



COVID-19: Dental FAQ

The COVID-19 pandemic has led to a reduction of dental services all over the world. This document serves as a follow-up to the May 13, 2020 Health Advisory re: dental practices during the COVID-19 pandemic. Please note that our guidelines are in alignment with guidance provided by the American Dental Association (ADA), Centers for Disease Control (CDC), Occupational Safety and Health Administration (OSHA), San Francisco City and County, Los Angeles City and County for dental care during the COVID-19 pandemic.

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What are the national recommendations for the restructuring and re-opening of dental services?

According to the Centers for Disease Control and Prevention (CDC), dental healthcare personnel (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.

Regardless of the degree of community spread, dental healthcare personnel are asked to continue to [practice universal source control and actively screen for fever and symptoms of COVID-19](#) for all people who enter the dental facility. If patients do not exhibit [symptoms consistent with COVID-19](#), 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 of healthcare-associated disease transmission. Ensure that you have the appropriate amount of [personal protective equipment](#) (PPE) and supplies to support your patient volume. If PPE quantities are limited, prioritize dental care for the highest need, most vulnerable patients first.

For more information, please see the [Centers for Disease Control and Prevention: Guidance for Dental Settings](#).

What does Alameda County recommend for the restructuring and re-opening of dental services?

As described in the [May 13, 2020, Health Advisory](#) regarding the resumption of non-urgent health care services, Alameda County strongly encourages dental service providers to limit in-person services due to the high-risk nature of COVID-19 transmission from aerosols generated during many dental procedures.

Clinicians should prioritize care previously postponed and conditions that are likely to lead to dental emergencies if treatment is not provided in a timely manner. Please note that the urgency of a procedure is a decision based on clinical judgment and should be made on a case-by-case basis.

Alameda County asks that dental healthcare personnel (DHCP) avoid aerosol-generating procedures whenever possible. DHCP should avoid using air turbine handpieces, air/water syringes, ultrasonic scalers, air polishing, low-speed handpieces used in rubber cup prophylaxis, or any other procedure that can generate an aerosol cloud from the patient's mouth.



Additional recommendations for the resumption of non-urgent dental care services include the use of:

- A fit-tested surgical N95 respirator which must be worn under a full-face shield for eye and face protection during aerosol generating procedures on non-contagious for COVID-19 patients. (Note: If surgical N95 respirators are not available due to supply shortages, then a standard (non-surgical) N95 respirator or a level 3 surgical mask with a full-face shield can be used for non-aerosol-generating procedures on non-contagious for COVID-19 patients according to CDC guidelines June 17)
- Personal protective equipment (PPE) including gloves and fluid-resistant gowns
- Universal barrier precautions such as a rubber dam that covers the mouth and the nose of the patient should be used whenever possible
- High volume evacuators for all dental procedures

Why is the guidance from Alameda County more restrictive than that of neighboring counties? What if my city or town, within Alameda County, has a low COVID-19 case count?

Alameda County has one of the largest numbers of COVID-19 cases in the Bay Area and does not currently meet the governor's performance metrics for moving to a less restrictive re-opening stage at this time. While we recognize that Alameda County is a large county that includes some cities with lower case counts than others, the COVID-19 pandemic plan is calculated and implemented by county rather than by city or town. People often cross geographic borders for work, family, or to get care.

Why am I being asked to avoid aerosol production?

Avoiding aerosol production is a significant strategy in slowing transmission of SARS-CoV-2. The practice of dentistry often involves the use of rotary dental and surgical instruments, including 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. The quality of aerosols generated by high-speed handpieces and ultrasonic units is much finer than that from a cough or sneeze and may remain airborne longer.

As an example, below are tables that compare the number of microbes included from dental aerosols in comparison to daily activity. We know that SARS CoV-2 is a virus and this study uses bacteria, but the information is useful as a guide. SARS-CoV-2 is a viral particle 0.1 microns in size, whereas bacteria range in size from 0.2 to 10.0 microns. (cfu/min is colony-forming units/minute). Please also note that scaling refers to hand scaling for Table 3. It is interesting to note that coughing has a high range of production of aerosols of 1,000 cfu/minute but using the air/water syringe has a high range of production of 128,000 cfu/minute.



TABLE 2
CHARACTERISTICS OF BACTERIAL AEROSOLS PRODUCED BY SUBJECTS
PERFORMING COMMON NASO-ORAL ACTIVITIES IN THE HUMAN
AEROSOL TEST CHAMBER

Activities	No. of Tests	Rate of Production (cfu/min)			% \leq μ m
		Range		Median	
		Low	High		
Group 1					
Breathe (quiet)	40	0	4	1	...
Breathe (heavy oral)	13	0	6	1	...
Breathe (heavy nasal)	13	0	12	2	...
Whisper	10	1	14	2	...
Yawn	11	0	16	1	...
Speak	16	1	28	3	...
Clear throat	9	0	64	1	...
Gargle	13	0	20	4	...
Group 2					
Eat	13	1	20	8	...
Sing	9	1	128	8	...
Whistle	13	1	34	12	...
Shout	16	1	38	14	...
Hiss	13	1	570	16	...
Cough	18	1	1,000	36	30
Group 3					
Sneeze	17	12	3,400	530	50
Brush teeth	17	32	> 70,000	2,500	54

TABLE 3
CHARACTERISTICS OF BACTERIAL AEROSOLS GENERATED FROM THE ORAL
CAVITIES OF PATIENTS DURING DENTAL PROCEDURES IN THE
HUMAN AEROSOL TEST CHAMBER

Procedures	No. of Tests	Rate of Production (cfu/min)			% \leq μ m
		Range		Median	
		Low	High		
Group 1					
Examination	10	1	14	3	...
Scaling	9	1	15	1	...
Group 2					
Wash teeth (water stream)	10	1	32	10	...
Prophylaxis (pumice)	12	4	270	42	43
Cavity preparation (air turbine hand-piece, air coolant)	10	1	155	58	80
Dry teeth (air spray)	17	12	4,900	72	65
Group 3					
Cavity preparation (air turbine hand-piece, water coolant)	13	52	8,500	1,000	95
Polish restoration (bristle brush)	14	24	> 123,000	2,300	55
Wash teeth (water spray)	9	540	> 128,000	37,000	94



Note: 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.

Who are considered dental healthcare personnel (DHCP)?

Dental healthcare personnel (DHCP) refers to all paid and unpaid persons serving in dental healthcare settings. DHCP has the potential for direct or indirect exposure to patients or infectious materials, such as body substances; contaminated medical supplies, devices, and equipment; infected environmental surfaces; and contaminated air.

What is the risk of exposure to SARS-CoV-2 for dental health personnel during dental practice?

In dental practices, SARS-CoV-2, the virus that causes COVID-19, spreads primarily through respiratory droplets. Close working environment and the potential for aerosol spread of the virus through dental procedures, such as the use of high and low-speed handpieces, ultrasonic scalers, air/water syringes, intra-oral radiographs or an infected patient coughing, places dental healthcare personnel (DHCP) at an elevated risk for infection.

Below in the next page are exposure risk levels for dentistry work by task:

Dentistry Work Tasks Associated with Exposure Risk Levels			
Lower (caution)	Medium	High	Very High
<ul style="list-style-type: none">Performing administrative duties in non-public areas of dentistry facilities, away from other staff members. <p>Note: For activities in the lower (caution) risk category, OSHA's Interim Guidance for Workers and Employers of Workers at Lower Risk of Exposure may be most appropriate.</p>	<ul style="list-style-type: none">Providing urgent or emergency dental care, not involving aerosol-generating procedures to members of the general public who are not known or suspected COVID-19 patients.Working at busy staff work areas within a dentistry facility.	<ul style="list-style-type: none">Entering a known or suspected COVID-19 patient's room or care area.Providing emergency dental care, not involving aerosol-generating procedures, to a known or suspected COVID-19 patient.Performing aerosol-generating procedures on non-COVID-19 patients.	<ul style="list-style-type: none">Performing aerosol-generating procedures on known or suspected COVID-19 patients.Collecting or handling specimens from known or suspected COVID-19 patients.

For more information about risk, see [Occupation Safety and Health Association: Dentistry Workers and Employers](#).



Wouldn't a surgical mask protect dental healthcare personnel from COVID-19 during dental procedures?

While surgical masks protect mucous membranes of the mouth and nose from droplet spatter, they do not provide complete protection against the inhalation of airborne infectious agents.

What is the guidance for administrative controls and work practices during the COVID-19 pandemic?

According to the [Centers for Disease Control and Prevention: Guidance for Dental Settings](#), updated May 19, 2020, administrative controls and work practices include but are not limited to:

- Screening patients and defer care for all patients with COVID-19 symptoms
- Limiting clinical care to one patient at a time whenever possible
- Limiting the number of DHCP present during the procedure to only those essential for patient care and procedure support

What additional steps can I take to minimize transmission of COVID-19 in my dental office?

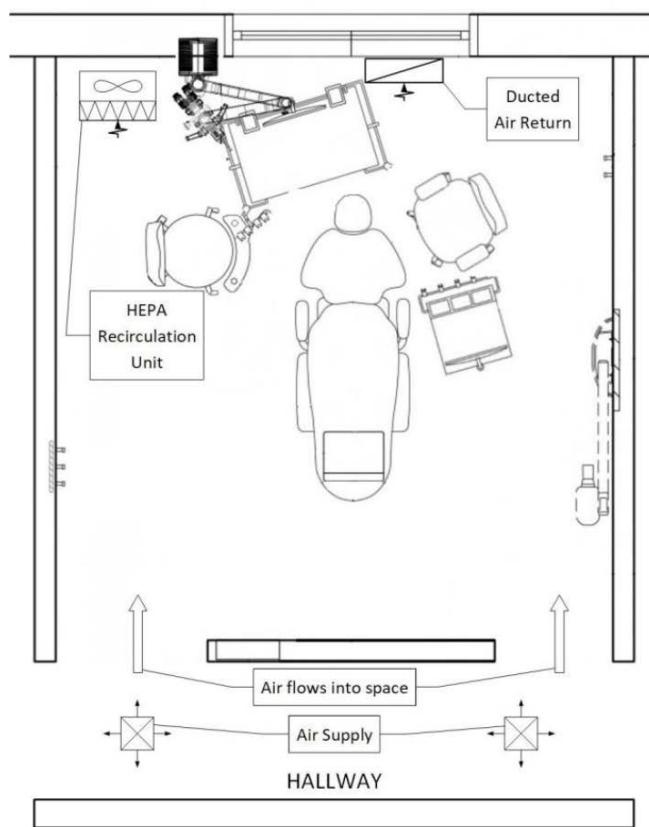
In addition to standard precautions, the ADA identifies the steps dentists can take to help prevent transmission of SARS-CoV-2 in their dental practices, as follows:

- Screening patients for travel and signs and symptoms of infection when they update their medical histories
- Taking temperature readings as part of their routine assessment of patients before performing dental procedures
- Making sure the personal protective equipment they use is appropriate for the procedures being performed
- Using a rubber dam when appropriate to decrease possible exposure to infectious agents
- Using high-speed evacuation for dental procedures producing an aerosol
- Cleaning and disinfecting public areas frequently, including door handles, chairs and bathrooms
- Implementing CDC and OSHA recommended engineering controls to shield dental healthcare personnel and patients from SARS-CoV-2



What are the recommended engineering controls for airflow?

- Operatories should be oriented parallel to the direction of airflow and, if possible, the patient's head should be near the return air vents (see Image # 1 below)
- 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
 - Position the unit so that it is not between the dental staff and the patient
- HVAC systems must run the entire time the office is open and for two hours after the close of business each day
- If you have a restroom, the exhaust fan must remain on during business hours
- For offices with open bay floorplans, try to place easy-to-clean floor-to-ceiling barriers between the dental chairs
 - Dental chairs should be at least 6 feet away from each other
 - Barriers should be cleaned and disinfected in between patients
- If needed and necessary, try to schedule aerosol-generating procedures near the end of the day



Graphic by CDC/NIOSH

Note: Consult heating, ventilation, and air conditioning (HVAC) professional to investigate increasing filtration efficiency to the highest level compatible with the HVAC system without significant deviation from designed airflow.

What do I do if a patient who tests positive for COVID-19 needs an emergency dental procedure?

Emergency dental care for patients with confirmed or suspected COVID-19 should be conducted in an airborne infection isolation room (AIIR) at a hospital or other facility where all appropriate infection control precautions can be followed. Dentists should follow additional CDPH and CDC guidelines.

For more information, please see the [Centers for Disease Control and Prevention: Guidance for Dental Settings](#).



How should I clean and disinfect the dental operatory after a patient leaves the office?

To clean and disinfect the dental operatory after a patient **with or without COVID-19 leaves**, dental healthcare personnel should delay entry into the operatory until [sufficient time has elapsed](#) for enough air changes to remove potentially infectious particles. This time will allow *most* droplets to sufficiently fall from the air after a dental procedure. Continue to clean and disinfect rooms and equipment according to the [CDC Guidelines for Infection Control in Dental Health-Care Settings—2003](#) and refer to the Environmental Protection Agency List N: Disinfectants for Use Against SARS-CoV-2.

The CDC previously recommended waiting fifteen minutes after the patient left the operatory before cleaning and disinfecting the room. This recommendation was recently removed on June 17, 2020. However, the ADA responded to this change by stating that it is still important to allow some time for aerosol droplets to settle before disinfecting the operatory. That wait time would be longer for an aerosol generating procedure than for a non-aerosol generating procedure like an exam. Each dental office has its own design creating other variables to consider in length of wait times such as:

1. Room air flow rate
2. Length of aerosol-generating procedures
3. Number of patients seen in the office during that time
4. Use of HEPA air filters

The ADA provides a COVID-19 Hazard Assessment to help dentists determine the length of the waiting period between patients for their individual practices.

For more information, please see [CDC: Environmental Infection Control](#).

How do we know who is well and who is an asymptomatic carrier?

Without a COVID-19 test, we cannot determine who is positive for SARS-CoV-2. Studies suggest that many persons with asymptomatic or mildly symptomatic infections are often not detected by the health system and that these persons meaningfully contribute to ongoing community transmission. A study from the Journal of the American Medical Association, April 22, 2020 by Safiya Richardson, MD, MPH, et al. showed how temperature screening for fever is not always a good indicator of SARS-CoV-2 infection. The records of 5700 patients in the New York City Hospital System found that at triage, only 1734 (30.7%) of COVID-19 patients were febrile.

Another recent article by Daniel Oran AM and Eric Topol MD in the Annals of Internal Medicine, June 3, 2020 investigated the role of asymptomatic infected persons in the spread of COVID-19 by reviewing the COVID-19 testing done on the people in sixteen different cohorts. The tests reviewed were the real-time reverse transcriptase polymerase chain reaction using nasopharyngeal swabs. In their key summary points, they state that 40% to 45% of people infected with SARS-CoV-2 will remain asymptomatic but they can transmit the virus to others



for fourteen days or more. They suggest asymptomatic people should be tested for SARS-CoV-2.

For more information, see [Evidence Supporting Transmission of Severe Acute Respiratory Syndrome Coronavirus 2 While Pre-symptomatic or Asymptomatic](#).

What are some additional points to consider in my dental office?

- Walls should be clear of paper posters, unframed photos, etc.
- Counters and all other surfaces should only contain the items needed for that specific procedure (e.g., no large containers of gauze, cotton tip applicators, etc.)
- It is not recommended to autoclave disposable gowns and then reuse these gowns.
- Initial fit testing is required for N95 respirators
 - Any gaps around the bridge of the nose or under the chin indicate a poor fit

Where can I find additional information and resources about dental practices and COVID-19?

- [Alameda County Public Health Department: COVID-19 and Dental Services \(ACPHD\)](#)
- [American Dental Association: COVID-19 \(ADA\)](#)
- [Centers for Disease Control and Prevention: Guidance for Dental Settings \(CDC\)](#)
- [Cochrane: Recommendations for the Re-opening of Dental Services](#)
- [Occupational Safety and Health Administration: COVID-19 and Dentistry \(OSHA\)](#)