E-BOOK

GUIDELINES FOR BEST PRACTICE IN BIOSAFETY AT THE DENTAL CLINIC

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#togetherstrong

#TogetherStrong

We, who work in Dentistry, know the importance of following safety procedures regarding prevention, protection and care.

The world has changed. For this reason, we started the #TogetherStrong movement: together with dentists working in health care to reinforce biosafety protocols and prepare ourselves for this new era.

In order to promote the safety of patients and dental workers, we created this manual of good biosafety practices in dental environments. The aim is to provide guidance to prepare the 4 essential counterparts in dentistry: CLINICS, DENTISTS, AUXILIARY STAFF and PATIENTS.

Count on us and together we will spread this message.

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INTRODUCTION

Dentists are responsible for adopting prevention and infection control measures to avoid or reduce as much as possible the transmission of microorganisms during any procedure in their practice. In this manual you will find basic orientations that must be followed. Nevertheless, dental care workers or providers may enforce even more stringent prevention and control measures, taking into account their individual and specific realities.

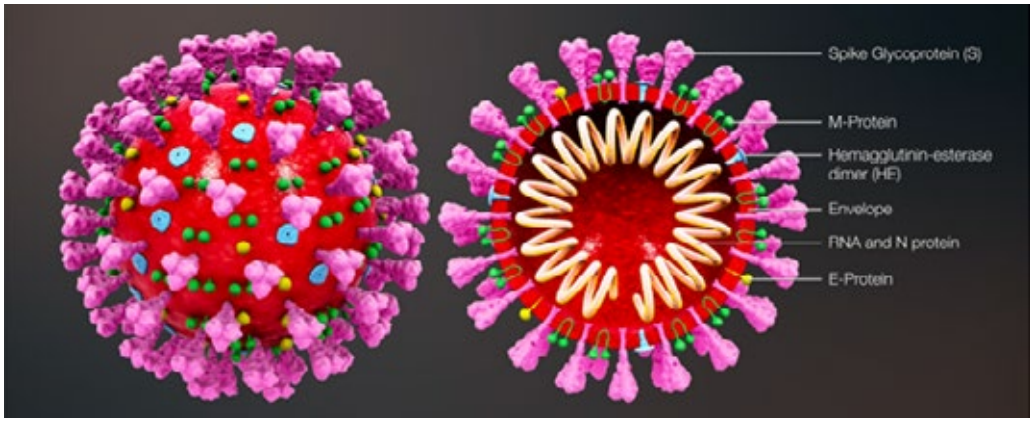
In 2009, after 36 thousand cases in 75 countries, the World Health Organization (WHO) declared H1N1 a pandemic. This is a diseased called by a new strain of the H1N1 Influenza A, which we already know, and mutated from animals (pigs) to start infecting humans (swine flu).

World Health Organization

WHO has recently declared another pandemic, this one caused by the SARS-CoV-2 virus. Compared to H1N1, there are similarities and differences in its transmission, how to fight the disease, and how to treat it. Just like the new coronavirus disease (also known as COVID-19), Influenza A was a respiratory disease transmitted by coughing and sneezing, by direct contact with an infected person, or by contact with respiratory secretions of infected persons. However, according to research, that virus was less contagious than that of COVID-19. The WHO claims that someone infected with H1N1 could infect between 1,2 and 1,6 other people, while a study published by the American Center for Disease Control claims that this rate is of 2,79 for the coronavirus disease [1].

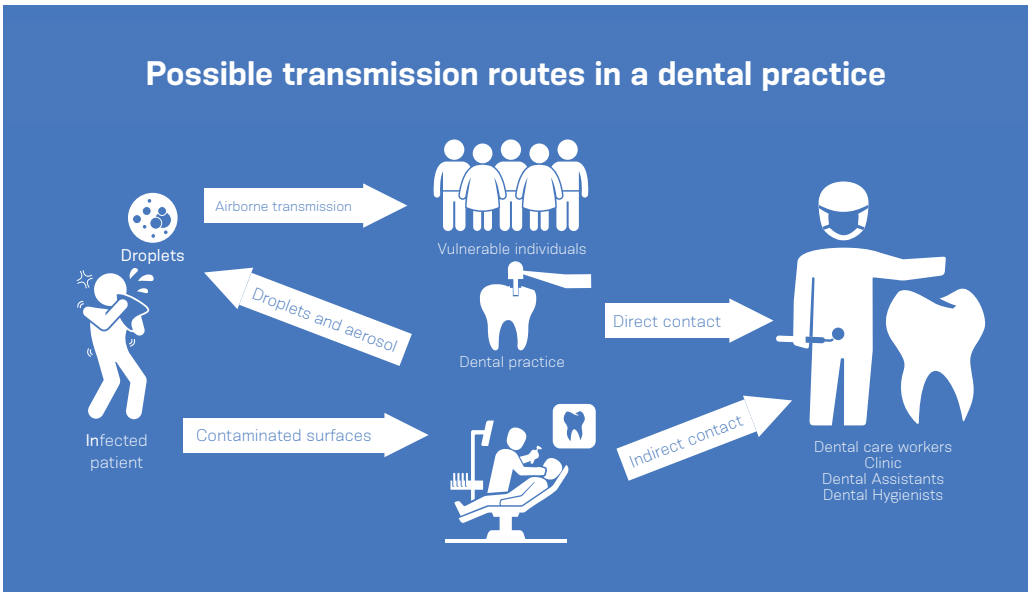
INTRODUCTION

The last pandemic served as a warning to the world about the dissemination of a disease like SARS-CoV-2 *(severe acute respiratory syndrome of coronavirus)* which quickly infected communities in several countries due to sneezing, coughing, droplet inhalation or indirect contact with nasal, oral, and eye mucosa. Dental workers play a crucial role in the prevention of this viral infection, because aerosol and droplets are the main transmission vectors [2]. For this reason, dental clinics must be an environment of great control and prevention of microbiological infections in general.

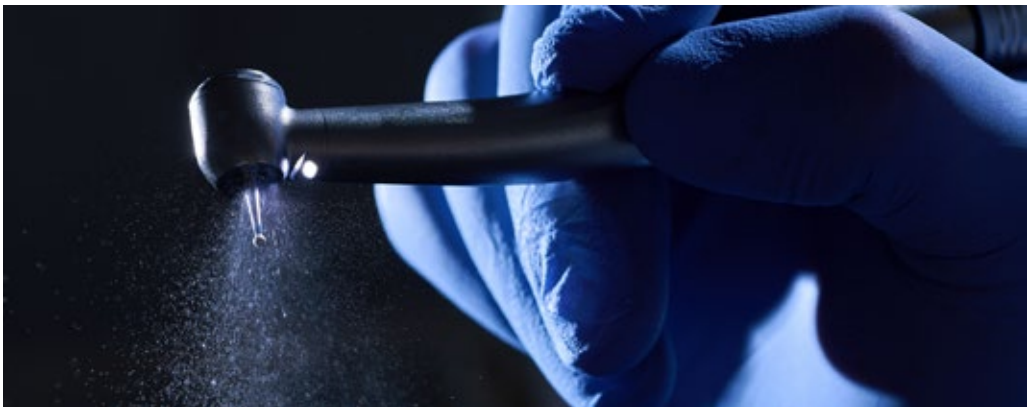


https://commons.wikimedia.org/wiki/File:3D_medical_animation_coronavirus_structure.jpg

Dental workers and patients may be exposed to pathological microorganisms, including viruses and bacteria that infect the oral cavity and the respiratory tract. Dental practices are at risk of infection due to face-to-face procedures and frequent exposition to saliva, blood, and other body fluids, and due to the use of cutting and piercing tools. Pathogens may be transmitted in dental environments through the inhalation of microorganisms that remain suspended in air for a long time, direct contact with blood, oral fluids, or other patient materials. It may also be transmitted when the conjunctival, nasal, or oral mucosa is in contact with droplets or aerosols containing microorganisms from an infected person, which travel short distances due to coughing or speaking without wearing a face mask. Moreover, it may be transmitted by indirect contact with contaminated tools or surfaces [2].



Many dental procedures produce aerosols and droplets (high speed hand pieces, triple syringes, ultrasound, etc) that may be contaminated with the virus. Therefore, droplets and aerosols are a cause for great concern in dental clinics and hospitals, because it is difficult to avoid the production of great amounts of aerosol and droplets mixed with patient saliva or even blood during the clinical practice of dentistry. Besides coughing and breathing from infected patients, dental tools such as handpieces use high-speed air to operate their turbines, and operate with water. When these devices are used in the patient's mouth, a great amount of aerosol and droplets mixed with patient saliva or blood are generated. These droplets and aerosols are small enough to remain suspended in air for a long period of time before falling into environment surfaces or entering the respiratory tract of other individuals.



High speed rotation pen generatingaerosol sprays

Moreover, droplets and aerosols containing microorganisms from an infected person may have contact with the conjunctival, nasal or oral mucosa of dental care workers and other patients. Working at a short distance from the patient's face, as well as coughing and engaging in mask-less conversation are reasons to apply efficient strategies to control infection and prevent the dissemination of diseases such as COVID-19.

Some viruses are controlled and prevented through vaccination, especially of health care workers, such as viral Hepatitis B. However, no vaccine for SARS-CoV-2 has been found yet. This virus has an average incubation period of 5 to 6 days, but there is evidence of incubation periods of up to 14 days. For this reason, quarantining people exposed to it for 14 days, even if they are asymptomatic, has been encouraged[3]. This virus may remain in the saliva of a contaminated individual for up to 24 days. After that, it is difficult to determine whether the person is infected or not [2]. For this reason, it is recommended that health care workers work as if all patients were infected. It should be noted that dental care workers are more exposed to the virus than patients, because during dental procedures patients are the ones who keep their mouth open, propelling aerosols. The best way to prevent any disease is to adopt practices that stymie the virus' propagation. This is why controlling environments that carry biological risk is part of the routine of all dental care workers.

SUMMARY

This manual of good biosafe ty practices in dental environments has been prepared with 4 essential counterparts in mind:

Click on the icons to access the content:

CLINIC

Precautions to be adopted in clinical environments

1.1 Standard precautions

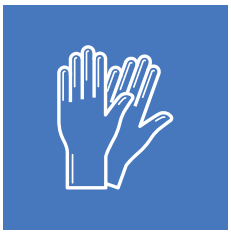
Your clinic should have the following basic elements available in order to follow standard precautions. These should be implemented with all patients, regardless of whether they are believed to be infected or not:

- **Have surgical masks** available, to cover mouth and nose. The masks should be easily accessible for patients and they should be offered instructions on how to use them.

- **Have alcohol based sanitizer** easily available for patients in several places within the clinic, from the reception to the consultation room.

- **Have disposable wipes** for nasal hygiene in case you or the patients needs it. After using them, dispose of them immediately and then wash your hands.

- **A sink and liquid soap in the reception, to wash hands and face:** wash your hand with water and soap, or apply 70% alcohol based sanitizer to them before and after having contact with any patient, after removing the gloves, and after having had contact with blood or secretions [4]. Wash your face with water and soap when you arrive at the clinic and between appointments.



- **Gloves:** wear gloves when there is risk of having contact with blood or mucus. Wear them immediately before having contact with the patient and remove them immediately afterwards, then wash your hands [4].

- **Goggles, face mask, and apron:** wear goggles and face masks or aprons when there is risk of having contact with blood or secretions in order to protect eye, mouth and nose mucosa, as well as clothes and body surface [4].

- **Disposable needles and syringes box:** dispose of needles and syringes in appropriate places without disconnecting them or covering them again[4].

- If possible, clinics should have a comfortable **private room** to isolate patients who may be infected, while they wait for their appointment or recover after treatment, if needed. If this room is not available, there should be a chair at a distance of 1 to 2 meters of all other chairs.

  The number of people waiting should be limited as far as possible that they can keep a reasonable distance. The clinic should be re organized to be maintained in such a way that patients can maintain a safe distance when entering or leaving the practice. Signs on the practice door should indicate this.

  Accompanying adults of adult patients should be asked to leave the practice.

1.2 Visual alerts

Visual alerts such as posters and signs may be placed at the entrance of dental clinics and other strategic locations (such as waiting rooms, parking lots and elevators) to offer patients and visitors instructions on the correct procedures.

CLINIC

When you **cough** or **sneeze, cover** your **nose** and **mouth** with your **elbow** or **a tissue**.

You should wash **your hands** whenever they seem **dirty**, as well as **before and after**:

- Having contact with any person;
- Going to the rest room
- Touching any surface;
- Wash your hands for at least 20 seconds.

1) Wet your hands with water

2) Use soap

3) Rub your palms

4) Rub your fingers

5) Rub your nails

6) Rub the back of your hands

7) Rub your thumb

8) Rub your wrist

9) Wash your hands with water

10) Dry your hands

11) Close the tap

12) Clean hands

Wash your face with water and soap for **20 seconds** after **washing your hands** and **before** your dental appointment

Patients and **health care workers** should **avoid** touching **their eyes, nose,** and **mouth** if their **hands are unwashed.**

Tie your **hair** and avoid wearing **earrings, rings,** and **necklaces.**

Download printable posters at:
www.dentistaspelasaude.com.br/posters

TIP:
Health care workers should wash their hands before examining patients, before dental procedures, after touching patients, after touching surfaces and tools that haven't been sanitized, and after touching oral mucosa, damaged or injured skin, body fluids, secretions, or excretions.

1.3 Precautions in the waiting room:

- Install a antibacterial disinfectant rug in the entrance of the waiting room;
- The waiting room for patients and visitors should have 1,2m^2 per person;
- Chairs should be at a distance of 1 meter from each other;
- Face masks and disposable tissues should be available in the waiting room;
- There should always be a pedal-activated trash bin;
- There should be dispensers to distribute alcohol based sanitizer or alcohol at 70% to encourage people in the waiting rooms to clean their hands;
- There should be simple tools to allow people to wash their hands and faces: a sink with a liquid soap dispenser, paper tissue holders, and trash bins with lids that can be opened without using one's hands;
- All environments should be well-ventilated;
- Eliminate, restrict or control the sharing of objects that patients might use, such as pens, sheets, telephones, and magazines;
- Nowadays, there are devices like tablets that may be sanitized with alcohol and thus be made available in waiting rooms
- The surfaces of all environments used by patients should be cleaned and sanitized daily, once or more as per requirement;
- Health care tools and equipments that may have been used to treat patients should be cleaned and sanitized;
- If a patient needs to be sent to another health care service, always inform that provider how to care for that patient.

1.4 Precautions in the consulting room:

Surfaces in the consulting room and other environments used by the patient should be cleaned and sanitized before clinical activities and between appointments.

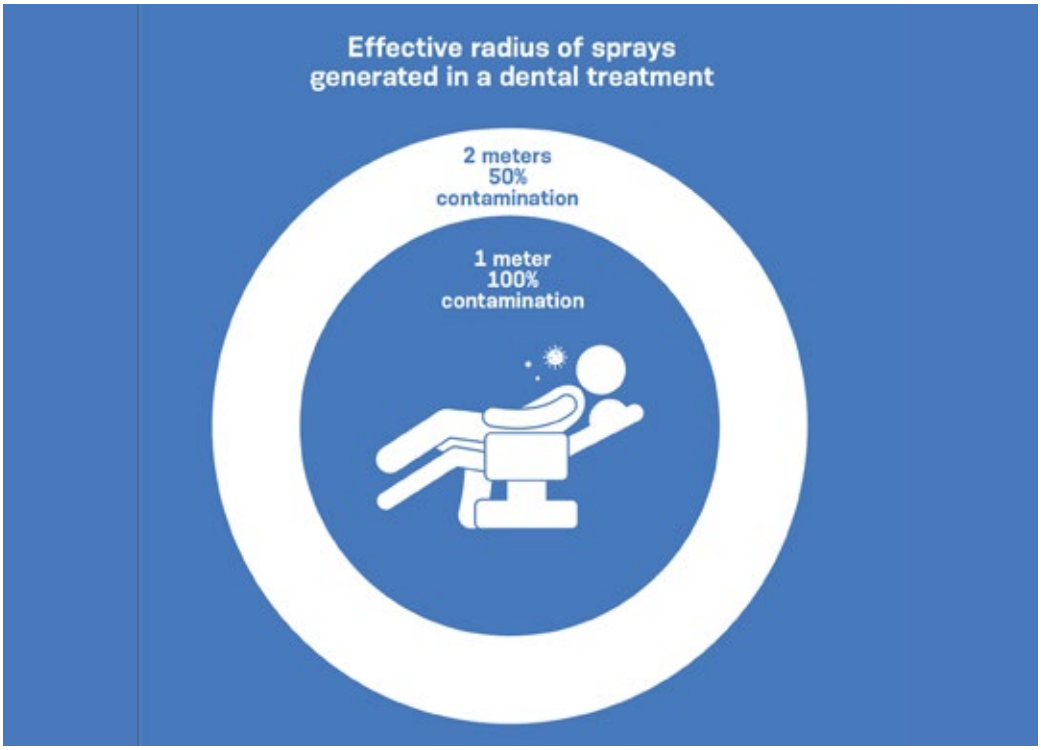
1.4.1 Dental disinfection agents for inanimate surfaces:

- 1% Sodium hypochlorite;
- 7-9% Quaternary ammonium;
- 70% alcohol.

70% alcohol and sodium hypochlorite require the prior cleaning of dirty surfaces with paper tissues, water, and detergent. Afterwards, that surface may be sanitized. Alcohol should be applied at least 3 times. These compounds are not recommended for use in acrylic, rubber, or plastic surfaces, because they make these surfaces harder and yellow. Quaternary ammonium, biguanide, and glucoprotamine should be applied at the same time as a surface is cleaned. They clean and sanitize simultaneously.

1.4.2 Precautions for chairs and desks in the consulting room:

The room should be closed and have at least 9m^2. Shared consulting rooms should follow a distance of at least 0,8 meters for desks and 1m to the side of each chair, and there should be a minimum distance of 2 meters between 2 chairs, as well as a physical barrier between the chairs if they are at the minimum distance [5]. Sprays caused by high speed rotation pens are propelled by up to 2 meters. For this reason, surfaces exposed to these aerosols must always be sanitized. Indeed, there is evidence that the coronavirus may be infectious in inanimate, ambient-temperature surfaces for up to 9 days [6,7].



MINIMIZING THE PRODUCTION OF AEROSOL:

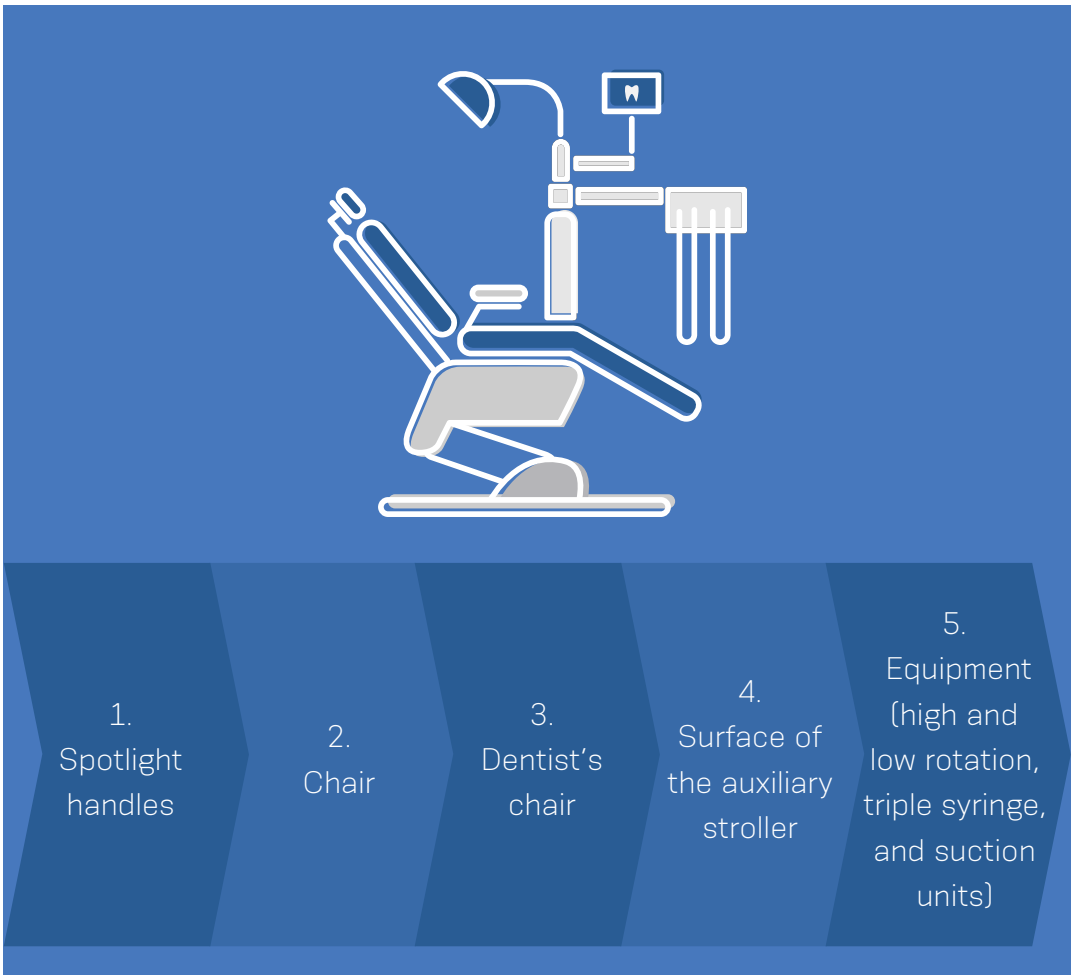
- Saliva must be constantly suctioned with a high volume vacuum pump and 4 hand dentistry.
- Intra-oral X-rays that may stimulate salivation and coughing should be used with precaution. Remember that panoramic x-rays or computerized tomographies avoid the problem.
- Avoid using the spray function of the triple syringe by pressing two triggers simultaneously.
- Preferrably, use cotton or gauze to dry.

1.4.3 Cleaning clinical environments:

The sanitizing of surfaces in clinical environments should follow these guidelines:

1º. start at the least contaminated area and proceed to the most contaminated one;
2º. start at the top and move downwards;
3º. start inside and move outwards.

Don't forget the air and water pipes, and the air conditioning filter. To clean the biofilm of the air and water pipes, use peracetic acid for the best sanitizing (it is effective even if there is organic material).



1.4.4 Places that should have mechanical barriers (PVC films or plastic bags):

- Manual triggers;
- Spotlight handles;
- Headrests;
- Dental chair arms;
- Dental chair rest;
- High speed handpieces;
- Triple syringe body;
- Tip of suction units.

Surfaces like benches and auxiliary strollers should be covered by disposable and impermeable barriers. Triple syringes should have disposable tips.

1.4.5 Sanitizing equipment and tools:

- Hand pieces without anti-reflux valves should be avoided in order not to contaminate the equipment's air and water system;
- All hand pieces (high and low rotation) should be decontaminated with enzymatic detergent, cleaned and sterilized[7];
- Tools need to be washed, and cleaned with enzymatic detergent, preferably in ultrasonic bowl (check the manufacturer's instructions), not conventional detergents, and finally sterilized, prior to being used.

1.5 Centrals to manipulate materials with two environments:

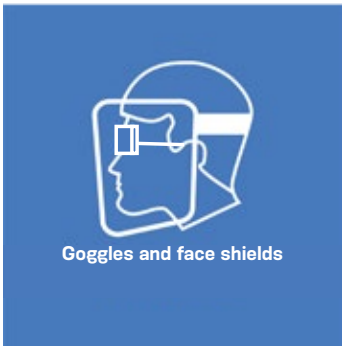
- Materials used for coating walls, floors, and ceilings of critical and semicritical environments should be resistant to washing and to sanitizers, and they should not have any visible cracks or scratches even after frequent use and cleaning.
- **Dirty environments:** Washing and decontamination room with a bench, a sink, and a counter in the clean area (material sterilization room), with a minimum area of 4,8 m^2. Receiving, cleaning, washing, and separating materials are considered "dirty" activities and, therefore, must take place in the proper, exclusive environment, according to adequate parameters, and with the use of the following PPE: plastic aprons, face mask, cap, closed shoes, goggles, and thick rubber gloves (not surgical ones). However, these materials should be allowed to be directly transferred between these environments and the remaining "clean" environments through a counter or similar object;
- **Clean environment:** Material preparation/sterilization/storage room, with a bench for sterilization equipment, cabinets to store material, and a counter to distribute material, with a minimum area of 4,8 m^2.

1.6 Cleaning clinical environments[5]:

Product	Concentration	How to apply	Level	Spectrum	Advantages	Disadvantages
Alcohol	Great Germicide at 70%	Rubbing in 3 different stages, spaced by the natural drying time, for a total of 10 minutes.	Medium	Tuberculicide, bactericide, fungicide, and virucide; is not sporecide.	Easy to apply, quick effect, compatible with metal objects, surfaces and anesthetic tubes.	Volatile, deactivated by organic material, inflamable, makes acrylics opaque, parches plastics and may damage the cement in optical tools; must be stored in ventilated areas
Glutaraldehyde	2%	Dipping for 30 minutes	High	Bactericide, fungicide, virucide and sporecide.	Is not corrosive, has quick effect, is a bactericide even in the presence of organic matter.	Irritates skin and mucosa, it's lifespan is reduced when effectively diluted for 14 to 28 days, depending on the formula.
Sodium hypochlorite;	1%	Dipping instrument for 30 minutes. Surfaces with organic matter. Apply for 2 to 5 minutes then clean.	Medium	Bactericide, fungicide, virucide and sporecide.	Quick effect, recommended for surfaces and non-metallic objects, as well as thermosensible objects.	Unstable, corrosive, deactivated by organic matter.
Peracetic Acid	0.2%	Dipping instruments for 10 minutes	High	Bactericide, fungicide, virucide and sporecide.	Does not produce toxic residues, is effective even with organic matter, produces quick effects in low temperatures.	Unstable when diluted. Corrodes some types of metal. This effect may be reduced by modifying the pH.

1.7 Personal Protection Equipment (PPE):

Impermeable lab coats and aprons, gowns, gloves, surgical masks, and surface protections: must be used during appointments and disposed after each appointment in a disinfectant bin. Must be used during direct contact with patients (physical exams) and removed during administrative moments of the appointment (e.g., writing and typing on a keyboard). Aprons should be closed in the back. Surface protectors should cover critical areas for the protection of patients, areas were tools are stored, and areas that would be difficult to clean if directly contaminated.



Goggles and face shields: must be used during appointments with patients with Influenza-like symptoms. Must be used during direct contact with patients (physical exams) and removed during administrative moments of the appointment (e.g., writing and typing on a keyboard). May be sanitized after each appointment and then reused.

Clothes and surgical scrubs: should be dipped in a sodium hypochlorite solution (white clothes) or Lysoform® or similar disinfecting agent (colorful clothes), then washed separately with water and soap. Should be worn by dental workers who have direct contact with patients and patients who go through invasive procedures.

Facial Respirators (N95): should be worn by health care workers whose tasks generate aerosols (manipulating airways or invasive exams), and may be swapped after each appointment.

What mask should I wear?

SURGICAL MASK

Used routinely and used by patients suspected or infected with COVID-19, as long as no procedures that generate aerosols are carried out. Used alongside the face shield;

N95 MASK

Used during procedures that generate aerosols with patients who have or are believed to have COVID-19. Used alongside the face shield. Only reuse in exceptional circumstances (maximum 4-5 times). Store for 4 days in a well-ventilated location before reusing. Do not touch the outer part of the mask when reusing it. Use new gloves to touch the side bands.

CLOTH MASKS

Their use is not recommended by the WHO under any circumstances. The same applies to homemade masks.

1.8 Architectural Structure [5]:

Coating materials, ceramic or not, must have a water absorption rate of 4% or lower when used in critical areas. Grouting pieces, when needed, must use material with the same absorption rate. Using cement without any antiabsorbent additives to grout ceramic pieces or similar objects is not recommended nor for the walls, not for the floors of critical areas.

Epoxy, PVC, polyurethane or other coatings intended for wet areas may be used in critical areas, floors, walls, and ceilings, as long as they are resistant to washing and to the use of sanitizers and they are not applied with brushes.. When applied to the floor, they must also be resistant to abrasion and to impacts.

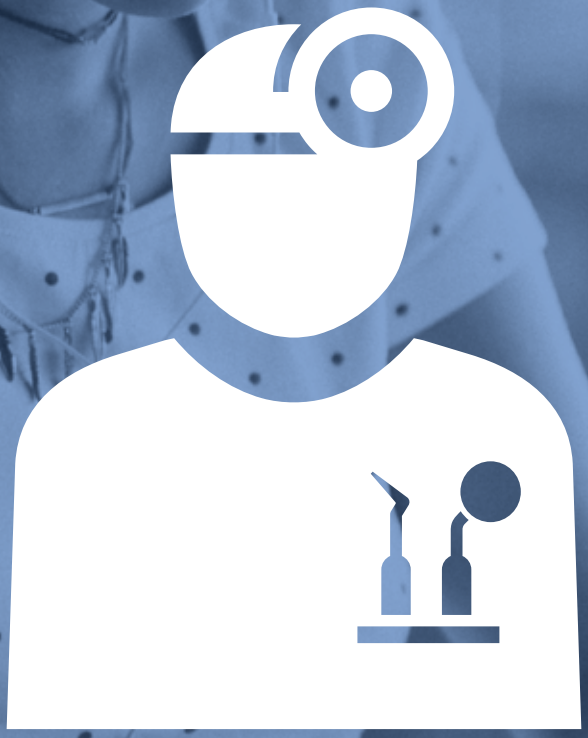
The use of removable dividers is not recommended in critical areas. However, pre-fabricated walls may be used as long as they have a monolithic finishing after installation. Dividers may only be used in semicritical areas if they are also resistant to washing with water and soap, and to sanitizing. There should be no visible piping on the walls and ceilings of the critical and semicritical areas. When these are not built-in, they must be protected throughout their entire extension by materials that are resistant to impacts, washing, and sanitizers.

The junction between the skirting and the floor must be made in such a way that corners can be completely cleaned. Round-shaped skirting are difficult to build and to clean. Extra attention should be paid to the junction of the skirting and the wall, so that both are aligned, in order to avoid the common skirting ledges where dust accumulates.

Ceilings in critical areas must be continuous and the use of false removable ceiling plasters, which interfere with the cleaning, is prohibited. In other areas, these ceiling plasters may be used, including for maintenance reasons, as long as they are resistant to the cleaning and sanitizing processes when used in semicritical areas. The use of protective film on the glasses or brise soleils on the facade is recommended to protect against the sun and reduce the amount of dust gathered. The use of blinds is allowed in dental care services, but its cleaning must be extra rigorous.

DENTIST

Precautions to be adopted by the Dentist



2.1 Personal protection care

HEALTH CARE WORKERS
(ONE WHO ASSIST PATIENTS AT A DISTANCE OF 1 METER OR FEWER)

- Wash your hands with water and liquid soap OR a 70% alcohol;
- Wear goggles or a face shield;
- Wear a surgical mask;
- Wear an apron;
- Wear surgical gloves;
- Wear a gown.

2.2 Routine

1. Sanitize shoes with the antibacterial disinfectant rug at the entrance upon arriving every day.
2. Check body temperature and if it is above 37.8 degrees Celsius, check if a flu vaccine was taken at least 10 days ago, and go back home;
3. Remove rings, necklaces, earrings and other accessories. Wash hands and face with water and soap. Sanitize your mobile phone with disposable tissues using 70% alcohol. Disinfect bags that go inside the clinic using a 70 alcohol spray. All other bags should be stored in a locker. Whenever you need to handle those bags, don't forget to wash your hands with water and soap appropriately;
4. Wear shoe covers comprised of 30 grams of polypropylene;
5. Wear adequate-sized gowns comprised of 30 grams of polypropylene, ensuring that your hair and ears are completely covered. Wear long-sleeved lab coats/aprons comprised of 30 grams of polypropylene with elastic cuffs and collar. 3/4 length, until the middle of the shin, closed behind, and with shoulder straps;.
6. Wear N95 face masks and face shields for appointments that result in a lot of aerosol. To increase the shelf life of N95 masks, you may cover them with a surgical mask. For appointments that do not result in aerosols, wear a surgical mask with 3 filters[8]. Don't forget that viruses remain suspended in aerosol, so for your own safety you should not remove the mask inside the clinic.

DENTIST

SURGICAL MASK

Must be worn by **all workers involved in clinical appointments,** be replaced **after each appointment or after every 3 to 4 hours** in the clinic.

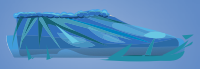
Patients with flu-like symptoms should wear a mask as soon as **they are identified**.

7. Wear goggles with plastic straps or that may be closed from the side.
8. During appointments in the clinic, wear latex or vinyl gloves, and whenever you remove the gloves, wash your hands again and dry them with disposable tissues.
9. During surgeries, hands should be surgically degermed with 2% chlorhexidine, then dried with a sterile towel. During surgeries, surgical scrubs should be worn with an impermeable lab coat/ surgical apron on top and sterilized surgical gloves;

CLINICAL RECOMMENDATIONS

Alcohol Based Sanitizer

Thermometer

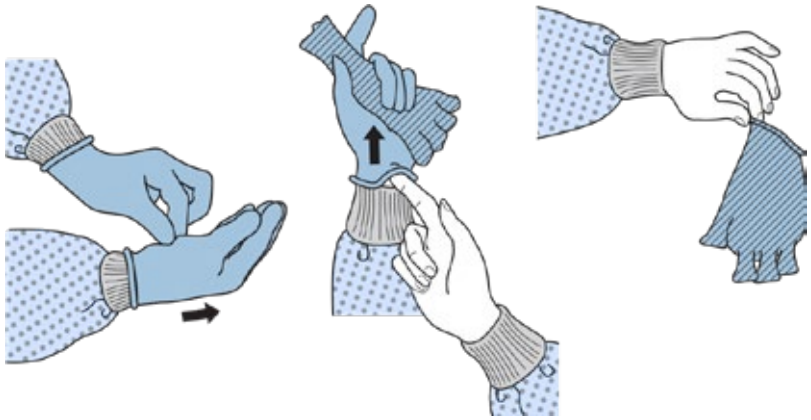


Shoe covers

2.3 Removing personal protection [9] (removing PPE):

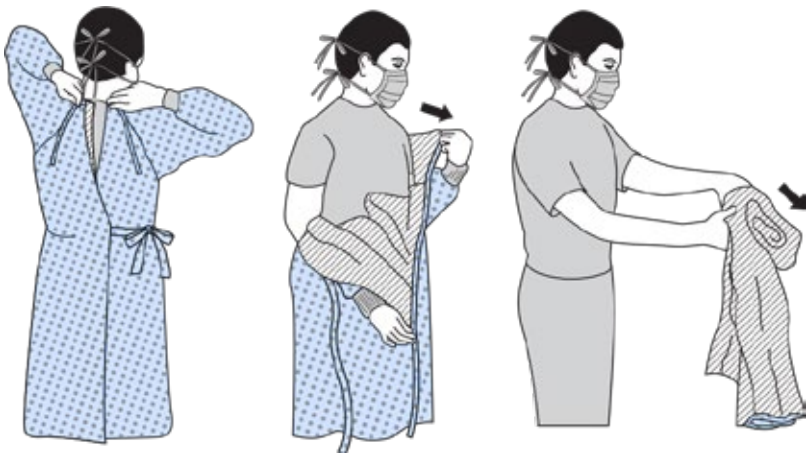
- This procedure is extremely important to avoid possible contamination of health care workers;

1. Remove the gloves;

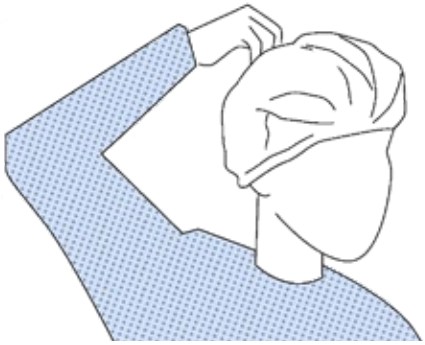


2. Afterwards, remove the face shield. Start by removing it from behind;

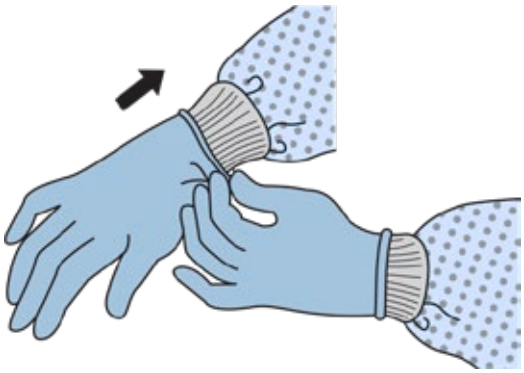
3. Remove the lab coat/apron by pulling it from your shoulders;



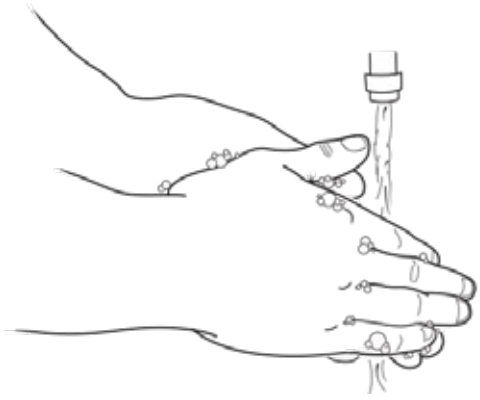
4. Remove the gown first, in a single frontward movement, and the mask, by the lateral strips, avoiding contact with the contaminated area;



5. To disinfect the face shield, use new gloves;



- Always wash your hands and face at the end of the process, and wash your hands after each step (or alcohol based sanitizer).



URGENT APPOINTMENTS OF PATIENTS WITH COVID-19

- In cases of irreversible pulpitis in patients with COVID-19, the pulp should be exposed under absolute isolation with manual chemical-mechanical methods if possible;
- In case of injury to the soft tissue of patients with COVID-19, sutures should preferably be made with absorbent strings;
- Any lesion should be slowly watered to avoid pulverization.

2.4 Precautions when leaving the clinic or arriving home

Leave bags, keys, and other personal objects in a box at the entrance of your house.

When going back home, do not touch anything without washing your hands first.

Take off your shoes.

Sanitize your mobile phone and your goggles with 70% alcohol.

Remove your clothes and put them in a bag inside the dirty clothes basket. Bleach. It is recommended to use at least 60°.

Shower and wash the most exposed areas, like hands, fists, neck, and face, really well.

Rinse your mouth for 01 minute with Hydrogen Peroxide 1% , followed by gargle.

AUXILIARY STAFF

Precautions to be adopted by the auxiliary staff

3.1 General precautions of the dental staff

3.1.1 Auxiliary staff (those who assist patients at a distance of 1 meter or fewer):

- Wash your hands with water and soap OR a 70% alcohol based sanitizer;
- Wear goggles or a face shield;
- Wear a surgical mask;
- Wear an apron;
- Wear surgical gloves;
- Wear a gown.

3.1.2 SUPPORT staff: RECEPTION AND SECURITY (those who need to be within at least 1 meter from other people):

- Wash your hands with water and liquid soap OR a 70% alcohol based sanitizer;
- Practice social distancing (at least 1-2 meters from patients);
- Wear a surgical mask.

Observation: replace the mask if it is wet or dirty.

3.1.3 SUPPORT STAFF: HYGIENE AND CLEANING THE ENVIRONMENT (when cleaning the isolation room/area)

- Frequently wash your hands with water and soap OR a 70% alcohol based sanitizer;
- Wear a gown;
- Wear goggles or a face shield;
- Wear a surgical mask;
- Wear an apron;
- Wear long rubber gloves;
- Wear long impermeable boots.

3.2 Precautions for auxiliary staff:

- When booking an appointment, instruct patients and those accompanying them to inform the reception whether they have had any flu-like symptoms (such as coughing, a running nose, fever, or difficult breathing), and to take appropriate preventive measures like wearing a surgical mask when they enter the clinic, if possible.

- Keep a distance of at least 1-2 meter from patients who are visibly infected and wear a disposable mask only when near patients.

- Avoid contact with patient secretions. When disposing of the patient's garbage, wear disposable gloves.

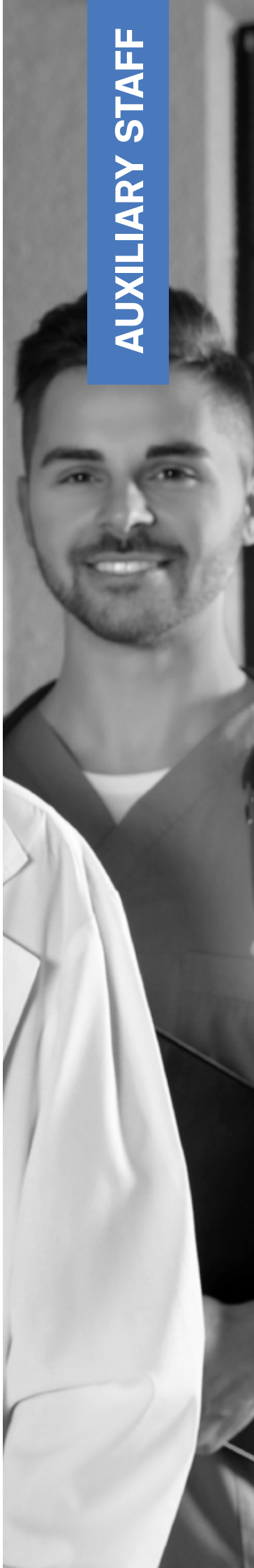
- Workers should frequently wash their hands with water and soap, or clean them with alcohol based sanitizer, especially after touching objects or other people, or after using the rest room.

- If the patient is accompanied, their company should be instructed to not enter clinical environments unless needed.

- Workers who are directly involved in clinical appointments in closed spaces, and who touch and examine patients, must wear PPE (gowns, masks, aprons, gloves, and goggles). These PPE must be changed after every appointment, except for the goggles.

3.3 Clinic auxiliary staff routine:

1. Sanitize shoes with the antibacterial disinfectant rug at the entrance upon arriving every day.
2. Check body temperature and if it is above 37.8 degrees Celsius, check if a flu vaccine was taken at least 10 days ago, and go back home;



AUXILIARY STAFF

3. Before entering the clinic, remove rings, necklaces, earrings and other accessories, store personal belongings in your locker, wash your hands with water and soap in the rest room, sanitize your mobile phone with tissues and 70% alcohol. Sanitize any bags that go inside the clinic using a 70% alcohol spray. Whenever you need to handle those bags, don't forget to wash your hands with water and soap appropriately;

4. Wear shoe covers comprised of 30 grams of polypropylene when entering clinical environments;

5. Wear adequate-sized gowns comprised of 30 grams of polypropylene, ensuring that your hair and ears are completely covered. Wear long-sleeved lab coats/aprons comprised of 30 grams of polypropylene with elastic cuffs and collar. 3/4 length, until the middle of the shin, closed behind, and with shoulder straps;.

6. Wear N95 face masks and face shields during appointments that result in a lot of aerosol. For appointments that do not result in aerosols, wear a surgical mask with 3 filters[8]. Don't forget that viruses remain suspended in aerosol, so for your own safety you should not remove the mask inside the clinic.

7. Wear goggles with plastic straps or that may be closed from the side.

8. During appointments in the clinic, wear latex or vinyl gloves, and whenever you remove the gloves, wash your hands again and dry them with disposable tissues. If necessary, wear disposable plastic gloves.

9. During surgeries, hands should be surgically degermed with 2% chlorhexidine, then dried with a sterilized surgical swabs. During surgeries, surgical scrubs should be worn with an impermeable lab coat/surgical apron on top and sterilized surgical gloves;

10. When washing tools, wear thick domestic red cloves. When boxing them, wear blue ones, and when sanitizing, yellow ones;

AUXILIARY STAFF

11. After each appointment, wear thick gloves to remove the tools from the surgical desk, then place them inside the tapware to be transported to the sterilization central;

12. If the clothing has been contaminated by organic material, it must be immediately replaced and disposed of at the hospital waste.

13. After work, remove shoe covers, gloves (without touching their external side), aprons, gowns, and masks, and dispose of them at the hospital waste. Protection goggles must be placed inside a recipient with sanitizing solutions. N95 masks should be disposed at the hospital waste if they are dirty or wet. Otherwise, they may be placed at a previously disinfected location to be reused. Remember not to touch the external surface of the mask.

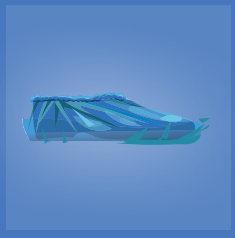
14. Wash your hands with water and soap correctly, dry them with sterilized paper tissues, sanitize with 70% alcohol based sanitizer, let them dry, collect your belongings at the locker, and go back home. If your locker is shared with another worker, sanitize it before leaving.

15. If a patient needs to be sent to another health care service, always inform that provider how to care for that patient.

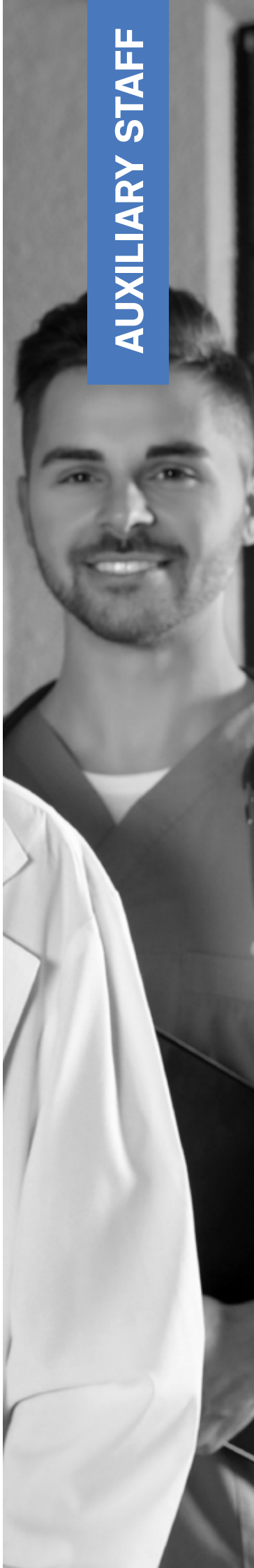
CLINICAL RECOMMENDATIONS

Alcohol Based Sanitizer

Thermometer



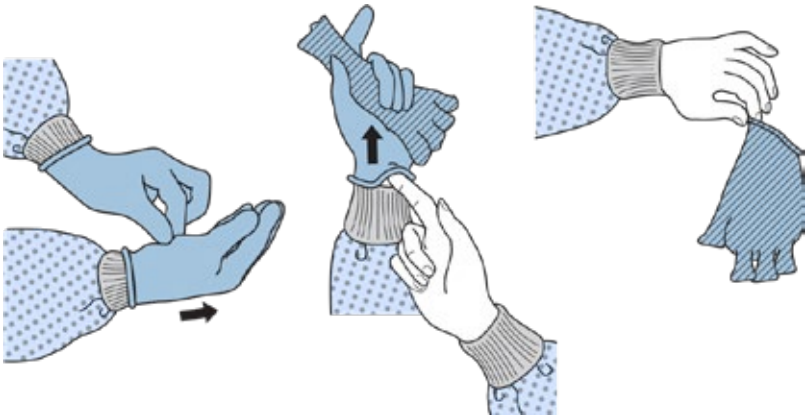
Shoe covers



3.4 Removing personal protection [9] (removing PPE):

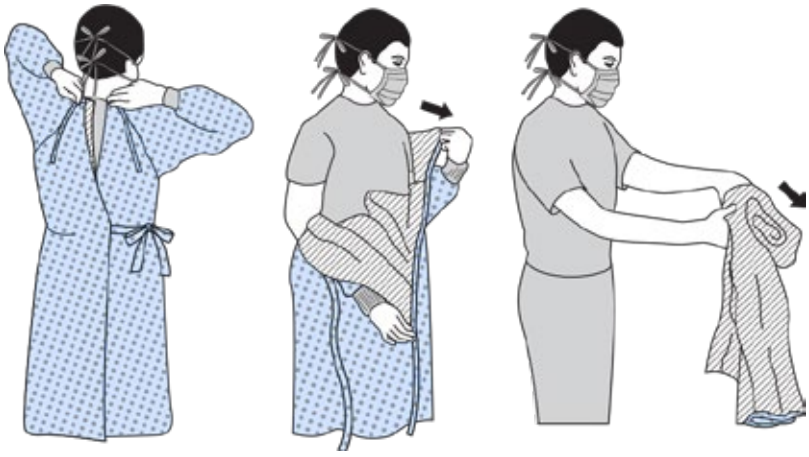
- This procedure is extremely important to avoid possible contamination of health care workers;

1. Remove the gloves;

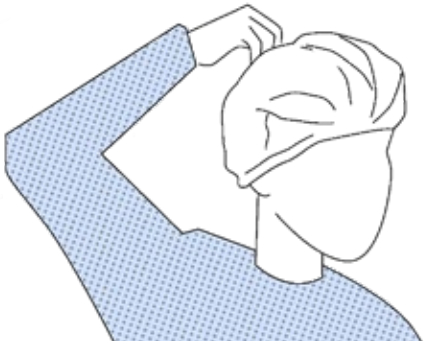


2. Afterwards, remove the face shield. Start by removing it from behind;

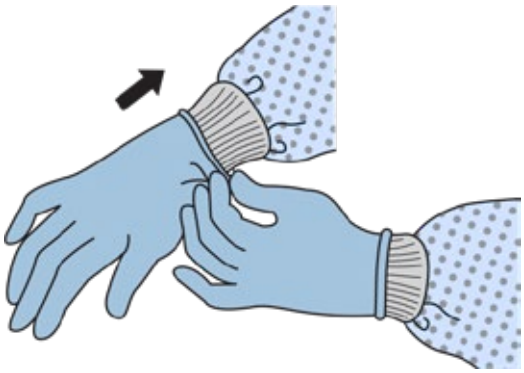
3. Remove the lab coat/apron by pulling it from your shoulders;



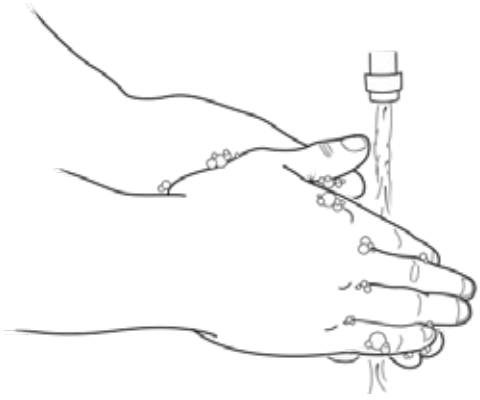
4. Remove the gown first, in a single frontward movement, and the mask, by the lateral strips, avoiding contact with the contamined area;

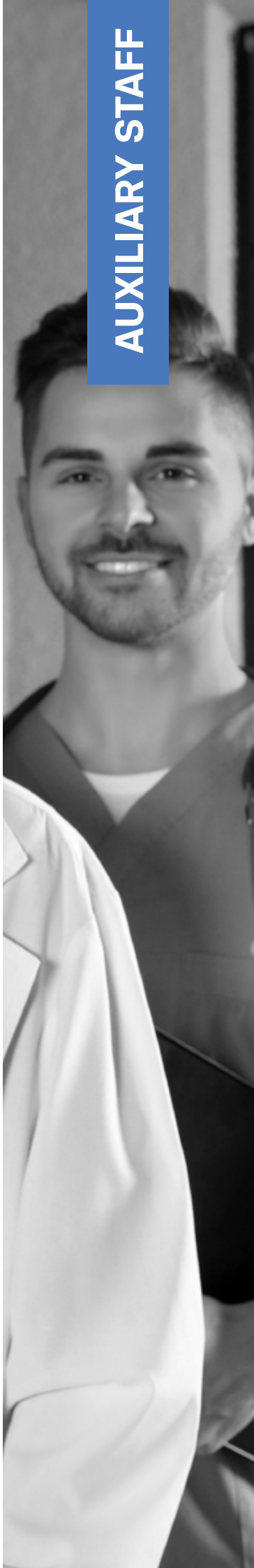


5. To disinfect the face shield, use new gloves;



- Always wash your hands and face at the end of the process, and wash your hands after each step.





AUXILIARY STAFF

3.5 Precautions when leaving the clinic or arriving home:

Leave bags, keys, and other personal objects in a box at the entrance of your house.

When going back home, do not touch anything without washing your hands first.

Take off your shoes.

Sanitize your mobile phone and your goggles with 70% alcohol.

Remove your clothes and put them in a bag inside the dirty clothes basket. Bleach. It is recommended to use at least 60°.

Shower and wash the most exposed areas, like hands, fists, neck, and face, really well.

Rinse your mouth for 01 minute with Hydrogen Peroxide 1%, followed by gargle

PATIENTS

You play a crucial role as a health care worker in orienting and explaining to patients on how to prevent virus propagations and contagious diseases. Explain and calm your patients by telling them that dentists are trained to work in high biological risk environment.
We have compiled recommendations you can share with patients so that the appointment is safe for them and you.

PATIENTS

4.1 General precautions patients should take when arriving at a dental clinic:

- Instruct patients that if they have flu-like symptoms or a cough, they should wear **a face mask** before leaving their homes and follow the following breathing etiquette:
  - Whenever you cough or sneeze, cover your nose and mouth with your elbow or a tissue;
  - Use a disposable tissue to clean your nose (dispose of it immediately after using, then wash your hands);
  - Avoid touching their eyes, nose, and oral mucosa;
  - Wash their hands.

- **Washing your hands and face:** hands and face should be washed with water and soap for 20 seconds.

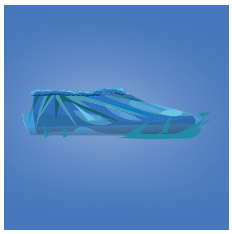
- If necessary, sanitize the hands with **alcohol based sanitizer**.

- **Do not touch your face**.

- **Thermometer**: request someone to check your body temperature.

- Tie your **hair** and avoid wearing **earrings, rings, and wristbands**.

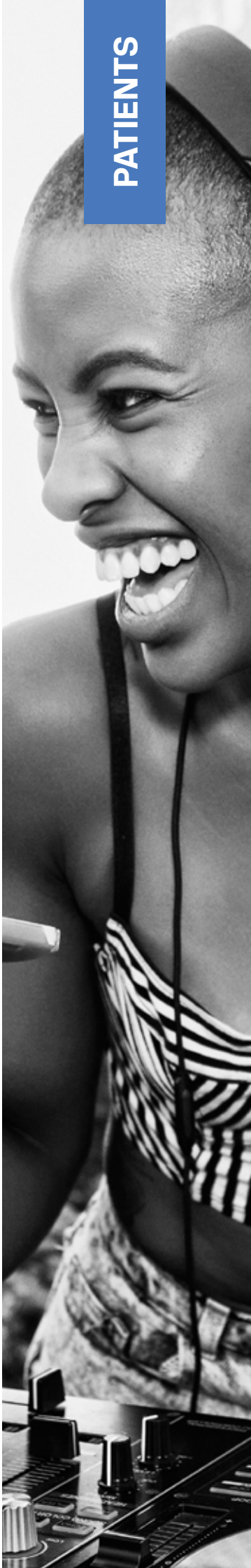
- Bags: check if the clinic offers safe storage in the waiting room, or leave them with someone. If you decide to enter the clinic with your bag, it is recommended that you sanitize it with 70% alcohol spray.



- Wear **shoe covers** , which are provided by the clinic (heels make it difficult to use this cover)

4.2. General precautions for patients and those accompanying them when arriving at a dental clinic

1. Patients and those accompanying them should be instructed to immediately inform the reception whether they have had any flu-like symptoms (such as coughing, a running nose, fever, difficult breathing), and should take appropriate preventive measures like wearing surgical masks as soon as they enter the clinic (surgical masks should be available at the entrance, otherwise, a patient with flu must request them). Practice social distancing;
2. It is recommended that the patient sanitize their shoes at the clinic entrance using the antibacterial disinfectant rug;
3. Wash your hands with water and soap for 20 seconds, dry them with disposable tissues, and sanitize the hands with 70% alcohol based sanitizer. Let them dry naturally. After sanitizing, do not touch anything else, including your mobile, which should remain off.
4. As soon as the patient enters the clinic, an attendant should check their body temperature with a digital infrared thermometer and update their medical history (even if it is a return patient, always ask about viral symptoms or if any relative, friend, or acquaintance has had any symptoms). If the patient's temperature is above 37.8 degrees Celsius, they should be provided with a face mask and instructed about possible symptoms, then they should return home, rest, and seek medical care.



PATIENTS

5. When entering the clinic, remove rings, wristbands, and other accessories. Turn off mobile phones and place them away, sanitize bags with 70% alcohol spray.

6. Wear shoe covers comprised of 30 grams of polypropylene;

7. As the virus is sensitive to oxidation, it is recommended to do a pre-surgery antisepsis [2] 1% hydrogen peroxide in order to reduce viral loads. Chlorhexidine does not seem to be effective. This procedure should take place after the consistent reduction of residual saliva through continuous pumping. It is recommended that oxidizing compounds be used exclusively prior to procedures. It is not recommended that they be used continuously by patients. Pre-procedure rinses (15mL of the solution for 30 seconds) should take place when the patient is conscious. Do not use a spittoon. Use the same sink that had been used for washing the hands and face.

8. Give the patient a 30 gram polypropylene cap and instruct them to fully cover their hair and ears.

9. Give the patient a 20 gram polypropylene apron with long elastic sleeves, waist-high shoulder straps that is closed in the back;

10. Instruct patients to remove the shoe cover when leaving the clinic, taking care not to touch the sole or the shoe, remove the gown without touching its external surface, and remove the apron, then place all of them in the hospital waste.

11. Then, they should return to the restroom to wash their hands with water and liquid soap, dry them with disposable tissues and sanitize the hands with 70% alcohol based sanitizer. They should wait for their hands to dry before going home safely.

4.3. General precautions when arriving home

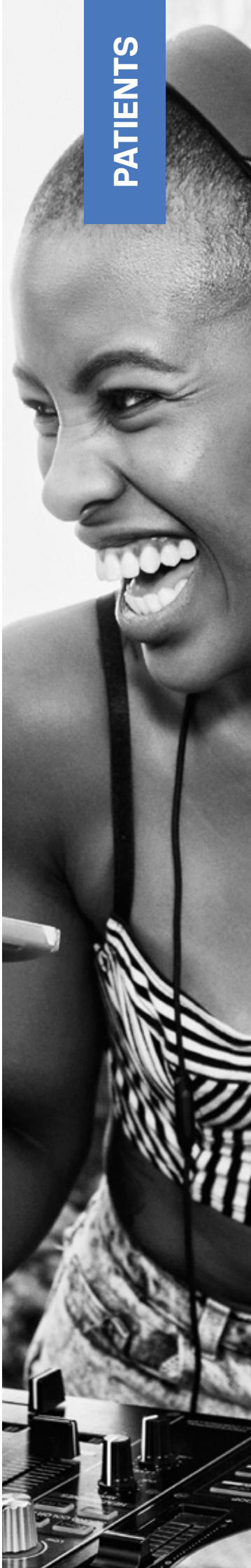
Instruct patients to follow these procedures when arriving home:

4.4. Dental care to patients with acute viral symptoms

There is high risk of virus transmission in dental care, due to the high viral load present in high airways and due to likelihood of exposure to biological material in aerosols generated by procedures.

Especially during the COVID-19 outbreaks, it is recommended that dental procedures be restricted to urgent cases, which include: uncontrolled bleeding; facial celulitis or bacteria diffused in soft tissue, intra-oral or extra-oral infection with swelling that may compromise the patient's airways; and trauma involving facial bones that may compromise the patient's airways. Urgent cases are those of extreme pain or risk of systemic deterioration of the patient's condition in a short amount of time, and should also be treated.

Please find below guidelines to help decision making and identifying these cases:



EMERGENCY
(Situations which increase the patient's death risk)

- Uncontrolled bleeding.
- Cellulitis or diffuse bacterial infections leading to intra-oral or extra-oral edemas, and potential risk of damage to airways;
- Facial bones trauma, which may damage the patient's airways.

URGENT
(situations which require priority care but do not increase the patient's death risk)

- Acute dental pain (Pulpitis).
- Pericoronitis.
- Alveolitis.
- Dental or periodental abscesses.
- Dental fractures that lead to pain or trauma in soft oral tissue.
- Dental care needed for another critical medical procedure.
- Cementation fixed prosthodontics or crowns.
- Biopsies.
- Adjustments of orthesis and prosthesis that cause pain and compromise chewing function.
- Finalizing the treatment or changing intracanal medication.
- Removal of extensive dental caries or restorations that cause pain.
- Treatment of tissue necrosis.
- Mucositis.
- Dental trauma with avulsion or luxation.

1.Frieden TR, Lee CT. Identifying and interrupting superspreading events—implications for control of severe acute respiratory syndrome coronavirus 2. Emerg Infect Dis. 2020 Jun [date cited]. https://doi.org/10.3201/eid2606.200495

2.Peng X, Xu X, Li Y, Cheng L, Zhou X, Ren B. Transmission routes of 2019-nCoV and controls in dental practice. Int J Oral Sci. 2020 Mar 3;12(1):9.

3.Backer JA, Klinkenberg D, Wallinga J. Incubation period of 2019 novel coronavirus (2019-nCoV) infections among travellers from Wuhan, China, 20-28 January 2020. Euro Surveill. 2020 Feb;25(5).

4.Agência Nacional de Vigilância Sanitária. Nota técnica gvims/ggtes/anvisa nº 04/2020 orientações para serviços de saúde: medidas de prevenção e controle que devem ser adotadas durante a assistência aos casos suspeitos ou confirmados de infecção pelo novo coronavírus (sars-cov-2). (updated 21/03/2020). Available at: http://portal.anvisa.gov.br/documents/33852/271858/NOTA+TÉCNICA+Nº+05-2020+GVIMS-GGTES-ANVISA+-+ORIENTAÇÕES+PARA+A+PREVENÇÃO+E+O+CONTROLE+DE+INFECÇÕES+PELO+NOVO+CORONAVÍRUS+EM+INSTITUIÇÕES+DE+LONGA+PERMANÊNCIA+PARA+IDOSOS%28ILPI%29/8dcf5820-fe26-49dd-adf9-1cee4e6d3096. Access on: April 05, 2020.

5.Agência Nacional de Vigilância Sanitária. Serviços Odontológicos Prevenção e Controle de Riscos (Versão 1.1). http://portal.anvisa.gov.br/resultado-de-busca?p_p_id=101&p_p_lifecycle=0&p_p_state=maximized&p_p_mode=view&p_p_col_id=column-1&p_p_col_count=1&_101_struts_action=%2Fasset_publisher%2Fview_content&_101_assetEntryId=271950&_101_type=document. Access on: April, 06, 2020.

6.Kampf G, Todt D, Pfaender S, Steinmann E. Persistence of coronaviruses on inanimate surfaces and their inactivation with biocidal agents. J Hosp Infect. 2020 Mar;104(3):246-251.

7.Agência Nacional de Vigilância Sanitária. RDC/ANVISA nº 15 de 15/03/2012. https://www20.anvisa.gov.br/segurancadopaciente/index.php/legislacao/item/rdc-15-de-15-de-marco-de-2012. Access on: April, 06, 2020.

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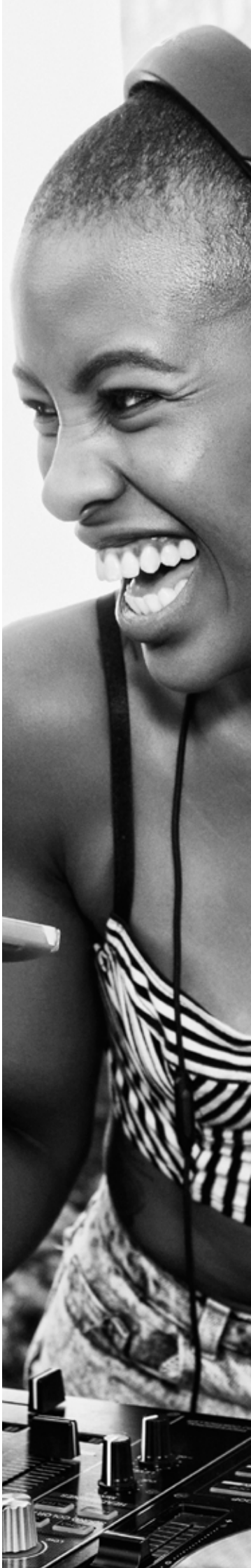
9. Center for disease control and prevention (CDC). Available at: https://www.cdc.gov/hai/pdfs/ppe/ppe-sequence.pdf Access on: April, 14, 2020.

Attention!
This manual does not replace the World Health Organization's guidelines nor those of other related organs. Likewise, it does not replace specific instructions for use of the mentioned products. It is the dental care worker's exclusive responsibility to evaluate each clinical case before using products or applying techniques presented in this manual.

The guidelines in this manual were based on the evidence available at this moment (April/2020). They do not guarantee that contamination will be prevented, and they may be changed in face of new evidence.



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