (such as dentists, dental hygienists, dental assistants) may wear their cloth face covering when they are not engaged in *direct patient care* activities, and then switch to a respirator or a surgical mask when PPE is required.
  - DHCP should remove their respirator or surgical mask, perform hand hygiene, and put on their cloth face covering when leaving the facility at the end of their shift.
- Educate patients, visitors, and DHCP about the importance of performing hand hygiene immediately before and after any contact with their facemask or cloth face covering.

## Encourage Physical Distancing

Dental healthcare delivery requires close physical contact between patients and DHCP. However, when possible, [physical distancing](#) (maintaining 6 feet between people) is an important strategy to prevent SARS-CoV-2 transmission. Examples of how physical distancing can be implemented for patients include:

- Limiting visitors to the facility to those essential for the patient's physical or emotional well-being and care (e.g., care partner, parent).
  - Encourage use of alternative mechanisms for patient and visitor interactions such as video-call applications on cell phones or tablets.
- Scheduling appointments to minimize the number of people in the waiting room.
  - Patients may opt to wait in a personal vehicle or outside the dental facility where they can be contacted by mobile phone when it is their turn for dental care.
  - Minimize overlapping dental appointments.



- Arranging seating in waiting rooms so patients can sit at least 6 feet apart.

For DHCP, the potential for exposure to SARS-CoV-2 is not limited to direct patient care interactions. Transmission can also occur through unprotected exposures to asymptomatic or pre-symptomatic co-workers in breakrooms or co-workers or visitors in other common areas. Examples of how physical distancing can be implemented for DHCP include:

- Reminding DHCP that the potential for exposure to SARS-CoV-2 is not limited to direct patient care interactions.
- Emphasizing the importance of source control and physical distancing in non-patient care areas.
- Providing family meeting areas where all individuals (e.g., visitors, DHCP) can remain at least 6 feet apart from each other.
- Designating areas for DHCP to take breaks, eat, and drink that allow them to remain at least 6 feet apart from each other, especially when they must be unmasked.

## Consider Performing Targeted SARS-CoV-2 Testing of Patients Without Signs or Symptoms of COVID-19

In addition to the use of universal PPE (see below) and source control in healthcare settings, targeted SARS-CoV-2 testing of patients without signs or symptoms of COVID-19 might be used to identify those with asymptomatic or pre-symptomatic SARS-CoV-2 infection and further reduce risk for exposures in some healthcare settings. Depending on guidance from local and state health departments, testing availability, and how rapidly results are available, facilities can consider implementing pre-admission or pre-procedure diagnostic testing with authorized nucleic acid or antigen detection assays for SARS-CoV-2. Testing results might inform decisions about rescheduling elective procedures or about the need for additional Transmission-Based Precautions when caring for the patient. Limitations of using this testing strategy include obtaining negative results in patients during their incubation period who later become infectious and false negative test results, depending on the test method used.

## Administrative Controls and Work Practices

- DHCP should limit clinical care to one patient at a time, whenever possible.
- Set up operatories so that only the clean or sterile supplies and instruments needed for the dental procedure are readily accessible. All other supplies and instruments should be in covered storage, such as drawers and cabinets, and away from potential contamination. Any supplies and equipment that are exposed but not used during the procedure should be considered contaminated and should be disposed of or reprocessed properly after completion of the procedure.
- Avoid aerosol generating procedures (see below for definition) whenever possible, including the use of high-speed dental handpieces, air/water syringe, and ultrasonic scalers. Prioritize minimally invasive/atraumatic restorative techniques (hand instruments only).
- If aerosol generating procedures are necessary for dental care, use four-handed dentistry, high evacuation suction and dental dams to minimize droplet spatter and aerosols. The number of DHCP present during the procedure should be limited to only those essential for patient care and procedure support.
- Preprocedural mouth rinses (PPMR)
  - There is no published evidence regarding the clinical effectiveness of PPMRs to reduce SARS-CoV-2 viral loads or to prevent transmission. Although SARS-CoV-2 was not studied, PPMRs with an antimicrobial product (chlorhexidine gluconate, essential oils, povidone-iodine or cetylpyridinium chloride) may reduce the level of oral microorganisms in aerosols and spatter generated during dental procedures.

## Implement Universal Use of [Personal Protective Equipment \(PPE\)](#)

For DHCP working in facilities located in areas with no to minimal community transmission

- DHCP should continue to adhere to [Standard Precautions](#) (and [Transmission-Based Precautions](#), if required based on the suspected diagnosis).
- DHCP should wear **a surgical mask, eye protection (goggles or a face shield that covers the front and sides of the face), a gown or protective clothing, and gloves** during procedures likely to generate splashing or spattering of blood or other body fluids. Protective eyewear (e.g., safety glasses, trauma glasses) with gaps between glasses and the face likely do not protect eyes from all splashes and sprays.

For DHCP working in facilities located in areas with moderate to substantial community transmission

- DHCP working in facilities located in areas with moderate to substantial community transmission are more likely to encounter asymptomatic or pre-symptomatic patients with SARS-CoV-2 infection. If SARS-CoV-2 infection is not suspected in a patient presenting for care (based on symptom and exposure history), DHCP should follow [Standard Precautions](#) (and [Transmission-Based Precautions](#), if required based on the suspected diagnosis).
- DHCP should implement the **use of universal eye protection** and wear eye protection in addition to their surgical mask to ensure the eyes, nose, and mouth are all protected from exposure to respiratory secretions during patient care encounters, including those where splashes and sprays are not anticipated.
- **During aerosol generating procedures DHCP should use an N95 respirator or a respirator that offers an equivalent or higher level of protection such as other disposable filtering facepiece respirators, powered air-purifying respirators (PAPRs), or elastomeric respirators.**
  - Respirators should be used in the context of a comprehensive respiratory protection program, which includes medical evaluations, fit testing and training in accordance with the Occupational Safety and Health Administration's (OSHA) Respiratory Protection standard ([29 CFR 1910.134](#) [↗](#) ).
  - Respirators with exhalation valves are not recommended for source control and should not be used during surgical procedures as unfiltered exhaled breath may compromise the sterile field. If only a respirator with an exhalation valve is available and source control is needed, the exhalation valve should be covered with a facemask that does not interfere with the respirator fit.

There are multiple [sequences recommended for donning and doffing PPE](#). One suggested sequence for DHCP is listed below. Facilities implementing reuse or extended use of PPE will need to adjust their donning and doffing procedures to accommodate those practices (see PPE Optimization Strategies).

- Before entering a patient room or care area:
  1. Perform hand hygiene (wash your hands with soap and water for at least 20 seconds or use a hand sanitizer).
  2. Put on a clean gown or protective clothing that covers personal clothing and skin (e.g., forearms) likely to become soiled with blood, saliva, or other potentially infectious materials.
    - Gowns and protective clothing should be changed if they become soiled.
  3. Put on a surgical mask or respirator.
    - Mask ties should be secured on the crown of the head (top tie) and the base of the neck (bottom tie). If mask has loops, hook them appropriately around your ears.
    - Respirator straps should be placed on the crown of the head (top strap) and the base of the neck (bottom strap). Perform a user seal check each time you put on the respirator.
  4. Put on eye protection (goggles or a face shield that covers the front and sides of the face).
    - Protective eyewear (e.g., safety glasses, trauma glasses) with gaps between glasses and the face likely do not protect eyes from all splashes and sprays.
    - Personal eyeglasses and contact lenses are NOT considered adequate eye protection.
  5. Put on clean non-sterile gloves.
    - Gloves should be changed if they become torn or heavily contaminated.
  6. Enter the patient room or care area.
- After completion of dental care:
  1. Remove gloves.
  2. Remove gown or protective clothing and discard the gown in a dedicated container for waste or linen.
    - Discard disposable gowns after each use.
    - [Launder](#) cloth gowns or protective clothing after each use.
  3. Exit the patient room or care area.
  4. Perform hand hygiene (wash your hands with soap and water for at least 20 seconds or use a hand sanitizer).
  5. Remove eye protection.
    - Carefully remove eye protection by grabbing the strap and pulling upwards and away from head. Do not touch the front of the eye protection.
    - Clean and disinfect reusable eye protection according to manufacturer's reprocessing instructions prior to reuse.
    - Discard disposable eye protection after use.

6. Remove and discard surgical mask or respirator.

- Do not touch the front of the respirator or mask.
- Surgical mask: Carefully untie the mask (or unhook from the ears) and pull it away from the face without touching the front.
- Respirator: Remove the bottom strap by touching only the strap and bring it carefully over the head. Grasp the top strap and bring it carefully over the head, and then pull the respirator away from the face without touching the front of the respirator.

7. Perform hand hygiene.

Employers should select appropriate PPE and provide it to DHCP in accordance with [OSHA's PPE standards \(29 CFR 1910 Subpart I\)](#) [↗](#). DHCP must receive training on and demonstrate an understanding of:

- when to use PPE;
- what PPE is necessary;
- how to properly [don, use, and doff PPE](#) in a manner to prevent self-contamination;
- how to properly dispose of or disinfect and maintain PPE;
- the limitations of PPE.

Dental facilities must ensure that any reusable PPE is properly cleaned, decontaminated, and maintained after and between uses. Dental settings also should have policies and procedures describing a recommended sequence for safely donning and doffing PPE.

## PPE Supply Optimization Strategies

Major distributors in the United States have reported shortages of PPE, especially surgical masks and respirators. The anticipated timeline for return to routine levels of PPE is not yet known. CDC has developed a [series of strategies or options to optimize supplies of PPE](#) in healthcare settings when there is limited supply, and a [burn rate calculator](#) that provides information for healthcare facilities to plan and optimize the use of PPE for response to the COVID-19 pandemic. Optimization strategies are provided for gloves, gowns, facemasks, eye protection, and respirators.

These policies are only intended to remain in effect during times of shortages during the COVID-19 pandemic. DHCP should review this guidance carefully, as it is based on a set of tiered recommendations. Strategies should be implemented sequentially. Decisions by facilities to move to contingency and crisis capacity strategies are based on the following assumptions:

- Facilities understand their current PPE inventory and supply chain;
- Facilities understand their PPE utilization rate;
- Facilities are in communication with local healthcare coalitions and federal, state, and local public health partners (e.g., public health emergency preparedness and response staff) regarding identification of additional supplies;
- Facilities have already implemented engineering and administrative control measures;
- Facilities have provided DHCP with required education and training, including having them demonstrate competency with donning and doffing, with any PPE ensemble that is used to perform job responsibilities, such as provision of patient care.

For example, extended use of facemasks and respirators should only be undertaken when the facility is at contingency or crisis capacity and has reasonably implemented all applicable administrative and engineering controls. Such controls include selectively canceling elective and non-urgent procedures and appointments for which PPE is typically used by DHCP. Extended use of PPE is not intended to encourage dental facilities to practice at a normal patient volume during a PPE shortage, but only to be implemented in the short term when other controls have been exhausted. Once the supply of PPE has increased, facilities should return to conventional strategies.

Respirators that comply with international standards may be considered during times of known shortages. CDC has guidance entitled [Factors to Consider When Planning to Purchase Respirators from Another Country](#) which includes a [webinar](#), and [Assessments of International Respirators](#).

# Hand Hygiene

Ensure DHCP practice strict adherence to [hand hygiene](#), including:

- Before and after all patient contact, contact with potentially infectious material, and before putting on and after removing personal protective equipment (PPE), including gloves. Hand hygiene after removing PPE is particularly important to remove any pathogens that might have been transferred to bare hands during the removal process.
- Use ABHR with at least 60% alcohol or wash hands with soap and water for at least 20 seconds. If hands are visibly soiled, use soap and water before returning to ABHR.
- Dental healthcare facilities should ensure that hand hygiene supplies are readily available to all DHCP in every patient care location.

## Equipment Considerations

- After a period of non-use, dental equipment may require maintenance and/or repair. Review the manufacturer's instructions for use (IFU) for office closure, period of non-use, and reopening for all equipment and devices. Some considerations include:
  - Dental unit waterlines (DUWL):
    - Test water quality to ensure it meets standards for safe drinking water as established by the Environmental Protection Agency (< 500 CFU/mL) prior to expanding dental care practices.
    - Confer with the manufacturer regarding recommendations for need to shock DUWL of any devices and products that deliver water used for dental procedures.
    - Continue standard maintenance and monitoring of DUWL according to the IFUs of the dental operator unit and the DUWL treatment products.
  - Autoclaves and instrument cleaning equipment
    - Ensure that all routine cleaning and maintenance have been performed according to the schedule recommended per manufacturer's IFU.
    - Test sterilizers using a biological indicator with a matching control (i.e., biological indicator and control from same lot number) after a period of non-use prior to reopening per manufacturer's IFU.
  - Air compressor, vacuum and suction lines, radiography equipment, high-tech equipment, amalgam separators, and other dental equipment: Follow protocol for storage and recommended maintenance per manufacturer IFU.
- For additional guidance on reopening buildings, see CDC's [Guidance for Reopening Buildings After Prolonged Shutdown or Reduced Operation](#).

## Optimize the Use of Engineering Controls

CDC does not provide guidance on the decontamination of building heating, ventilation, and air conditioning (HVAC) systems potentially exposed to SARS-CoV-2. To date, CDC has not identified confirmatory evidence to demonstrate that viable virus is contaminating these systems. CDC provides the following recommendations for proper maintenance of ventilation systems and patient placement and volume strategies in dental settings.



- Properly maintain ventilation systems.
  - Ventilation systems that provide air movement in a clean-to-less-clean flow direction reduce the distribution of contaminants and are better at protecting staff and patients. For example, in a dental facility with staff workstations in the corridor right outside the patient operatories, supply-air vents would deliver clean air into the corridor, and return-air vents in the rear of the less-clean patient operatories would pull the air out of the room. Thus, the clean air from the corridor flows past the staff workstations and into the patient operatories. Similarly, placing supply-air vents in the receptionist area and return-air vents in the waiting area pulls clean air from the reception area into the waiting area.
  - Consult with facilities operation staff or an HVAC professional to
    - Understand clinical air flow patterns and determine air changes per hour.
    - Investigate increasing filtration efficiency to the highest level compatible with the HVAC system without significant deviation from designed airflow.
    - Investigate the ability to safely increase the percentage of outdoor air supplied through the HVAC system (requires compatibility with equipment capacity and environmental conditions)



(requires compatibility with equipment capacity and environmental conditions).

- Limit the use of demand-controlled ventilation (triggered by temperature setpoint and/or by occupancy controls) during occupied hours and when feasible, up to 2 hours post occupancy to assure that the ventilation rate does not automatically change. Run bathroom exhaust fans continuously during business hours.
- Consider the use of a portable high-efficiency particulate air (HEPA) air filtration unit while the patient is undergoing, and immediately following, an aerosol generating procedure.
  - Select a HEPA air filtration unit based on its Clean Air Delivery Rate (CADR). The CADR is an established performance standard defined by the Association of Home Appliance Manufacturers and reports the system's cubic feet per minute (CFM) rating under as-used conditions. The higher the CADR, the faster the air cleaner will work to remove aerosols from the air.
  - Rather than just relying on the building's HVAC system capacity, use a HEPA air filtration unit to reduce aerosol concentrations in the room and increase the effectiveness of the turnover time.
  - Place the HEPA unit near the patient's chair, but not behind the DHCP. Ensure the DHCP are not positioned between the unit and the patient's mouth. Position the unit to ensure that it does not pull air into or past the breathing zone of the DHCP.
- Consider the use of [upper-room ultraviolet germicidal irradiation](#) (UVGI) as an adjunct to higher ventilation and air cleaning rates.
- Patient placement
  - Ideally, dental treatment should be provided in individual patient rooms, whenever possible.
  - For dental facilities with open floor plans, to prevent the spread of pathogens there should be:
    - At least 6 feet of space between patient chairs.
    - Physical barriers between patient chairs. Easy-to-clean floor-to-ceiling barriers will enhance effectiveness of portable HEPA air filtration systems (check to make sure that extending barriers to the ceiling will not interfere with fire sprinkler systems).
    - Operatories should be oriented parallel to the direction of airflow if possible.
  - Where feasible, consider patient orientation carefully, placing the patient's head near the return air vents, away from pedestrian corridors, and toward the rear wall when using vestibule-type office layouts.
- Patient volume
  - Ensure to account for the time required to clean and disinfect operatories between patients when calculating your daily patient volume.

## Environmental Infection Control

- DHCP should ensure that environmental cleaning and disinfection procedures are followed consistently and correctly after each patient (however, it is not necessary that DHCP should attempt to sterilize a dental operatory between patients).
  - Clean and disinfect the room and equipment according to the [Guidelines for Infection Control in Dental Health-Care Settings—2003](#)  .
- Routine cleaning and disinfection procedures (e.g., using cleaners and water to clean surfaces **before** applying an Environmental Protection Agency (EPA)-registered, hospital-grade disinfectant to frequently touched surfaces or objects for appropriate contact times as indicated on the product's label) are appropriate for SARS-CoV-2 in healthcare settings, including those patient-care areas in which aerosol generating procedures are performed.
  - Refer to [List N](#)  on the EPA website for EPA-registered disinfectants that have qualified under EPA's emerging viral pathogens program for use against SARS-CoV-2.
- Alternative disinfection methods
  - The efficacy of alternative disinfection methods, such as ultrasonic waves, high intensity UV radiation, and LED blue light against SARS-CoV-2 virus is not known. EPA does not routinely review the safety or efficacy of pesticidal devices, such as UV lights, LED lights, or ultrasonic devices. Therefore, EPA cannot confirm whether, or under what circumstances, such products might be effective against the spread of COVID-19.
  - CDC does not recommend the use of sanitizing tunnels. There is no evidence that they are effective in reducing the spread of COVID-19. Chemicals used in sanitizing tunnels could cause skin, eye, or respiratory irritation or damage.

- EPA only recommends use of the [surface disinfectants identified on List N](#) [↗](#) against the virus that causes COVID-19.
- Manage [laundry](#) and [medical waste](#) in accordance with routine policies and procedures.

## Sterilization and Disinfection of Patient–Care Items

- Sterilization protocols do not vary for respiratory pathogens. DHCP should perform routine cleaning, disinfection, and sterilization protocols, and follow the recommendations for Sterilization and Disinfection of Patient-Care Items present in the [Guidelines for Infection Control in Dental Health Care Settings – 2003](#) [📄](#) .
- DHCP should follow the manufacturer’s instructions for times and temperatures recommended for sterilization of specific dental devices.

## Education and Training

- Provide DHCP with job- or task-specific [education and training](#) on preventing transmission of infectious agents, including refresher training.
  - [Training: Basic Expectations for Safe Care](#)
- Ensure that DHCP are educated, trained, and have practiced the appropriate use of PPE prior to caring for a patient, including attention to correct use of PPE and prevention of contamination of clothing, skin, and the environment during the process of removing such equipment.
  - [Using Personal Protective Equipment \(PPE\)](#)
  - [Healthcare Respiratory Protection Resources Training](#)

## 2. Recommended infection prevention and control (IPC) practices when providing dental healthcare for a patient with suspected or confirmed SARS–CoV–2 infection

Surgical procedures that might pose higher risk for SARS-CoV-2 transmission if the patient has COVID-19 include those that generate potentially infectious aerosols or involve anatomic regions where viral loads might be higher, such as the nose and throat, oropharynx, respiratory tract (see [Surgical FAQ](#)).

- If a patient arrives at your facility and is suspected or confirmed to have COVID-19, defer non-emergent dental treatment and take the following actions:
  - If the patient is not already wearing a cloth face covering, give the patient a facemask to cover his or her nose and mouth.
  - If the patient is not manifesting [emergency warning signs for COVID-19](#), send the patient home, and instruct the patient to call his or her primary care provider.
  - If the patient is manifesting [emergency warning signs for COVID-19](#) (for example, has trouble breathing), refer the patient to a medical facility, or call 911 as needed and inform them that the patient may have COVID-19.
- If emergency dental care is medically necessary for a patient who has, or is suspected of having, COVID-19, DHCP should follow CDC’s [Interim Infection Prevention and Control Recommendations for Healthcare Personnel During the Coronavirus Disease 2019 \(COVID-19\) Pandemic](#).
- Dental treatment should be provided in an individual patient room with a closed door.
- DHCP who enter the room of a patient with suspected or confirmed SARS-CoV-2 infection should adhere to [Standard Precautions](#) and **use a NIOSH-approved N95 or equivalent or higher-level respirator (or facemask if a respirator is not available), gown, gloves, and eye protection**. Protective eyewear (e.g., safety glasses, trauma glasses) with gaps between glasses and the face likely do not protect eyes from all splashes and sprays.
  - Avoid aerosol generating procedures (e.g., use of dental handpieces, air/water syringe, ultrasonic scalers) if possible.
  - If aerosol generating procedures must be performed
    - Aerosol generating procedures should ideally take place in an airborne infection isolation room.
    - DHCP in the room should wear an N95 or equivalent or higher-level respirator, such as disposable filtering facepiece respirator, PAPR, or elastomeric respirator, as well as eye protection (goggles or a face shield that

covers the front and sides of the face), gloves, and a gown.

- The number of DHCP present during the procedure should be limited to only those essential for patient care and procedure support. Visitors should not be present for the procedure.
- Clean and disinfect procedure room surfaces promptly as described in the section on [environmental infection control](#).
- Limit transport and movement of the patient outside of the room to medically essential purposes.
  - Patients should wear a facemask or cloth face covering to contain secretions during transport. If patients cannot tolerate a facemask or cloth face covering or one is not available, they should use tissues to cover their mouth and nose while out of their room or care area.
- Consider scheduling the patient at the end of the day.
- Do not schedule any other patients at that time.
- To [clean and disinfect the dental operatory after a patient with suspected or confirmed COVID-19](#), DHCP should delay entry into the operatory until a sufficient time has elapsed for enough air changes to remove potentially infectious particles. CDC's Guidelines for Environmental Infection Control in Health-Care Facilities (2003) provides a [table to calculate time required for airborne-contaminant removal by efficiency](#).

## Definitions

**Aerosol generating procedures** – Procedures that may generate aerosols (i.e., particles of respirable size,  $<10\ \mu\text{m}$ ). Aerosols can remain airborne for extended periods and can be inhaled. Development of a comprehensive list of aerosol generating procedures for dental healthcare settings has not been possible, due to limitations in available data on which procedures may generate potentially infectious aerosols and the challenges in determining their potential for infectivity. There is neither expert consensus, nor sufficient supporting data, to create a definitive and comprehensive list of aerosol generating procedures for dental healthcare settings. Commonly used dental equipment known to create aerosols and airborne contamination include ultrasonic scaler, high-speed dental handpiece, air/water syringe, air polishing, and air abrasion.

**Airborne infection isolation rooms** – Single-patient rooms at negative pressure relative to the surrounding areas, and with a minimum of 6 air changes per hour (12 air changes per hour are recommended for new construction or renovation). Air from these rooms should be exhausted directly to the outside or be filtered through a high-efficiency particulate air (HEPA) filter directly before recirculation. Room doors should be kept closed except when entering or leaving the room, and entry and exit should be minimized. Facilities should monitor and document the proper negative-pressure function of these rooms.

**Air changes per hour:** the ratio of the volume of air flowing through a space in a certain period of time (the airflow rate) to the volume of that space (the room volume). This ratio is expressed as the number of air changes per hour.

**Cloth face covering:** Textile (cloth) covers that are intended for source control. They are not personal protective equipment (PPE) and it is uncertain whether cloth face coverings protect the wearer.

### Community Transmission

- **No to minimal community transmission:** Evidence of isolated cases or limited community transmission, case investigations underway; no evidence of exposure in large communal setting
- **Minimal to moderate community transmission:** Sustained transmission with high likelihood or confirmed exposure within communal settings and potential for rapid increase in cases
- **Substantial community transmission:** Large scale community transmission, including communal settings (e.g., schools, workplaces)

**Dental healthcare personnel (DHCP)** – Refers to all paid and unpaid persons serving in dental healthcare settings who have the potential for direct or indirect exposure to patients or infectious materials, including:

- body substances
- contaminated medical supplies, devices, and equipment
- contaminated environmental surfaces
- contaminated air

**Facemask** 🧢 : Facemasks are [PPE](#) and are often referred to as surgical masks or procedure masks. Use facemasks according to product labeling and local, state, and federal requirements. FDA-cleared surgical masks are preferred in dental settings because they are designed to protect against splashes and sprays and are prioritized for use when such exposures are anticipated, including surgical procedures. Facemasks that are not regulated by FDA, such as some procedure masks, which are typically used for isolation purposes, may not provide protection against splashes and sprays.

**Respirator**: Is a personal protective device that is worn on the face, covers at least the nose and mouth, and is used to reduce the wearer's risk of inhaling hazardous airborne particles (including dust particles and infectious agents), gases, or vapors. Respirators are certified by CDC/National Institute for Occupational Safety and Health (NIOSH), including those intended for use in healthcare.

Respirator use must be in the context of a complete respiratory protection program in accordance with OSHA Respiratory Protection standard ([29 CFR 1910.134](#) [🔗](#)). DHCP should be medically cleared and fit tested if using respirators with tight-fitting facepieces (e.g., a NIOSH-approved N95 respirator) and trained in the proper use of respirators, safe removal and disposal, and medical contraindications to respirator use.

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