

## COVID – 19 SAFETY-NET FAQ

### **What is “flattening the curve”?**

This refers to efforts to push down the number of infections each day without overwhelming the already strained health systems. These efforts include, social distancing, postponement of non-emergent and elective medical and dental procedures, and continued habits to remain healthy including proper hand hygiene.

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### **Do we *need* to close our dental center/clinic?**

The [American Dental Association](#) and the [Virginia Dental Association](#) have recommended that dental clinics postpone elective, non-emergent dental care at this time. This limitation intends to minimize person-to-person contact, decrease the generation of aerosols while keeping dental emergencies out of hospital settings as much as possible.

Currently, there is no state-wide or national mandate regarding changes in daily operations of dental offices. It is important to note that Washington State has issued a mandate on non-emergency medical and dental treatment until May 18. If clinics and offices do not begin to comply with recommendations, a similar mandate may become a reality in Virginia.

Please refer to the [HRSA guidance](#) for continued updates for health centers funding/resources, provision of care, FTCA requirements, service delivery, special populations, and other relevant topics during the COVID-19 pandemic.

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### **Why are providers halting elective procedures?**

Currently, we cannot reliably identify asymptomatic infected patients. Infected individuals may not exhibit *any* of the symptoms of a COVID infection. Conversely, symptoms of a COVID infection are similar to those with asthma, seasonal allergies, or the common cold. Exhibit caution at this time is prudent. We must continue to protect our patients from healthcare-related infections.

Many dental procedures produce aerosols, which are known to increase exposure potential in infected patients.

Additionally, there is a national shortage of personal protection equipment (PPE) and it is important we divert these necessary supplies to hospitals and health centers who are treating sick individuals at this time.

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### **What defines a dental emergency?**

The American Dental Association provided these [guidelines](#), however, it is recommended you rely on your providers' best clinical judgment at this time.

## **What is a person under investigation (PUI)?**

A person under investigation or PUI is an individual who has met specific criteria that indicates they may be infected with a disease, in this case, COVID-19. These are individuals who had recent travel outside of the country (less than 14 days), especially to regions of known COVID pandemics, individuals with recent contact with COVID infected individuals, symptoms of COVID (dry cough, fever, shortness of breath). These inclusion criteria of PUIs are constantly changing as new information is learned regarding this disease and it is important to remain informed.

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## **What is an “aerosol”?**

An aerosol is an incredibly tiny particle that is suspended in air or water. These particles can include debris, pathogens, or other microscopic organisms. A more detailed explanation from the University of Pittsburgh Department of Public Health can be found [below](#).

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## **What is Personal Protection Equipment (PPE)?**

Personal Protection Equipment, also referred to as PPE, is equipment worn to minimize exposure to hazards that cause serious workplace injuries and illnesses. These injuries and illnesses may result from contact with chemical, radiological, physical, electrical, mechanical, or other workplace hazards. Personal protective equipment may include items such as gloves, safety glasses and shoes, earplugs or muffs, hard hats, respirators, or coveralls, vests and full bodysuits.

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## **Where should our offices prioritize access to PPE?**

This will vary from clinic to clinic. There are reported national shortages of PPE, including N-95 respirators, facemasks, and gowns. Utilization of teledentistry including emergency management and palliative care of the phone is paramount in minimizing unnecessary waste of PPE during this time. Several safety net organizations have indicated they are diverting available PPE to their medical centers during this time. Similar trends will likely continue to grow, locally and nationally, as available PPE is diverted to high need locations, especially hospitals.

Remember, according to the CDC, “Healthcare facilities are responsible for protecting their HCP from exposure to pathogens, including by providing appropriate PPE...The anticipated timeline for return to routine levels of PPE is not yet known.”

If your dental providers and staff do not have access to appropriate PPE to perform dental treatment during this time, they should not be treating patients.

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## **How do we manage coding and billing in our dental clinic during COVID-19?**

The American Dental Association has provided [interim guidance](#) at this time. It is important to remember that this is an ever-developing situation and this will be updated as more information becomes available.

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## **Does anyone understand how limiting clinic hours, scope of practice, or provider availability will affect prospective payment system (PPS) rates?**

The short answer is no, but as this situation continues to develop, we will share information as it is made available.

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## **How can we support our providers and clinics from a scheduling and equipment standpoint during this time?**

The American Dental Association has shared these [OSHA Guidelines](#) for preparing a workplace for COVID-19. Additionally, the American Dental Association has a [sample patient letter](#) that can be sent out to your patients on behalf of your clinic informing them of these temporary changes in services available.

It is important to utilize phone-based triaging, including appropriate COVID screening questions at this time. If your clinic can see and treat emergency patients, please minimize the number of individuals present in the clinic at a time. Consider seeing one patient at a time, allowing adequate time to clean the rooms between patients and change PPE appropriately, requesting patients wait in their cars until their appointment, and managing as much palliative care on the phone as possible.

The CDC has a useful [illustrated guide](#) on protecting your patients and staff from COVID-19.

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## **What roles does HIPAA play during teledentistry and COVID?**

While the Office of Civil Rights and the US Department of Health and Human Services (HHS) have [relaxed many of their regulations](#) regarding HIPAA at this time, these waivers do *not* apply to dentistry at this time. These waivers apply to **covered hospitals** not complying with certain provisions of the HIPAA Privacy Rule *only*.

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## **How can we prepare our clinic for a temporary closure?**

The Wisconsin Dental Association has offered this [checklist](#) on how to prepare dental equipment for an extended absence.

Contact your patients and inform them of the temporary closure and offer them strategies for who to contact if an emergency arises. If possible connect with another clinic to help manage care at this time. It is important to keep as many dental emergencies out of emergency rooms as possible.

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## **What can our dental team do if we temporarily close our center?**

If possible, divert your dental team to support your medical team. This could be assisting in cleaning rooms between patients, answering phones, screening patients appropriately, or other supportive roles. Some safety net organizations are preparing to convert their dental operatories into consult rooms of medical patients as needed.

# UNIVERSITY OF PITTSBURGH DEPARTMENT OF PUBLIC HEALTH REPORT ON AEROSOLS ON HOW IT RELATES TO DENTISTRY

## **Aerosol Production Risk**

High risk for aerosol production:

- Ultrasonic and sonic scalers
- Air Polishing
- Air/Water syringe.
- Air Turbine handpiece without rubber dam or high-speed evacuation

Considerably less risk for aerosol production

- Air Turbine handpiece with a rubber dam and high-speed evacuation

Unknown risk for aerosol production:

- Air Abrasion
- Hall/Stryker drill

## **Important Points:**

1. Using high volume evacuators and/or rubber dams greatly reduces aerosols (preferably both – as one can layer on protection with each intervention.)
2. Aerosols (versus splatter) the a big risk here. In a dental operator, aerosols are produced and can linger in the air for 30 min. to 2 hours. (an argument for using “new” rooms after patient care – and waiting 2 hours to clean the previous room to allow aerosols from previous patient care to settle out)
3. Microbes from dental procedures fill the entire room – they can be found in high concentrations quite far from the patient – walls, tabletops, etc. (Another argument for new room use)
4. Traditional masks only seem to work for splatter. They do not protect against aerosols.
5. N95 masks require fitting to work properly
6. When there is no aerosol (only splatter) then regular masks should be ok.

## **Terminology**

- **Aerosols** (the big concern): particles less than 50 µm in diameter. Particles of this size are small enough to stay airborne for an extended period before they settle on environmental surfaces or enter the respiratory tract. The smaller particles of an aerosol (0.5 to 10 µm in diameter) have the potential to penetrate and lodge in the smaller passages of the lungs and are thought to carry the greatest potential for transmitting infections. The greatest airborne infection threat in dentistry comes from aerosols
- **Splatter** (less of a concern): Airborne particles larger than 50 µm in diameter. These particles behaved in a ballistic manner. This means that these particles or droplets are ejected forcibly from the operating site and arc in a trajectory similar to that of a bullet until they contact a surface or fall to the floor.

## FINDINGS FROM DIFFERENT STUDIES

Below are some quotes from some various studies I found. (I have the full manuscripts if you want me to send them)

There are at least three potential sources of airborne contamination during dental treatment: dental instrumentation, saliva, and respiratory sources, and the operative site. Most dental procedures that use mechanical instrumentation will produce airborne particles from the site where the instrument is used. Dental handpieces, ultrasonic scalers, air polishers, and air abrasion units produce the most visible aerosols. Each of these instruments removes material from the operative site that becomes aerosolized by the action of the rotary instrument, ultrasonic vibrations or the combined action of water sprays and compressed air.

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(Pippin et al, J Oral Max Surg 1987)

**Face Mask Efficacy:** The Use of surgical face masks has been advocated to protect clinicians from inhalation of aerosols containing organic and inorganic particulates. This study examined the ability of a 22 µm tracer particle to bypass the filtering capability of face mask material by peripheral marginal leakage of inspired air. For two popularly used face masks taped to a facial moulage, recovery of the tracer particle by an in vitro system was very low. When the masks were placed in the manner in which the product is commonly worn, however, significantly higher numbers of particles were recovered. Passage of inspired air around the periphery of two types of face masks appears to circumvent the masks' ability to screen airborne contaminants.

[https://www.joms.org/article/0278-2391\(87\)90352-1/pdf](https://www.joms.org/article/0278-2391(87)90352-1/pdf)

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(Micik et al. JDR, 1969):

Aerosol particles usually are less than 50 microns in diameter, are invisible, and remain airborne for long periods. Under the conditions of this study, dental procedures incorporating the use of water sprays or rotary instruments generated aerosols with significantly greater numbers of bacteria than were produced by all the oral activities surveyed. It appears appropriate to modify certain dental procedures or to use devices or technics such as special high-velocity air suction, that will reduce microbial aerosol production or dispersion during those procedures to levels comparable to those produced by group 1 oral activities such as breathing or speaking.

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(Bauman et al. J of Multidisciplinary Care 2018)

Aerosols are differentiated based on particle size: splatter (> 50 µm), droplet (≤ 50 µm), and droplet nuclei (≤ 10 µm). In dental settings, 90% of the aerosols produced are extremely small (< 5 µm). Splatter, being the larger particle, will fall until it contacts other objects (e.g., floor, countertop, sink, bracket, table, computer, patient or operator). Droplets remain suspended in the air until they evaporate, leaving droplet nuclei that contain bacteria related to respiratory infections. Droplet nuclei can contaminate surfaces in a range of three feet and may remain airborne for 30 minutes to two hours. Ultrasonic scalers and high-speed handpieces produce more airborne contamination than any other instrument in dentistry.

<https://decisionsindentistry.com/article/transmission-precautions-for-dental-aerosols/>

(Bauman, J Hospital Infection, 2006)

Significant **contamination of the operatory** occurred at all distances sampled when high-speed instruments were used (mean 970 colony-forming units/m<sup>2</sup> /h). The bacterial density was found to be higher in the more remote sampling points. The area that becomes contaminated during dental procedures is far larger than previously thought and practically encompasses the whole room. These results emphasize the need for developing new means for preventing microbial aerosols in dentistry and the protection of all items stored temporarily on work surfaces. This is especially important when treating generally ill or immunocompromised patients at dental surgeries in hospital environments.

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(Harte. JADA, Vol. 141 2010)

**PPE.** Because surgical masks protect the mouth and nose only from splashes, spray and spatter from large-particle droplets and not the smaller aerosol particles, they cannot be used when Airborne Precautions are indicated. When breathing with a surgical mask in place, much of the inhaled air comes in around the sides of the mask, along with airborne organisms. According to CDC's 2007 isolation guideline, HCP should don fit-tested N95 respirators approved by CDC's When HCP use respirators while treating patients with diseases requiring Airborne Precautions, they should use the respirators in the context of a complete respiratory protection program. This program should include training and fit testing to ensure an adequate seal between the edges of the respirator and the wearer's face.

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(Harrel and Molinari, JADA 2004)

As noted previously, if the ADA's recommendations for sterilization of instruments and treatment of water lines are followed, these major sources of potentially contaminated dental aerosols can be controlled. However, it should be recognized that the aerosol created by the interaction of coolant water and ultrasonic vibrations or by compressed air and rotary motion is visible to patients and dental personnel. This aerosol-cloud must be controlled to the greatest extent possible to reassure patients and dental personnel. It also should be recognized that contaminated aerosols are produced during dental procedures when there are little or no visible aerosols. As has been shown in the study of aerosol production by ultrasonic scalers when no coolant water was used, even in the complete absence of coolant water there is aerosolization of material from the operative site. During routine dental treatment, there is a strong likelihood that aerosolized material will include viruses, blood, and supra- and subgingival plaque organisms. At this time, it is impossible to determine the exact infection risk represented by aerosolized material. The potential for the spread of infection via an almost invisible aerosol, however, must be recognized and minimized or eliminated to the greatest extent feasible within a clinical situation.

The use of personal barrier protection such as masks, gloves and eye protection will eliminate much of the danger inherent in splatter droplets arising from the operative site. However, any infectious material that is present in a true aerosol form (particles less than 50 µm in diameter) or splatter that becomes re-airborne as droplet nuclei have the potential to enter the respiratory tract through leaks in masks and contact mucus membranes by going around protective devices such as safety glasses. A true aerosol or droplet nuclei may be present in the air of the operatory for up to 30 minutes after a procedure. This means that after a dental procedure if the operator removes a protective barrier such as a face mask to talk to a patient when a procedure is completed, the potential for contact with airborne contaminated material remains. Also, there is a

potential for an airborne contaminant to enter the ventilation system and spread to areas of the facility where barrier protection is not used.

During many dental procedures, the use of a rubber dam will eliminate virtually all contamination arising from saliva or blood. If a rubber dam can be used, the only remaining source for airborne contamination is from the tooth that is undergoing treatment. This will be limited to airborne tooth material and any organisms contained within the tooth itself. In certain restorative procedures such as subgingival restorations and the final steps of crown preparation, it often is impossible to use a rubber dam. The use of a rubber dam also is not feasible for periodontal and hygiene procedures such as root planing, periodontal surgery, and routine prophylaxis. This is of particular concern because periodontal procedures always are performed in the presence of blood and instruments such as the ultrasonic scaler, which has been shown to create the greatest amount of aerosol contamination, are used.

From a practical point of view, it is easiest to remove as much airborne contamination as possible before it escapes the immediate treatment site. The use of a high-volume evacuator, or HVE, has been shown to reduce the contamination arising from the operative site by more than 90 percent

It must be emphasized that no single approach or device can minimize the risk of infection to dental personnel and other patients completely. A single step will reduce the risk of infection by a certain percentage, another step added to the first step will reduce the remaining risk, until the risk is minimal. This can be described as a layering of protective procedures. This layering of infection control steps needs to be followed in reducing the potential danger from dental aerosols.

The dental team should not rely on a single precautionary strategy. In the reduction of dental aerosols, the first layer of defense is personal protection barriers such as masks, gloves and safety glasses. The second layer of defense is the routine use of an antiseptic preprocedural rinse with a mouthwash such as chlorhexidine. The third layer of defense is the routine use of an HVE either by an assistant or attached to the instrument being used. An additional layer of defense may be the use of a device to reduce aerosol contamination that escapes the operating area, such as a HEPA filter.

- Universal barrier precautions should be followed;
- A preprocedural rinse should be used before treatment;
- A rubber dam should be used where possible;
- An HVE should be used for all procedures.

DEVICE	ADVANTAGES	DISADVANTAGES
<b>Barrier Protection— Masks, Gloves and Eye Protection</b>	Part of “standard precautions,” inexpensive	Masks will only filter out 60 to 95 percent of aerosols, subject to leakage if not well-fitted, do not protect when mask is removed after the procedure
<b>Preprocedural Rinse With Antiseptic Mouthwash Such as Chlorhexidine</b>	Reduces the bacterial count in the mouth, saliva and air; inexpensive on a per-patient basis	Tends to be most effective on free- floating organisms; it will not affect biofilm organisms such as plaque, subgingival organisms, blood from the operative site or organisms from the nasopharynx
<b>High-Volume Evacuator</b>	Will reduce the number of bacteria in the air and remove most of the material generated at the operative site such as bacteria, blood and viruses; inexpensive on a per-patient basis	When an assistant is not available, it is necessary to use a high-volume evacuator attached to the instrument or a “dry field” device; a small-bore saliva ejector is not an adequate substitute
<b>High-Efficiency Particulate Air Room Filters and Ultraviolet Treatment of Ventilation System</b>	Effective in reducing numbers of airborne organisms	Only effective once the organisms are already in the room's air, moderate to expensive, may require engineering changes to the ventilation system

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