



SUNNYMEDE TRUST  
TEETH RELIEF

# ORAL HEALTH MANUAL

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**THIS IS CHAPTER 4 OF 7**

## **CROSS INFECTION CONTROL**

**SEPARATE CHAPTERS MAY BE DOWNLOADED FOR TRAINING PURPOSES BUT PLEASE NOTE: EACH CHAPTER WAS WRITTEN & DESIGNED TO BE READ AS PART OF THE WHOLE MANUAL.**

### **DISCLAIMER**

*The authors of this manuscript accept no responsibility for the acts or omissions of any individual or groups of individuals, who having utilised the text in this manuscript as their source of information and knowledge, cause unacceptable harm to any patient or to themselves by undertaking procedures described or alluded to, in this manual.*

## CHAPTER 4:

**CROSS INFECTION CONTROL**

This section will outline the basics of Cross Infection Control (CIC) and includes:

- BASIC RULES OF CIC
- METHODS OF STERILISATION AND DISINFECTION
- CHECKLIST FOR DENTAL WORKERS

**CROSS INFECTION CONTROL (CIC)**

In terms of disease and infection, there is no such thing for a health worker as a 'safe' patient and there is no such thing for a patient as a 'safe' health worker. But it is possible to establish a safe clinic and this should be your aim. Everyone must assume that everyone else 'might' be infected with any number of diseases.

The mouth is a natural home for germs – full of microbes, some of which can be harmful. Instruments and equipment used in dental treatment become contaminated

whenever they are used. If no action is taken to clean them, this contamination will be passed on from patient to patient and from patient to staff and again from staff to patients – this chain reaction is known as Cross Infection.

In order to prevent cross infection, all microbes, bacteria, spores, fungi or viruses on contaminated instruments must be killed through sterilisation, immediately after treatment. They must then be kept sterile before use on the next patient.

**STERILISATION IS NOT AS SIMPLE AS IT MAY SEEM**

Even in the most sophisticated setting with hi-tech equipment and defined procedures, one momentary lapse or one shortcut could result in one unseen germ being transferred. The effects will not be immediately obvious because germs don't announce themselves and even if the source of an infection is eventually tracked down, this won't help those already affected.

There is no point in our listing all the latest advice about cross infection control if this depends upon equipment and supplies you may not have. Equally, you must never think that because your setting may be different, the basic principles do not apply to you.

You will need to strike the right balance between proven ideals and your own reality: What are the risks?

What are the alternatives?

What works best for your situation?

What is the highest level of safety that you can achieve?

Even with basic materials like soap & water and household bleach, effective CIC can be achieved. Give careful thought to methods of sterilisation, storage and thorough cleaning of work surfaces. Most importantly, educate others – any system can only be as good as the people who carry it out.

*Not having... and  
Not thinking...  
are NOT acceptable  
excuses.*

## CROSS INFECTION CONTROL BASIC RULES

Prevention is the purpose of infection control. Therefore, before receiving patients you must ensure that strict procedures are in place to maintain control. The basic rules of Cross Infection Control (CIC) relate to:

PEOPLE	PLACE	EQUIPMENT	WASTE
patient staff	surgery or setting	instruments clerical items	clinical waste, disposable items

### PEOPLE

- Remove all jewellery including watches
- Ensure that your fingernails are clean and cut short
- Wash hands\* with soap, before and after patient contact
- Wear gloves, protective eyeglasses, facemask & apron
- Wear short-sleeved clothing – change this when soiled and do not wear it outside the surgery area
- Wear shoes that protect the toes from dropped instruments.

### PLACE

- Establish a 'clean zone' and a 'contaminated zone' within the surgery
- Ensure personnel in one area do not cross over into the other.

STERILISED ZONE (CLEAN)	CONTAMINATED ZONE (DIRTY)
Preparation of instruments /Preparation of materials	Chair-side area Treatment area
Hand washing area	Washing area for used instruments
Clerical area – note taking etc.	Disposal area for used materials

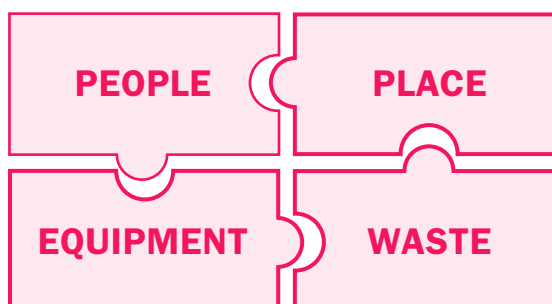
### EQUIPMENT

- Clean equipment needs to be laid out in advance on a clean surface using sterile tweezers
- Instruments should be cleaned and scrubbed under water before sterilisation
- Any instrument with traces of blood, however small, must be scrubbed and then sterilised
- Keep patient record cards/files away from treatment areas.

### WASTE

- Two separate containers are required for:
  - 'Sharps' e.g. needles and sharp items. Must be puncture proof
  - 'Clinical waste' e.g. used gloves, paper towels, extracted teeth etc.
- Each container should be clearly labelled and disposed of carefully.

\* Wash Hands in accordance with standard hospital procedures



## METHODS OF STERILISATION

In order to prevent cross infection it is essential to kill all microbes on all infected instruments. This process is known as Sterilisation and should be the aim in dental settings BUT putting instruments through a heat process to kill germs is only half the battle – they must also be kept sterile until their next use.

**Ideally, instruments should be:**

1. scrubbed with soap and water, then rinsed
2. then sterilised in an autoclave
3. then dried in the autoclave
4. then removed using sterile forceps
5. then placed into sterile bags and sealed
6. then sterilised once more

If you can satisfy 1 & 2 but do not have an autoclave that also dries the instruments, they will have to be dried in the air and could then become re-contaminated.

Or if you go through steps 1-3 of the process but neglect to use sterile forceps when removing or bagging the instruments, they could become re-contaminated.

### 3 STAGES OF STERILISATION: SCRUBBING + STEAMING + STORAGE

So in theory, any procedure that does not complete the 6 steps above, is technically not sterilisation, rather it should only be termed as **disinfection**.

## METHODS OF DISINFECTION

The process of Disinfection refers to any method of cleaning that kills only a limited number of microbes. A variety of chemicals known as disinfectants can be used. Disinfectant solutions must always be made to the correct strength. They have a limited time effect so should be freshly made up for each use.

*All viruses are killed just before boiling point but some spores e.g. Tetanus, would only die if they were boiled for 2 weeks!*

Most disinfectants do not kill spores and some are unreliable against viruses so they should only be used for items that cannot be sterilised by steam.

The main disadvantage of disinfectants is that they are of a poisonous nature with an unpleasant smell and taste, so instruments taken from a disinfectant solution must be rinsed thoroughly (ideally in sterile water) and dried before re-use.

## METHODS OF STERILISATION / DISINFECTION

METHOD	TIMINGS / SETTINGS	SUITABLE FOR
<b>Electric Autoclave</b>	3 mins at 134 °C 10 mins at 126 °C	All metallic instruments
<b>Pressure Cooker</b> for electric/wood/charcoal fires	120°C for 20 minutes Must use a rack inside so instruments above water level to get steam. Place weight on top of lid so once this is pushed, the temperature is correct.	All metallic instruments Re-usable gloves and cloths
<b>Saucepan with lid</b>	Boiling for at least 30 minutes (Do not add instruments during each cycle)	Kills all bacteria and HIV
<b>Dry Heat Sterilisers</b> e.g. oven	160 °C for at least two hours 170 °C for at least 1 hour 180 °C for at least 30 mins 250 °C for at least 30 mins	Only 250° C will destroy endotoxins. Process is very lengthy with heating up + cooling time

## DISINFECTANT SOLUTIONS

METHOD	SOLUTIONS	SUITABLE FOR
<b>Sodium Hypochlorite</b> e.g. Domestic Bleach	0.5% Concentration Soak for 30 mins	Soaking Instruments – but they must be thoroughly washed with soap and water first and rinsed in safe drinking water. After soaking – wipe each instrument with alcohol to remove film of bleach.
<b>Potassium Persulphate</b> (Virkon)	1% Concentration Soak for 10 mins	
<p>Effective against spores, Hepatitis B and AIDS viruses. Good overall disinfectant for work surfaces and items that cannot be heat sterilised. Must be used with care as it can bleach clothing and corrode metal.</p>		

**BEST METHOD FOR CLEANING SURFACES**

According to experts the best method for cleaning surfaces is Soap Detergent and Hot Water.

**PROTECTIVE WEAR**

1ST CHOICE	ALTERNATIVES	CLEANING OPTIONS
<p><b>GLOVES</b> Disposable – single use only</p> <p>Kitchen/Rubber gloves</p>	<p>Plastic bags can be used but ensure there are no holes</p> <p>If being re-used and cleaned – inflate first to ensure no holes</p>	<p>Not Applicable</p> <p>Clean in detergent Wrap in paper Pressure cook x 20 mins</p>
<p><b>MASK</b> Disposable – paper</p> <p>Re-usable cotton cloth</p>		<p>Not Applicable</p> <p>Clean in detergent Wrap in paper Pressure cook x 20 mins</p>
<p><b>GLASSES</b></p> <p>Operator: Glasses with side protectors or visor</p> <p>Patient: Glasses with side protection</p>	<p>Any glasses or goggles that allow clear vision</p> <p>Any type of glasses or goggles to protect against light, instruments, debris etc</p>	<p>70% Alcohol solution</p> <p>70% Alcohol solution</p>
<p><b>BIB</b> Patient:</p> <p>Disposable paper or plastic – single use only</p>	<p>Any paper or plastic sheet but single use only</p>	<p>Not Applicable</p>
<p><b>CLOTHING</b> Operator/Nurse:</p> <p>Short sleeved uniform</p>	<p>Keep uniform separate from everyday wear</p>	<p>Wash in boiling water and detergent Dry in the sun</p>

**STERILISATION OF NEEDLES**

While steam can kill all microbes, it is not a safe method for syringe needles

The space inside a needle is too small to allow for complete penetration of steam into clotted blood remnants.

Even the smallest trace of infected blood in the cavity of a used needle can transmit the Hepatitis B virus from patient to patient.



**METHODS OF STERILISATION & VIRUSES ARE CONSTANTLY BEING UPDATED**

**STAY SAFE – STAY INFORMED**

[www.who.int/en/](http://www.who.int/en/) search under ‘cross infection control’

**! WARNING !**  
*Used needles must NEVER be re-used on another patient.*

**CROSS INFECTION CONTROL****CHECKLIST FOR  
DENTAL WORKERS****At the start of a session, before any patients are treated**

- Prepare autoclave or steriliser unit
- Define the clean and contaminated areas ready for use
- Fresh supply of soap solution and paper towels.

**Before every patient is treated**

- Wash hands
- Cover any skin cuts with waterproof dressing
- Put on fresh gloves/mask where possible
- Wipe down work surfaces, chair and head rest.

**During treatment**

- Wear protective clothing, mask, gloves, glasses
- Change glove if it gets torn or punctured
- Provide bib and eye protection for patient
- Provide water rinse and spittoon for patients.

**After each patient is treated**

- Clean/scrub all instruments first, then sterilise
- Dispose of waste safely in appropriate containers
- Clean and disinfect contaminated work surfaces
- Flush, clean and disinfect spittoon
- Prepare for next patient.

**At the end of a session**

- Separate waste and remove it from surgery for safe disposal
- Clean and disinfect all work surfaces and chair
- Drain autoclave/steriliser and dispose of water safely
- Flush out, disinfect and cover spittoon.

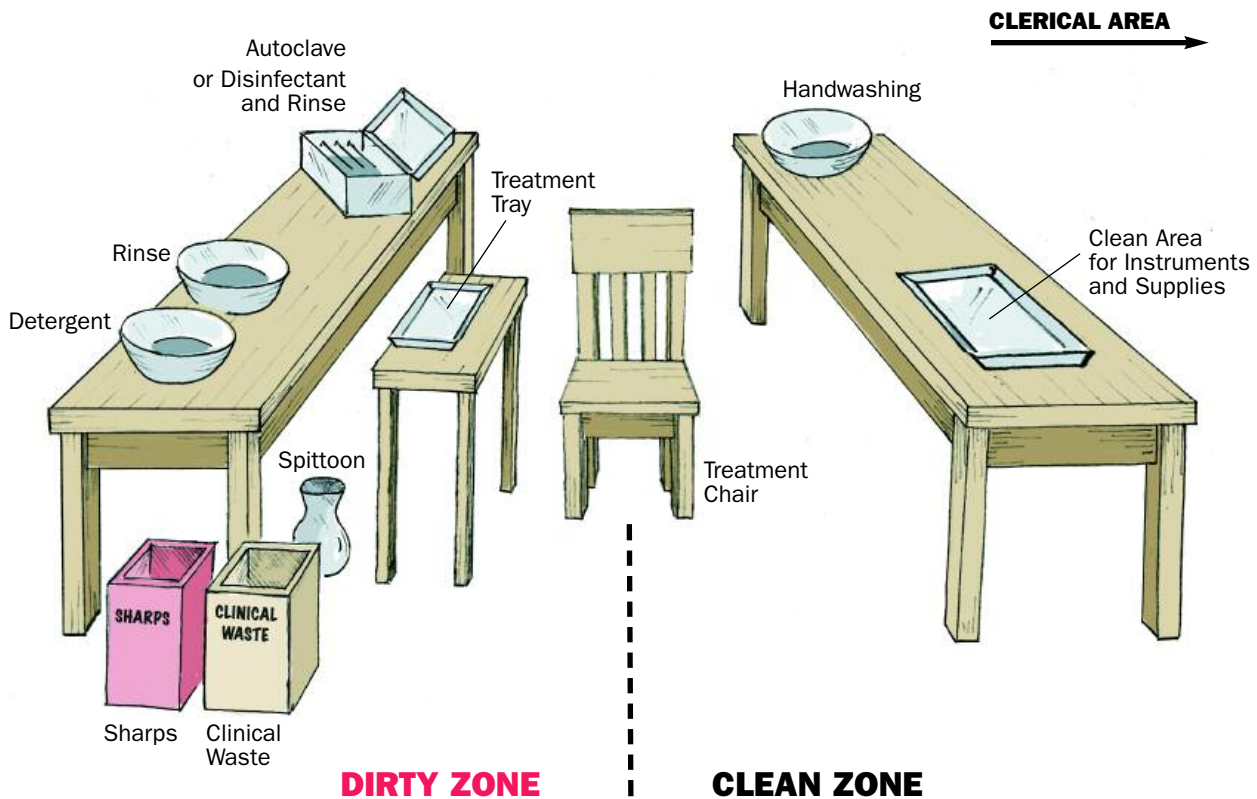
**Waste disposal**

- Always dispose of waste away from people, animals and crops
- Dispose of sharps and clinical waste by burning in a container
- Bury the residue 2-5 metres down into soil.

**Storage**

- When handling sterile instruments, wear sterile gloves and/or use sterile forceps to avoid recontamination
- Store dried instruments inside a clean, covered pan
- Keep all instruments and supplies in a secure place
- Regularly check the expiry dates of all consumable supplies.

## EXAMPLE OF SURGERY LAYOUT



### Sterilisation/Disinfection takes time –

so you will need to have more than one set of instruments to avoid a long delay between patients.

Ideally 3 of everything is best then you can rotate them:

- one set in use
- one set in readiness
- one set in the sterilising process.

### Good Practice takes time

The most important thing is to establish a strict routine to suit your own environment.

Review this regularly and ensure that everyone is aware of it and sticks to it.

**DON'T CUT CORNERS – BE SAFE**