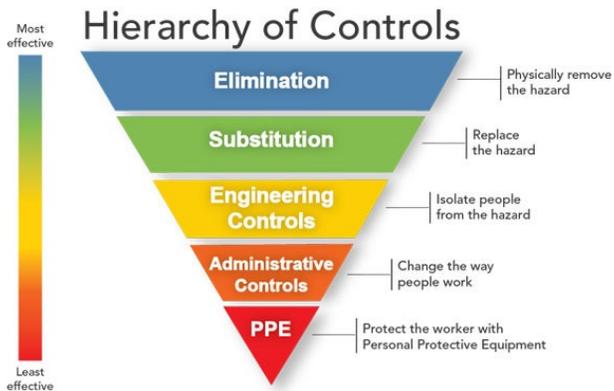


HIERARCHY OF CONTROLS OF COVID19 IN DENTAL PRACTICE

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Please note that this document has been created to assist dentists and dental team members in creating safer environments. These are ideas and suggestions that any provider can extrapolate to their own clinic. This is not a how-to guide, nor a one size fits all solution, it's a starting point. It is recommended that each provider continue to use their own best clinical judgement in accordance with local regulation in creating a safe working environment. CDC and OSHA recommendations should be adhered to (as always) at all times. Please contact the CDC or OSHA if you have questions or problems with your own practice.



Controlling exposure to occupational hazards is the fundamental method of protecting workers. Traditionally, a hierarchy of controls has been used as a means of determining how to implement feasible and effective control solutions.

One representation of this hierarchy appears in the triangle image shown to the left. The idea behind this hierarchy is that the control methods at the top of graphic are potentially more effective and protective than those at the bottom. Following this hierarchy normally leads to the implementation of inherently safer systems, where the risk of illness or injury has been substantially reduced.

NIOSH leads a national initiative called Prevention through Design (PtD) to prevent or reduce occupational injuries, illnesses, and fatalities through the inclusion of prevention considerations in all designs that impact workers. Hierarchy of Controls is a PtD strategy.

Elimination and Substitution

Elimination and substitution, while most effective at reducing hazards, also tend to be the most difficult to implement in an existing process. With regard to COVID19 this is essentially impossible. We cannot just remove the virus from society, will the virus out of existence or replace it with something less dangerous. This virus is here and it is what it is. This document will focus on the other layers of control that can be effective.

Engineering Controls

Engineering controls are favored over administrative and personal protective equipment (PPE) for controlling existing worker exposures in the workplace because they are designed to remove the hazard at the source, before it comes in contact with the worker. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. The initial cost of engineering controls can be higher than the cost of administrative controls or PPE, but over the long term, operating costs are frequently lower, and in some instances, can provide a cost savings in other areas of the process.

In dentistry examples of engineering controls for our practices include pre-screening patients 24 hours before their visit with CDC recommended questions, temperature screening of patients before entry to the clinic, and not allowing extraneous persons into the clinic.

Administrative Controls and PPE

Administrative controls and PPE are frequently used with existing processes where hazards are not particularly well controlled. Administrative controls and PPE programs may be relatively inexpensive to establish but, over the long term, can be very costly to sustain. In most settings these methods for protecting workers have also proven to be less effective than other measures, requiring significant effort by the affected workers. Basically, if your people aren't using them correctly, they aren't effective. **Fortunately**, dentists and dental staff excel at infection control and PPE and effective implementation of Administrative Controls and additional PPE will be relatively easy for them to accept. Implementation and adherence are essential.

The following document describes and details ways dental practices can achieve the following goals:

- I. **Engineering Control Goals:**
 - a. Keeping individuals who are actively sick with COVID19 out of the clinic.
 - i. Patients who are actively sick with COVID19 and require emergency dental care will most likely need to be treated in a hospital setting that the average dental practice cannot provide.
 - b. Assuring that anyone with possible symptoms with COVID19 defers treatment until verification of infection free status is obtained through their physician
 - c. Physical Changes to clinic building to assure safety of patient and staff
- II. **Administrative Control Goals:**
 - a. Maintaining clean hands for all in the clinic
 - b. Maintaining mouth and nose coverings for patients at all times outside of dental treatment in the operatory (we can't treat mouths with a mask on).
 - c. Maintaining social distancing
 - d. Addition of clinical equipment and tools to prevent possible spread of possible infection in asymptomatic patients
- III. **PPE Goals**
 - a. Protection of administrative workers with socially distanced or remote (phone/email) contact with patients.
 - b. Protection of clinical workers with close person-to-person contact with patients
 - c. Assuring that providers and staff do not bring germs home to their families.

Engineering Controls for the Dental Practice

Goals: Minimize risk of individuals with active or symptoms of COVID19 entering the clinic

- I. Patient screening
 - A. CDC Screening questions: Confirmation 24h before appointment. Questions apply to anyone needing to enter the clinic. The patient, and their driver if having a dental surgery requiring a driver.
 1. Have you traveled to any of these locations in the last 14 days?
 - China
 - Iran
 - Italy
 - Hotspots – (example: NYC, New Orleans, Detroit, hotspot near you)
 2. Have you had contact with anyone with confirmed COVID-19 in the last 14 days?
 3. Have you had any of these symptoms in the last 14 days?
 - Fever greater than 100.4F
 - Difficulty breathing
 - Cough
 4. Are you currently experiencing fever over 100.4F, difficulty breathing or cough?
 - B. If patient answers yes to questions 1 or 2 then instruct to call their primary care provider or State Department of Health for further direction. The patient is to be rescheduled until symptoms have resolved and their physician has cleared their quarantine time. If patients answer no to 1 and 2 but yes to 3 and 4, then recommend their appointment be rescheduled until 2 weeks after their symptoms resolve, and recommend to contact their physician if symptoms worsen or become severe. All answers to questions documented in patient chart with appropriate follow up (2 weeks, 1 month) to check status of patient.
 - C. No Extraneous people in the clinic. Only the patient and (if necessary) the parent or driver are to enter the clinic. Friends, family members or others can wait in the car or at home.
 - C. Clinic Preparation:

Goals: minimize touching of surfaces by multiple people, maximize barriers to disease transmission

 1. All external doors propped open if weather allows
 - a. Minimize touching of doors
 - b. Maximize airflow
 2. Windows open if weather allows
 - a. Maximize air flow
 3. If doors and windows are not able to be opened, consider device to help increase and purify airflow in the clinic.
 4. Plexiglass “sneeze Guard” at front desk if possible (may not be necessary if appropriate PPE is utilized or if all front desk activity will be performed remotely and no social interaction is occurring here)
 - a. If front office staff can work remotely (in consult room) then social distance will be maximized
 5. Hand sanitizer at entrance
 6. Frequent wiping of front office surfaces with disinfectant/soapy water. Bathroom fixture and door handles, countertops, etc.
 7. Remove magazines/toys from clinic to avoid multiple people touching the items

Administrative Controls for the Dental practice

Goals: further screen patients for symptoms to minimize risk of COVID patient entering clinic, limit social interaction

- I. Intake Administrative Controls: The Parking Lot or an assigned Area outside the clinic is now the Lobby

Goals: to minimize the risk of a symptomatic patient entering the clinic area

 - A. Temperature of all dentist and staff taken upon arrival to work.
 - B. Patients text/call when they have arrived. Give Business Team type of car (red Ford truck, etc.) Recommend arriving a bit early for in/out times
 - C. Patient will be told the amount due for the appointment and prepare it in the car. Either give cc # over the phone or prepare cash/check in the car
 - D. Either table set up outside to screen patients OR Clinical staff picks up their patient in the parking lot wearing appropriate PPE (as if they were getting them from the lobby). Patient also needs to be wearing face covering per Governor Polis.

- i. Staff picking up patient in car will use temporal thermometer to take temperature of patient in the car. If fever, notify patient, wait several mins and retake (sometimes temporal thermometers run high, or patient was warm from walking over.) If fever persists notify patient and reschedule.
 - ii. If there is a driver for the patient for a surgery who will need to enter the building, their temp should also be taken. No one gets in without a temperature taken. Document temperature in patient chart.
- E. Patient is brought into clinic by clinical staff. The patient will be required to use hand sanitizer at door or enter restroom to wash hands with soap and water. THEIR HANDS ARE MORE DANGEROUS THAN THEIR MOUTHS. The vast majority of transmission of this disease at this time appears to be touching your face with dirty hands.
- F. Patient is immediately brought into the designated treatment room. If cash/check payment then dropped at (ideally empty) front desk while walking by.

II. Clinical Administrative Controls

Goals: Minimize person-to-person interaction as much as possible, minimize aerosol as much as possible.

****According to CDC there are no clusters of viral transmission from dental offices, and there are no reports from Germany or Sweden where dentistry has not ceased that there are increases in sickness in dental personnel, and there have been no studies that say that any aerosol contains a viral load that is capable of infection, nor that saliva contains infectious levels of virus in asymptomatic patients. We understand that respiratory droplets from sick patients coughing, intubation of COVID19 patients, lung suctioning, etc are not the same as saliva aerosol in dental treatment, every caution that can be taken should be taken, our PPE is designed to protect us from the unknown.****

- a. Patient completes a 30 second rinse with 1% Hydrogen Peroxide to minimize viral transmission during treatment. Hydrogen peroxide 1% kills this virus
- b. Treatment completed with as much aerosol control HVE as possible. RDH use IvoryReleaf type suction on HVE, Dentist use Isolite/Rubber Dam/HVE
- c. During this time hand scaling is preferred but sometimes ultrasonic use is unavoidable. The patient can assist in holding additional HVE nearby if needed for extraoral HVE in addition to intraoral HVE.
- d. Treatment is completed. Patient washes their hands in operatory sink with soap and water while next recare visit scheduled, if more treatment needs to be scheduled with doctor the patient will be called as they enter their car to schedule the treatment. Receipt is either picked up at desk with newly washed hands, or email to patient.

Summary: IDEAL PERSON TO PERSON HUMAN INTERACTIONS ARE REDUCED TO 1-2 PER PATIENT. Their Clinical staff member and the Dentist (if needed). All other communication is remote.

PPE Controls For the Dental Practice

Goal: Follow CDC recommendations (as always). Adhere to OSHA standards (as always) at all times.

- I. Handwashing – our normal routine is likely fine. Before/after/between every patient PLUS extra. Use lotion in the evenings or glove-safe lotion during the day to prevent breaks in the skin barrier. Washing hands in view of the patient may help them feel more secure.
- II. Masks
 - i. Clinical staff – CDC Recommendations
 - 1. Best – N95 or KN95 NIOSH approved mask with eye protection
 - 2. Second option – ASTM3 or ASTM2 mask with face shield
 - ii. Nonclinical staff not interacting directly with patients
 - 1. Cloth or ASTM1 mask per order of Governor Polis
- III. Gowns – disposable gowns if possible, laundered gowns to prevent excess waste development. Soap and water kill this virus – it does not survive a washing machine with detergent. At this time it is recommended to have 1 gown per day unless it is wet or soiled.
- IV. Hair cover – disposable or laundered scrub caps
- V. Scrubs under gown
 - i. All scrubs laundered on site or sent to laundry service
 - ii. Work shoes stay at work. Disinfectant spray soles of shoes end of day
 - iii. Wash hands before leaving work

PPE/Procedures Risks

Procedure Risk

- **Highest Risk**
 - Anything that involves intra-oral drilling with handpiece
 - Surgical Extractions
 - Ultrasonic/Cavitron Use
 - Implant Placement
 - Endodontic therapy
 - Periodontal Surgery
- **Medium Risk**
 - Crown/Bridge Seat
 - Denture adjustments
 - Handscale with no Ultrasonic/Cavitron and prophy paste
 - Impressions
- **Low Risk**
 - Post-ops
 - Hygiene Exams
 - ER Screening
 - Orthodontic adjustments/delivery not involving dental handpiece
 - Consults

Corresponding PPE

HIGH RISK

- Gown - disposable - 1 per patient if possible
- N95 - CAN BE REUSED, see CDC Guidelines, store in brown paper bag at the office.
- Surgical mask (level 1/2/3) over N95 to keep N95 dry and unsoiled
- Surgical cap - washable - keep on all day in clinical areas
- Face Shield - clean between patients with soap and water

MEDIUM RISK

- Scrub Jacket or disposable/laundryable gown
- Surgical Mask
- Surgical cap
- Face Shield

LOW RISK

- Scrub Jacket
- Surgical Mask
- Surgical cap