In This Training Module, You Will Learn:

• Definition of sterilization and disinfection
• What needs to be sterilized and disinfected
• What Personal Protective Equipment is required
• Who should handle Sharps Disposal
• What is Biohazardous Waste and How to dispose of it
• What is disposable waste
• What is the Sterilization Station Layout
• How to set up the Sterilization Station
• What must be done before clinic
• How to handle contaminated instruments
• How to transfer instruments to the Sterilization Station
• Steps in Sterilization Cycle for both handpieces and instruments
• How to package instruments
• How to run the Autoclave cycles
• What to do with instruments and handpieces after being run through the Autoclave
What is Sterilization?

The removal of all microorganisms and other pathogens from an object or surface by treating it with chemicals or subjecting it to high heat or radiation.
Disinfection and Sterilization are both part of the decontamination process.

- **Disinfection** is the process of eliminating or reducing *harmful* microorganisms from inanimate objects and surfaces, i.e. dental chair.

- **Sterilization** is the process of killing *all* microorganisms. Sterilization also destroys the spores of various organisms present on surfaces or in liquids, medications, or compounds such as biological culture media.
Sterilized or Disinfected?

STERILIZED

All instruments used on patients in our clinics must be sterilized OR disposed of after a single use.

Sterilization is a critical procedure that must be performed throughout the day.

DISINFECTED

Devices and equipment that only come into contact with a patient’s intact skin (e.g. eye protection and handpiece motors) can be disinfected sufficiently with an EPA-registered hospital disinfectant.
Personal Protective Equipment for Sterilization

Personal Protective Equipment (PPE) is REQUIRED for sterilization process. This includes:

- Protective Eyewear
- Masks
- Laboratory Coat (disposable or washable)
- Scrubs
- Gloves – Chairside Assistant
- Utility Gloves – Sterilization Station
- Closed-Toed Shoes

If you are involved in surgical procedures, the PPE may also include:

- Surgical Masks
- Surgical Gloves
- Hairnet
Sharps

Dr. and/or Hygienist shall be the only ones handling needles, i.e. properly disposing into sharps container.

Anesthetic carpules are also to be disposed into a sharps container.
Biohazardous Material

Biohazardous material includes:

- Contaminated waste from excretion, exudates, or secretions of infectious people
- Blood, blood elements (i.e. blood soaked gauze)
- Bodily fluids

Biohazardous material must be disposed of into the red biohazardous material bags.
Disposable Waste

Paper Products and other disposable waste can be discarded into general trash receptacles. Disposable waste includes items such as:

- Face masks
- Gloves
- Cotton rolls
- Gauze squares
- Fuzzy sticks
- Etc.
CONTAMINATED INSTRUMENTS

Moving instruments/handpieces from Dental Treatment Station to Sterilization Station
Transportation of Contaminated Instruments

• Contaminated instruments and handpieces should be transported in the Transportation Container to the Sterilization Stations by the Dental Chairside Assistant

• The container should be kept in the working zone until it is taken to the Sterilization Stations by the Dental Chairside Assistant

• Contaminated handpieces, once reaching the Sterilization Station, should be processed separately from all other instruments. Extreme care of the handpieces should be taken so they are not damaged

• After contaminated instruments have been deposited out of the transport container, the container is disinfected with Birex wipes and taken back to the treatment station it came from.
STERILIZATION STATIONS PRACTICES

Sterilization practices at the Sterilization Station
In regards to spacing at the **Sterilization Station**, the CDC says, “...spatial separation might be satisfactory if the dental worker who processes instruments is trained in work practices to prevent contamination of **clean areas**.”

This means that there has to be separation between the dirty and clean sections in the Sterilization Station.

One such practice would be for the Sterilization Assistant to change gloves *after* handling dirty instruments and *before* handling clean instruments.

No cross contamination!
Handpieces

Handpieces **DO NOT** go through the disinfection process of being washed with Soap, Birex, and put through the Ultrasonic Cleaner.

Instead, they are:
- Wiped with Birex wipes
- Lubed with spray lubrication
- Packaged into sterilization pouches
- Label with generic “Pathway to Health” followed by Department (Endo/Hygiene/etc) or Dr.’s name
Only One Instrument Per Pouch!

Do not place similar or identical items in the same pouch, because once it is opened to remove one instrument, the rest of the instruments are rendered unsterile.

Exceptions: If the dentist uses an explorer and scaler for each patient, you can sterilize this pair in one pouch. Also, extraction instruments to be used in the same procedure may be pouched together. Finally, an explorer and mirror may be pouched together.
**Drying Sterilized Instruments**

- If the Sterilization Assistant is removing pouches while hot, they should use clean gloves (not gloves from dirty side) or a disinfected device such as forceps. The heat of the instruments helps the pouches dry faster.

- Pouches should not be touched with bare hands until they are cool and dry. Hot packs act as wicks, absorbing moisture, and, hence, bacteria from hands.

- Pouches dry best paper side up, plastic side down. Do not store wet or damp pouches; instruments inside them will mildew or rust.
STERILIZATION STATIONS SETUP

How to set up Sterilization Stations prior to event
FIVE sterilization table lines are set up to coordinate with the color of the treatment stations’ tables.

This reduces instrument loss and promotes ease of pick-up of the clean instruments.
Daily Set Up by Sterilization Assistant

1. ½ gallon of clean water is poured into each of the three wash basins (C, D, and E)
   1. One squirt of soap is put into the first basin
   2. ½ pouch of Birex is placed into the second basin
   3. 1 enzyme Ultrasonic tablet is placed into the Ultrasonic Cleaner

2. Change water in basin at noon.

Turn on autoclaves. Check to make sure add water indicator is not on. If it is on, add distilled water.
STERILIZATION FLOW

Sterilization process during the event
The Chairside Dental Assistant gathers the contaminated instruments and handpieces from the Treatment Area and places them into the clear plastic Transfer Container.
Handpieces

Handpieces do not go through the immersion disinfection.

At station (B) they are wiped with Birex wipes, lubed with spray lubrication, and packaged into the sterilization pouches labeled with the default label of “Pathway to Health”, then placed at station (F) for autoclave.

If the Dr. brought their own personal handpieces, DO NOT label with “Pathway to Health,” instead label with the Dr.’s name.

This is done by the Sterilization Assistant.
The Chairside Dental Assistant must label sterilization pouches with the default label of “Pathway to Health” with the corresponding Department (oral surgery/restorative/CEREC/etc.) unless the Dr. brought their own personal instruments. Then label with the Dr.’s name.

Move handpiece pouches to station (F) for processing.
Instrument Disinfection

This disinfection removes the general debris from the contaminated instruments (not handpieces). The instruments are still contaminated!

(C) Place contaminated instruments in wire basket, then lower into wash basin containing soap. Scrub for one minute, then hold up wire basket to drain for 15 seconds.

DO NOT SPLASH

(D) Move the wire basket containing the instruments to the wash basin containing Birex. Scrub for one minute, then hold up wire basket to drain for 15 seconds.

DO NOT SPLASH

(E) The instruments are to be placed in the Ultrasonic Cleaner and soniced for 10 minutes. Be sure to set the timer

DO NOT SPLASH
Soap

Instruments are to be placed in a wire basket, then lowered into the first wash basin containing soap.

The instruments are to be scrubbed with long handled brush for one minute, then the basket is to be lifted out of the wash basin and held above it for 15 seconds.

DO NOT SPLASH!
Birex

Move the wire basket containing the instruments to the second wash basin containing Birex.

The instruments are to be scrubbed with a long handled brush for one minute, then the basket is to be lifted out of the wash basin and held above it for 15 seconds.

DO NOT SPLASH
Ultra Sonic Cleaner

The instruments are to be placed in the Ultrasonic Cleaner and cleaned for 10 minutes. Be sure to set the timer.

DO NOT SPLASH
After being scrubbed with soap, Birex, and Enzyme Ultrasonic, the Sterilization Assistant places the instruments on a drying cloth. When dry, place them within the sterilization pouches that were labeled by the Chairside Dental Assistant. Be sure to close the self stick flap closure.

Remember: Handpieces **DO NOT** go through the liquid disinfection. They **DO NOT** go through stations C, D, or E.
Instrument Packaging
Autoclaving

The bagged and labeled pouches containing the contaminated instruments are placed into the autoclave cassette by the Sterilization Assistant, stacked according to autoclave recommendations.

The cassette is closed and slid into the autoclave. To start the Sterilization cycle, select the correct instrument pouch icon and allow the cycle to complete.

After the autoclave cycle is complete the cassette can be pulled out.

CAUTION: Instruments are VERY HOT!
Start Statim Sterilization Cycle

2. Hollow Wrapped Cycles

The Statim 5000S feature two WRAPPED 134°C type S sterilization cycles.

To select one of these S Cycles:
Press the WRAPPED button to scroll through the available cycles.

HOLLOW WRAPPED (S) 134°C / 3.5 min
HOLLOW WRAPPED (S) 134°C / 18 min

Once the desired cycle has been selected, press the START button.

The unit remembers the last cycle run and then displays this first when the unit is powered on.

The Air Dry Only Cycle starts automatically after each sterilizing cycle and runs for 60 minutes.

Air drying may be interrupted by pressing the STOP button. To ensure that the contents of the cassette are dry, the cycle should run for the full 60 minutes. Dryness is important for unwrapped instruments for corrosion prevention. For wrapped instruments, a dry wrap is required to maintain sterility.
Loading Autoclave

Load Plates/Cassettes correctly

- Correct loading of plates/cassettes
- Incorrect loading of plates/cassettes
- Correct loading of plates/cassettes
- Incorrect loading of plates/cassettes
- Correct loading of plates/cassettes
- Incorrect loading of plates/cassettes
Autoclaving

The Sterilization Assistant empties the cassette onto the drying towel.

The clear plastic instrument transfer container is wiped with the disinfectant wipe and placed over on the clean table.

Once the instruments have cooled enough to be handled (generally 1-3 minutes) they are moved to the clean table with the corresponding instruments for that procedure.
About the Autoclave

The autoclave used for Pathway to Health events is a Statim 5000.

This type of autoclave has a sterilizing temperature of 134°C and has a cycle length of 20 minutes followed by a 60 minute air dry cycle.
Opening Autoclave Cassette

- Push the carry handle (1) into the open position
- Put your hands on either side of the cassette handle
- Insert your forefingers in the slots and place your thumbs on the thumb pads
- Press down with your thumbs and pull up with your forefingers until the lid opens
- Raise lid and disengage from the tray. Rest the lid on its outer surface
Inserting Autoclave Cassette

- Hold the cassette handle in one hand and the carry handle in the other.
- Place the end of the cassette into the unit and drop the carry handle into its closed position.
- Gently push the cassette inward until you hear a click sound.
- NEVER push the cassette into the Statim with force as the interior components could be damaged.
Should you encounter a problem with the Statim, contact the person in charge of your area IMMEDIATELY.

We do not want to damage the Statim by forcing instruments in or out in an attempt to fix the problem.
Statim Daily Maintenance

- As needed, replace the water in the water reservoir
- When this occurs, also empty the waste bottle, then refill to the MIN marking

Remember, ONLY DISTILLED WATER should be used
Autoclave Indicator

Before

After
After Autoclaving

Place instruments on the appropriate clean table to await pickup