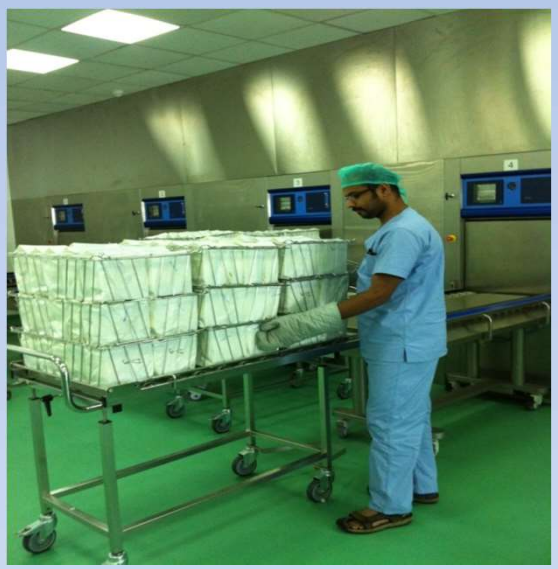
The sterile supply Departments

quick guide manual

Ministry of Health



infection control directorate

A word

Central sterile supply department(CSSD)is the most essential feature in the hospital .It aims at centralizing the activities of receipt ,cleaning ,assembly ,sterilization ,storage and distribution of sterilized materials from a central department where microbiologically safe .

Sterilization is done under controlled conditions with adequate managerial and technical supervision at the optimum cost. it contributes to improve patient' safety programs through the reduction in hospital infection rate.

Dr Haifa Al Mousa
Infection control directorate

content

Content

1-Introduction :

Each day, millions of medical procedures are performed in healthcare facilities worldwide, with caregivers and patients relying on the availability and use of a wide range of supplies, instruments and equipment.

These devices must be properly cleaned, disinfected and/or sterilized, under controlled environment & inspected for quality to ensure good working condition, and available at the point of care. In the absence of proper handling, processing and storage, these devices may become contaminated and compromise quality patient care.

In most healthcare facilities, the central sterile supply department (CSSD) plays a key role in providing the items required to deliver quality patient care. To support infection control within the healthcare facility, the CSSD staff members must be well-trained and skilled, and committed to "doing what's right" every step of the way.

infection control directorate

2-History

--In the era of the late Sheikh Abdullah Al-Salem Al –Sabah the development of health care facilities was emphasized to ensure providing better health care services to the population.

-- the building of Al Sabah hospital took place in the 1966 therefore the need for central sterile supply was necessary .

Therefore a small CSSD was built on a small dimension to receive, clean ,disinfect ,pack, sterilize, and distribute the sterile medical supplies.

--The Number of CSSD equipments & staff at that time was very small due to the limitation of health care services .

Until 1990 the CSSD workers were mainly from nursing department and hotel services(cleaners).

--Nurses had 6 months training on 1975 and 1980 to obtain the basic of sterilization , However, with the development of health care facilities and the growing awareness of infection control the need for sterilization technicians was mandatory to assure proper handling of sterile goods and building a larger CSSD was also established to cover all Al Sabah area hospitals located behind maternity hospital .

In 1991 Ministry of health in association with Public Authority for Applied Education and Training started 2 years training course (4 semesters) the training course including theoretical & mostly practical training which take part in the main CSSD .

--On February 2011 a Super CSSD was built of a total Dimension 7 000 m_2 costing 3.5 million KD located in Al-Sabah area. The New building was opened by Minister of health Dr Hilal Al-Sayer .

The super CSSD covers all hospitals located in Al-Sabah area & supplies all hospitals & polyclinics around Kuwait .

The super CSSD is equipped with up to date machinery of 12 double door washer disinfectors,13 double door steam sterilizers ,2 large Ultrasonic machines,25 heat sealing machine and 25 working stations with the addition of new CSSD technologies such as Automatic loading system (AGS)for both washer disinfectors & autoclaves and automatic chemical refilling (Central dosing system) for washer disinfector.

3- CSSD responsibilities

1-Providing Sterile supplies to all hospitals, clinics and polyclinics under the jurisdiction of ministry of Health.

2-Revision and approval for the design of any SSD in the Ministries or private hospitals.

3-Providing policies / procedures and supervising the implementation of the same in MOH.

4-Technical Supervision on CSSDs / TSSUs in Ministries Hospitals.

5-Communicate with the end users to improve the quality of the service.

6-Participating in committees to outline specifications of purchased equipment and raw materials.

7-Specifying criterion for quality control of all items produced by CSSDs.

8-Providing two years training programme in the field of sterilization for the Public Authority for Applied Education and Training for candidates who completed 12 years of general education. Upon completion they will be certified as qualified technicians. This training programme is unique not only in Kuwait but also in the Middle East.

9-Training technical staff is a perquisite prior to employment in private hospitals.

10-Providing consultancy and technical advice to enquiries related to sterilization whether from Ministry of Health or private hospitals.

Providing on job training programmes, refreshment courses and continuous updating of technical staff

4-Hand Hygiene

Staff hands are the most common vehicle for

infection transmission in health care.

Staff hands must be washed and dried:

- On commencement and completion of duty
- Before and after using the toilet
- After working in a ‘dirty’ area
- Before working in a ‘clean’ area
- Before and following meal breaks
- Following any action that may contaminate

hands

Finger nails should be kept short and clean
Hand and wrist jewelry must not be worn

Hand Hygiene Campaign

Life Of Your Patient Between Your Hands

The Rise Of Resistant Micro-organisms Is Continuing Threat Of The Future & You Can Prevent The Spread By Washing Your Hands

You Can Prevent Spread Of Infection by Washing Your Hands

You Can Reduce The Financial Burden On Health Resources By Washing Your Hands

The Future Is In Your Hands

Patient Safety

A World Alliance for Safer Health Care

SAVE LIVES

Clean **Your** Hands

5-layout

Properly designed central sterile supply department (CSSD)s facilitate one-way flow of items between soiled and clean work areas and sterile storage. Walls and other barriers separate the functional areas of a CSSD: decontamination, preparation and packaging, sterilization and sterile storage

Must separate decontamination area from all other areas

When you design CSSD remember

1-The department should be designed so that it is physically separated from all other work areas.

2-The department should be designed to facilitate a unidirectional flow from the

'dirty' area to the 'clean' area

3-There should be a changing area for workers includes,

toilet facilities and lockers in proximity to the decontamination area.

4-Access to the wash room and to the clean room should be through dedicated

gowning rooms provided with hand hygiene facilities

5-The wash room, clean room and sterilizer unloading area should be free from

'opening' windows, and unclean areas

6-All rooms in the department should be mechanically ventilated and controlled

to provide a comfortable working environment, (typically temperatures should

Be controlled between 18-22ºCelsius and relative humidity should be controlled

within the range 35-60%).

7- Staff movement between dirty and clean areas should not be possible without passing through a clothing change and wash-up area

8-Storage facilities for bulk items should be provided external to the clean room and the wash room

9-Number of Washers , ultrasonic ,sterilizers & other equipments according to floor dimension ,Staff total number & work load .

CSSD areas

1-Decontamination area :
Reception area
Trolley washer
Washer disinfector
Ultrasonic irrigator
Janitor + WC+ chemical store+ P.P.E +hand wash area
Sinks for Manual wash+ spray guns
Segregation table

2-Packaging area
Working stations with inspection lamps
Sealing machine
Reel dispenser with cutter
Wrapping papers trolley
Dryers

3- Sterile area
Steam sterilizers(Autoclaves)
Heat sensitive sterilizers (ETO / Plasma/formalin)
Dry heat sterilizer

4- Storage area
Unsterile store located in the packaging area
Sterile store located in the sterile area
Raw material store located in the packaging area
5- Linen folding room + tailor

Located in the packaging area

6-Classification of instruments

HIGH RISK:

Items in close contact with a break in the skin or mucous membranes or introduced into a normally sterile body cavity/organ e.g. surgical instruments, catheters, needles etc.

Sterilisation is required.

MEDIUM RISK:

Items in close contact with mucous membranes, contaminated with transmissible organisms or to be used on immuno-compromised patients e.g. respiratory equipment or endoscopes.

Disinfection is required, by heat where possible.

LOW RISK:

Items in contact with normal and intact skin e.g. stethoscopes, wash bowls, Cleaning and drying is adequate.

SINGLE USE ITEMS:

To re-use a single use device without considering the requirements and consequences could expose the patient and re-processors to risks. Single-use devices may not be designed to allow decontamination -

7-Sterile supply cycle

-Each step in the sterile supply cycle is crucial to a good and safe use of a sterile instrument or other item during a medical intervention

-A mistake or failure in any of the steps may cause recontamination and makes the whole procedure useless.

-It may result in huge costs and can cause serious suffering and even endanger the life of patients and staff.

8-Collection

All used, potentially contamination medical devices should arrive the washroom in sealed containers into the reception area (the vehicle should be approved by infection control department).

These containers should bear identification as to where they have been dispatched from and preferably, their contents.

It is common in many Decontamination Service departments to have a system installed for determining priorities for reprocessing within the reception area to ensure minimum delays with critical equipment take place .

Infectious items (eg Hepatitis patient' item) should be placed in the lower shelf of washer disinfector

9- Segregation

- All devices are properly disassembled where necessary for cleaning
- baskets are never overloaded.

- Sharps and fine instruments are properly using fine mesh process

-Sharp edges of the instruments should be facing inwards

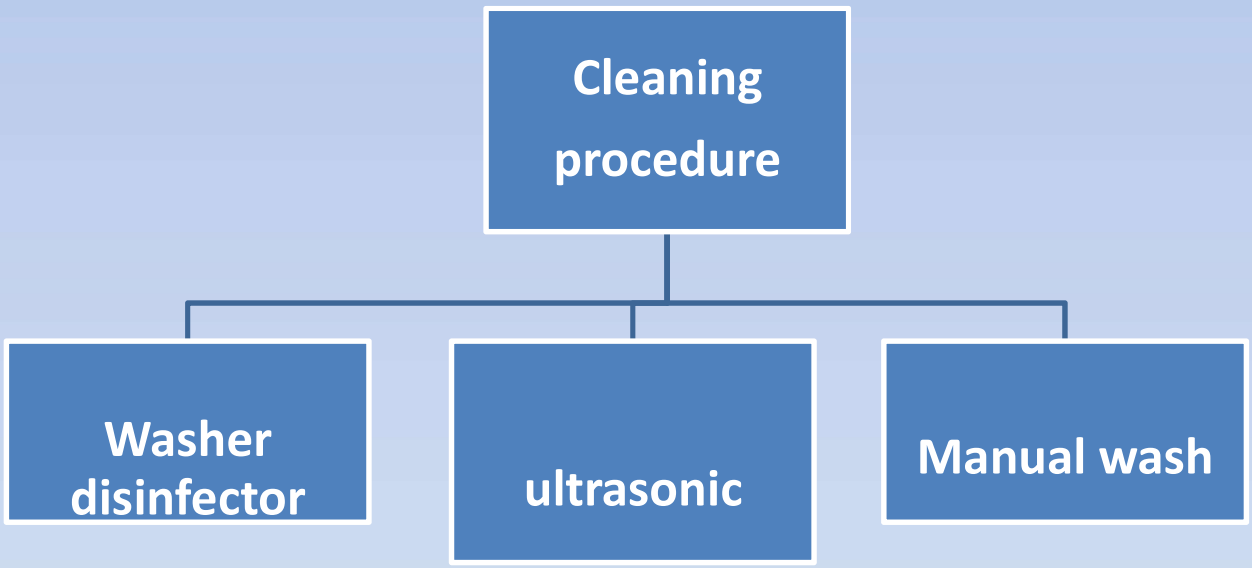
- jointed instruments must be opened ensuring no areas are left unwashed

Always follow manufactures instructions for dismantling complex items

10-cleaning &disinfection

soil should be removed as soon as possible to:

- Reduce the number of micro-organisms on the item
- Remove the nutrient material that can support microbial growth
- Reduce the potential for environmental contamination by aerosol or spillage
- Minimize potential damage to devices by blood and other substances.



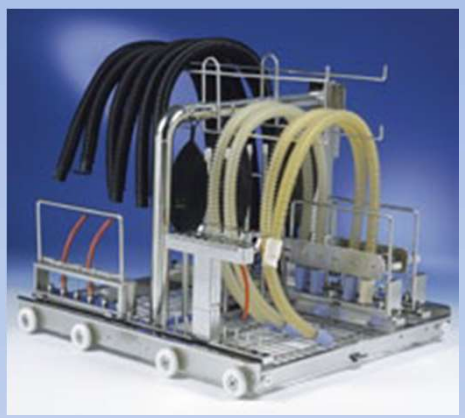
Infectious cases items should be placed in the lower shelf of the washer disinfector

11-W/D Programs

Program	Instruments types	Disinfection Temp .+ time	Special rack
Program 1	-Metal instruments -Hard plastic or any material that withstand high water temperature According to manufacture instructions	90 c 5 mints	Program will run automatically according to rack label (P1 barcode
Program 2	Instruments made of plastic or glass or any material that can not withstand the high water temperature	85 C 28 mints	Program will run automatically according to rack label (P2 barcode

Ensure correct program selection to prevent instruments damage

Use appropriate carts for instruments



Ensure proper connection to laminated instruments for proper cleaning & disinfection

All washer disinfectors used to clean and disinfect medical devices (including) should be:

- Maintained regularly by qualified engineering staff .

and results recorded

- Cleaned and checked daily by designated SSD staff in accordance with written

departmental protocol

- Used only with detergents and other additives which were used in the machine's
- Operated according to manufacturer's

instructions and agreed departmental work.

Loading

Unloading

12-STF stainless steel slide + paper sheets

1-Steel part is made of stainless steel corrosion resistance similar to the material used to manufacture surgical instruments

2-the paper sheet contain organic material similar to coagulated human blood

3-The test should be placed in different positions by clipping it to the trays as shown in the picture

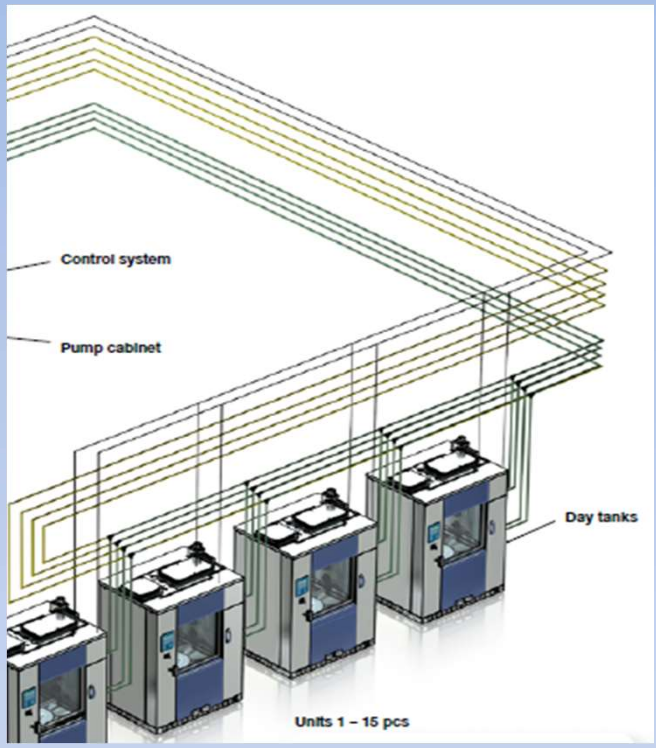
4-Preferably should be placed at locations where it is difficult to clean (the corners

5-At the end of the cycle the paper sheet is removed and checked

6-If complete removal of colour = pass
Clolour remains = fail

7-If red colour remain after repeating then stop the washer and call specialist for repair

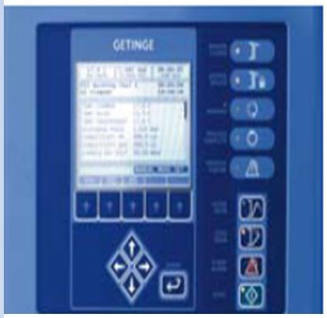
13- Washer disinfector
Central Dosing system



From accurate dosing and documentation to effective spill containment and
space utilization, highly scalable Detergent Management Systems
can dramatically facilitate regulatory compliance while reducing
operational costs.

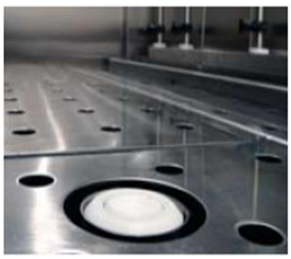
14-Trolley washer for trolley & containers used for collection

Used to clean and disinfect the collecting trolleys, boxes and basins with temperature reaching 90 C and disinfection exposure time 1 -2 mints



Shallow pit and small sump

Lateral washing system and multiplie drying ports.



Flat floor with manifold docking.

15-Ultrasonic -Irrigator

The effect of ultrasound is based on the cavitation

which occurs at the water-solid interfaces.

In the solution, small bubbles are formed which

contain gas with low pressure. When cavities

collapse, this results in very high local differences in

pressure which affect the removal of dirt particles.

In soft objects, e.g. rubber and silicone, this effect is

not very pronounced.

Ultrasound is particularly suitable for dissolving

dried dirt at sites which are difficult to access

When using Ultrasonic irrigator remember

--Don’t condense

--Don’t put the instruments directly on the bottom ,use basket

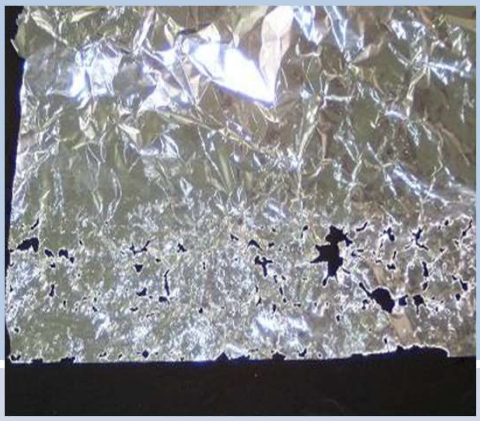
--Dismantle complex items

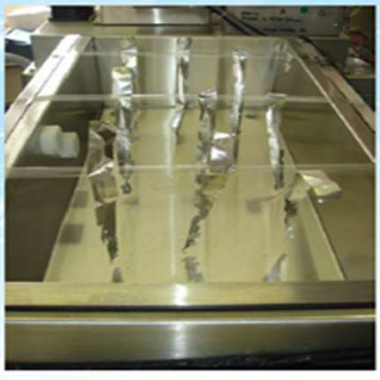
--Use accessories for laminated Instruments

-- Select appropriate program

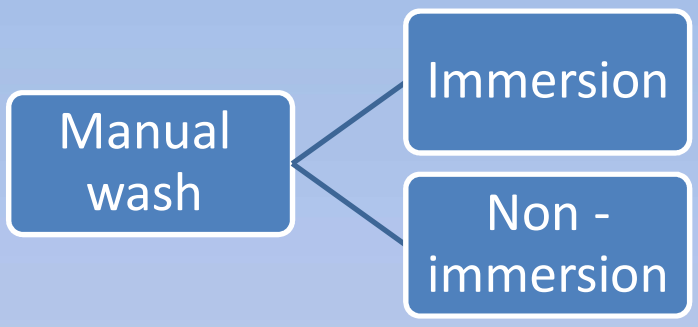
16-Foil test

Prepare heavy duty foil width 1.5 Cm. the number of foils depend upon ultrasonic capacity .
Use tape to fix the foil strips as shown in the picture ensuring the foil does not touch the bottom .
Run the ultrasonic without instruments
After cycle finish check the changes on the foil
If uniform change on the foil appear then the test is passed
If no changes appear call maintenance for repair





17-Manual wash



Immersion

Equipment required::

• A double sink which will hold sufficient volume of water

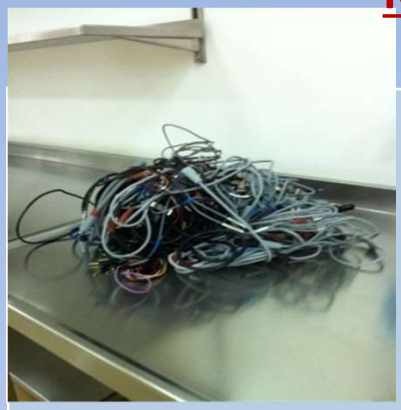
and enzymatic detergent such that the item of equipment to be cleaned can be fully immersed

• -detergent solution of correct dilution and at a temperature

• A clean, disposable, non-linting cloth or mechanical drying facility)

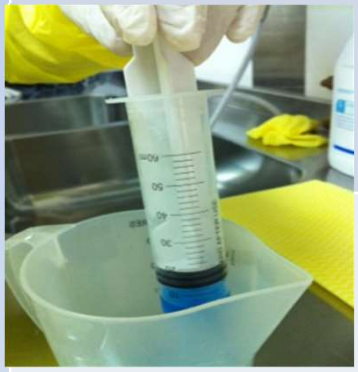
-Brushes

Manual wash without immersion



Used for instruments with electrical connections	1

enzymatic detergent & lint free towels are used	2



Follow manufacture instructions regard dilution of enzymatic detergent	3

Damp towel in solution then wipe the instruments Follow this step by wiping with only water Keep wiping frequently until visual cleanliness is achieved Dry using lint free towel	4

Manual wash with immersion

 	**Rinse with water making sure to use spray gun for cannulated instruments**	**1**
	**Prepare enzymatic detergent according to manufacture instructions**	2
	**Immerse the instruments in the solutions making sure to shake a little to get rid of bubbles** **Make sure cleaning is performed with the instruments fully immersed avoiding splatter**	3
 	Use appropriate brush for cleaning and change is necessary	4
	Use lint free towel to dry instruments or use dryer	5

18-Water Conditioning

There are several methods which may be used for water treatment; these include processes such as:

- Water filtration – filters out impurities
- Water softening – converts 'hard' salts to 'soft' salts
- De-mineralization – removes specific minerals from water
- De-alkalization – removes specific alkalis from water

Water purification processes include:

- Distillation
- Reverse osmosis.

Minerals in untreated water can cause spots & corrosion to instruments

Poor water quality cause spotting

The minerals causing hardness, e.g. calcium and magnesium salts which are found in all types of tap water, produce scale when heated. If tap water dries up, the minerals causing hardness and, in addition, all other dissolved water components remain in the form of dry residue on the surface and form water spotting

This tool shows evidence of pitting and should undergo repair.

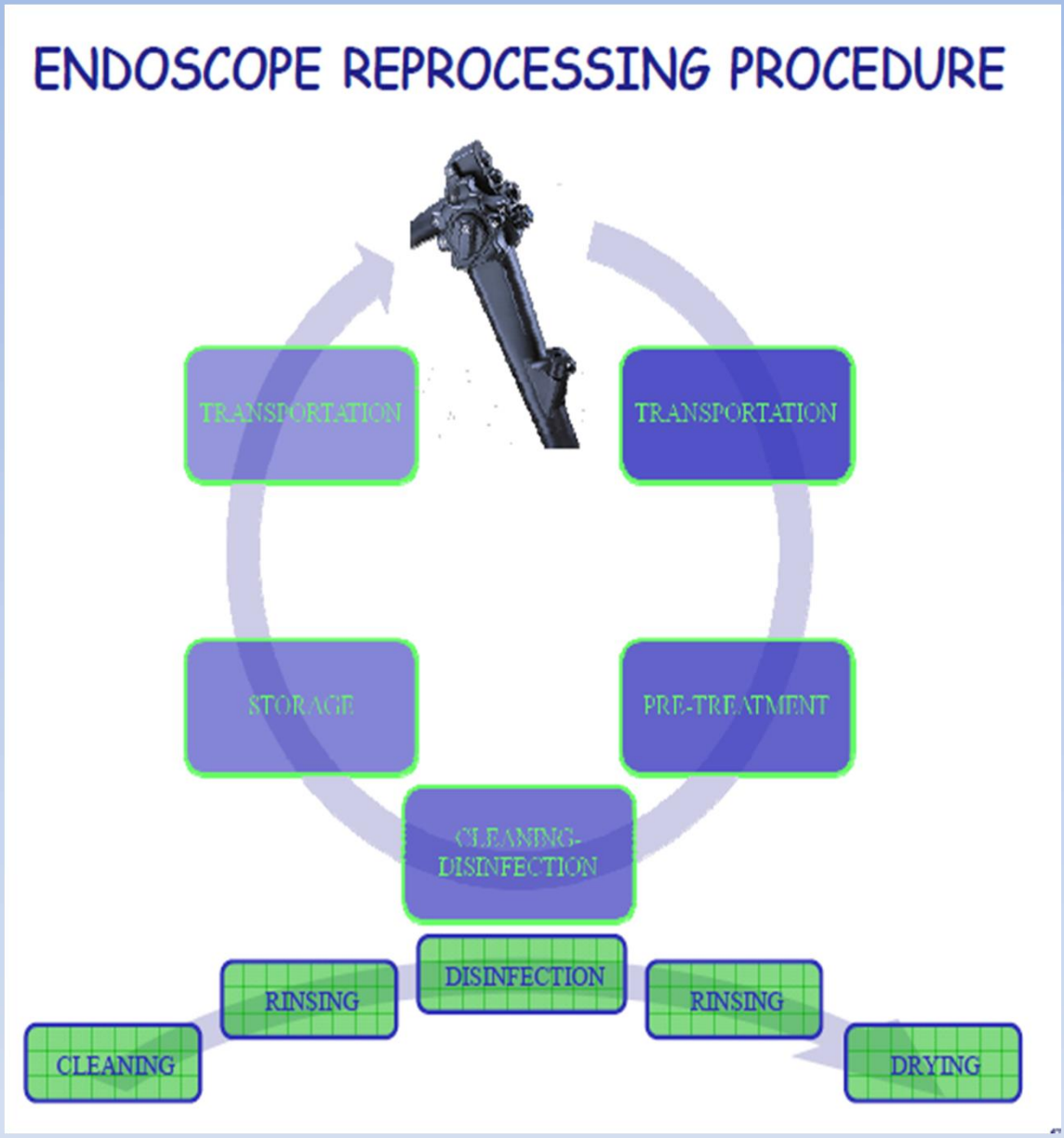
This tool shows evidence of corrosion and should undergo repair.

19-chemicals used CSSD

1		**Disinfectant tablets used for disinfection floor & surface s**
2		Alkaline based detergent used for CSSD washers
3		Acid based zero spot (rinse aid) used for neutralization and removal of detergents residues
4		Neutral to mild alkaline detergent with high effect to break organic soils by means of enzymes

Follow manufacture's instructions for dilution

20-Endoscope reprocessing



Automated endoscope washer disinfector s (AER) must meet the requirements of HTM 2030 washer disinfector and BS EN ISO 15883 part 4

Flexible Endoscope reprocessing

1-post treatment the nurse should immediately dismantle

2- Wipe with damped lint free towel using enzymatic detergent then irrigate

3- transfer in closed containers to the CSSD

4- sterilization technician should perform leak test before cleaning

5-Manual cleaning with enzymatic detergent using appropriate brushes

6- Use endoscope washer then store in drying cabinet

Only if you transfer the endoscope to outside the building then plasma sterilization is required .

21- Drying cabinet

Used to dry surgical instruments & Anesthetic devices
Temperature varies

Stainless steel instruments =90 C
Heat sensitive device = 70 C

22-Inspection & assembly

A missing or failing instrument while performing a surgical procedure is the annoyance of any surgeon!

It can be the cause of great problems, for the patient as well as the staff performing an operation.

It is therefore essential that instrument trays for all procedures are complete and that each instrument works That is why each individual instrument is subjected to a vigorous inspection, and that each tray should be double-checked for completeness correctly.

Soiled and stained items should return to decontamination area

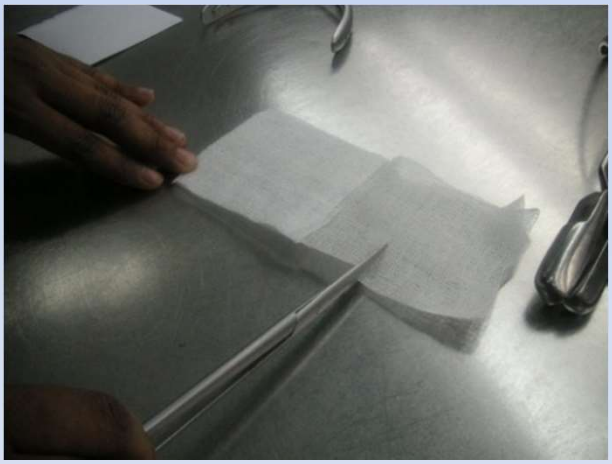
23-Instruments functional check

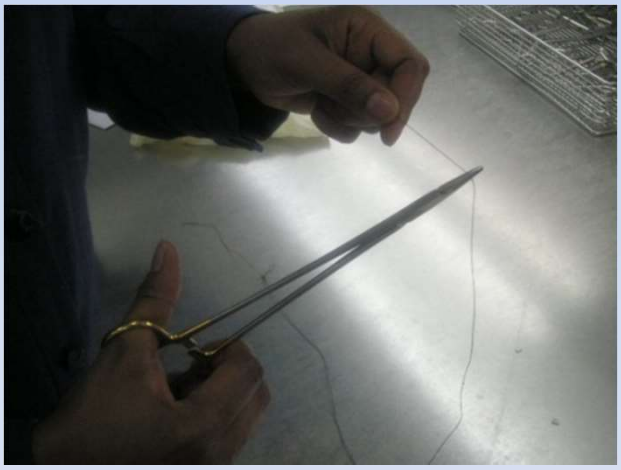
- Critical areas such as handles, joints and jaws require careful inspection
- Instruments with hairline cracks in the joint areas as well as those that are

damaged, distorted or otherwise worn, must be replaced because their function can

no longer be guaranteed

- Scissors should be tested for alignment and smooth movement.

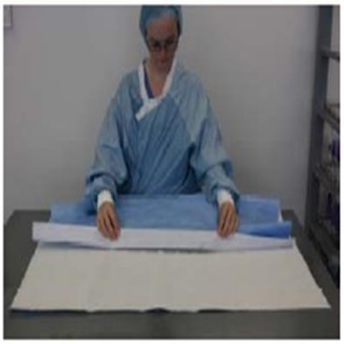




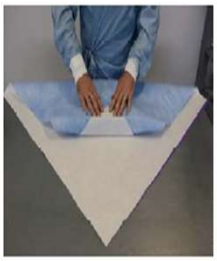
24-packaging

- Capability to safely contain contents (weight, size)
- Ability of material to permit penetration and removal of the sterilant agent (e.g. steam, gas, gas plasma, irradiation) during sterilization
- Robustness of material to maintain sterility and integrity of pack contents following sterilization, during transportation and storage until the time of use
- Allowing aseptic removal of pack contents at point of use
- Ability for sealing and labeling
- Compliance with BS EN ISO 11607 – Sterilization Medical Devices: Packaging of Terminally Sterilized Medical Devices

25-Wrapping – parcel technique



26-Wrapping envelope technique





27-See through technique

polymer (plastic) front; this material comes in either reels or pouches;
advantage of sterilization pouches is that the transparent front allows visual inspection of the contents and should:

- Conform to the requirements of BS EN ISO 11607 – Packaging of Terminally Sterilized Medical Devices: Part 5
- Provide a bacteriological barrier.
- Be available in a choice of closures, heat seal or hand/self-seal.
- Be available in a wide variety of sizes,

Follow diagram for direction of opening

28-Labeling

. Labeling must be clear and accurate and include:

- Title of pack/description of pack contents
- Product identification number
- Name of manufacturer (your department) and packer identification
- Date of manufacture
- Expiry date if pack contains biodegradable materials or local policy demands
- Date and method of sterilization
- Lot/batch number where appropriate
- Cycle number of sterilizer
- Instructions for use where appropriate
- Notification of any known hazards relating to product use where appropriate
- Pack destination and storage location where possible

Chemical indicator

Sterilization tape

Paper Sterilization bags

protector

transparent flat reels

Wrapping papers

29-seal check

Validation test for sealing machines performed daily before work to ensure the closing quality of the sealing machine that will not be affected by the sterilization conditions during the cycle

30-Rigid containers

Rigid containers fitted with lids, seals and filters, generally manufactured from

stainless steel or anodised aluminium that are designed to operate as a packaging

system in their own right and must comply with BS EN ISO 11607 – Packaging for

Terminally Sterilized Medical Devices: Part 8

31-Sterilization Methods

The effectiveness of all sterilization methods can be affected by several factors:

- **The type and number of micro-organisms which may present on the medical device;**

some micro-organisms are more resistant to the sterilization process than others

32-Moist Heat (Steam) Sterilization

Steam sterilization is the most commonly used sterilization process within healthcare facilities.:.

The main attributes of steam are:

- **it is low in cost and easy to produce**
- **It requires relatively simple technology and therefore easy to use**
- **it leaves no chemical residues or by-products behind**
- **It is non-toxic**
- **Sterilization cycles are shorter than other methods**
- **The process can be easily monitored, controlled and validated.**

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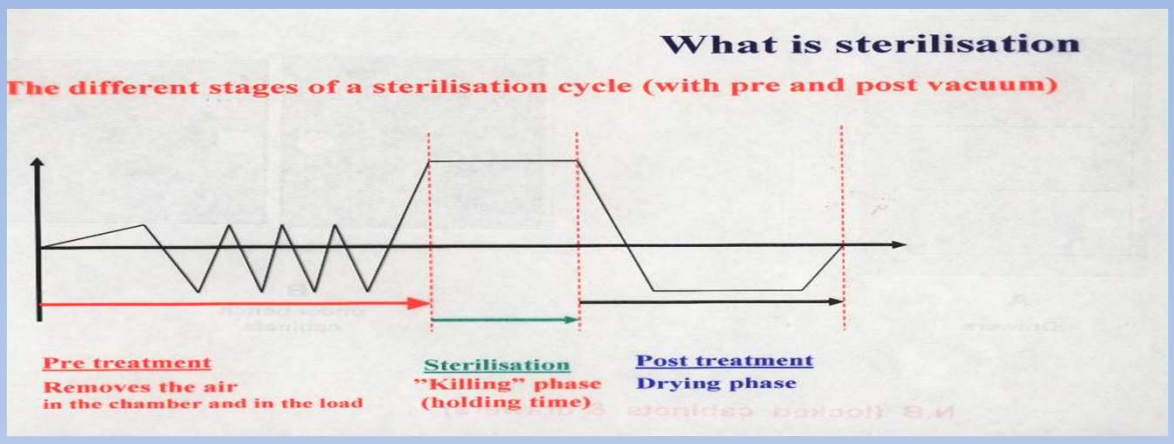
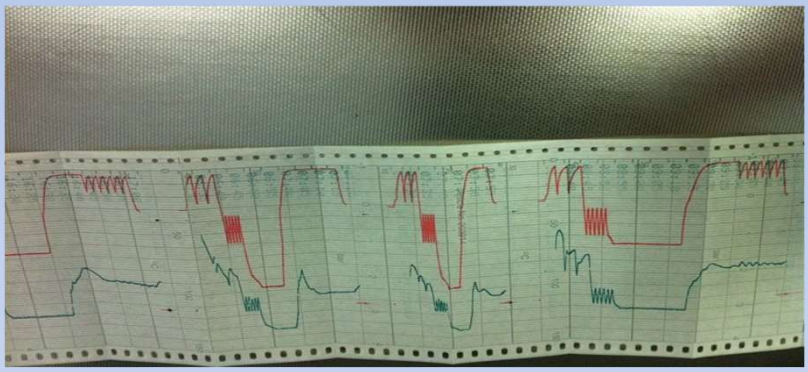
33-Steam sterilization cycle





stage	description
pretreatment	Removal of air and introduction of steam in pulses
sterilization	Exposure time in which killing of bacillus occur
Post-treatment	Removal of steam - drying of packages

34-Programs

Temp/timing	Load type
134-137◦C 3-7min	St.st porous load
121◦C 15-20 mints	Heat sensitive load
134 ◦C 18 mints	prion
134◦ C 3.5 mints	B&D test

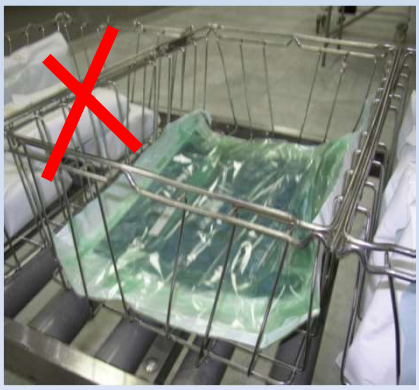
N.B in Kuwait we use 7 mints exposure time only as precaution however 4 mints are sufficient for sterilizing time

35- On loading autoclave

- Under loading should be available to reduce the amount of air in the chamber & reduce the load on the vacuum pumps

When loading laminated pouch load it at oblique position with plastic parts facing downwards

Use appropriate basket size relevant to package size



36-On Removal of Load

- Check recording chart/printout and sign-off that required sterilizing parameters have been met
- Notify supervisor if any problems are detected
- Keep cooling load away from high activity areas
- Do not place cooling items on a solid surface, as condensation may result

37-Bowei & Dick test

When performing the test, the test pack must be removed from the sterilizer as soon as the test cycle is complete. Failure to do so may give a false test result as chemical reactions may continue. It is important that the indicator sheet contains the following information as a minimum requirement:

- Sterilizer identity/Site
- Date
- Cycle number
- Operator
- User
- Pass/Fail

38 -Biological test

3M Attest Rapid Readout Biological Indicator Steam Pack

1	- Check expiry date - Use only one pack daily after B&D test Pack should be labeled with auto clave No. & date . - Control (c) ampoule from same box	
2	Place the test pack on drain with full load , then operate the sterilizer (134 c)	 
3	After cycle complete , remove ampoule and label with same information	 
4	-Press ampoule for full closure assurance -Follow manufac. instruction for crushing	
5	- Place ampoule in incubator temp. 60 c - Check result after 3hrs	

39-Sterilization using ethylene oxide(E.T.O)

Ethylen oxide gas is toxic,carcinogonic and explosive and can cause strictly controlled environment . It is used to sterilize the heat sensitive items
The process is long in comparison to other processes, typically taking four to six hours, but is less aggressive in terms of products compatibility.
Aeration time must be carefully validated
To ensure residual EO products fall below internationally agreed level.

Temp	Gas Exposure Only	Total cycle
Tem. 55 C	Time 1 hour	3 hrs 45 mints
Tem. 37 C	Time 3 hours	5 Hrs 30 mints

40-E.T.O cycle

1- Pre-condition phase:

1- Preheat

: the chamber walls are heated to the selected temp.

2- Air removal

:Deep vacuum is created within the chamber to remove the air & to improve the penetration & humidification of the load .

3-humidification:

Injection of low temp . steam to humidify the load . Improving the ETO penetration.

2-Gas Exposure phase :

1- Cartridge puncture :

the difference in pressure between the vacuum in the chamber and the pressure outside the chamber provides the force used to puncture the cartridge

2-Gas exposure:

through out the gas exposure the sterilizer maintain negative pressure to ensure gas will not escape the chamber .

3- Gas removal

:Deep vacuum is created to remove most of the ETO gas followed by fresh air purge .but the material of the load will continue

release the gas therefore the need for aeration

3-Aeration

24 Hrs

41-Plasma sterilization

Vaporized hydrogen peroxide is relatively new to healthcare

There are several processes available in which vaporised hydrogen peroxide in combination with a

plasma phase.

Suitable for heat sensitive items

Sterilization temperature 50-55 C

42-Special packaging materials for plasma

Use special packaging materials (Tyvek) cellulite free

Plasma sterilization biological test should be performed with every load incubation temp > (58 ◦C)

43-Dry heat

Mechanism of killing by dry heat is by killing the organisms by destructive oxidation of essential cell constituents
Killing the most resistant spores by dry heat requires a temperature of about 160 C for 60 mints
Dry heat is employed for glassware,syringes,metal instruments and paper wrapped goods ,which are not spoiled by high temperature
It is also used for anhydrous fats, oils and powders that are impermeable to moisture.

44-Sterile store

-Room should be well ventilated with controlled temperature ,clean ,with sealed windows and lighting fixtures.

-Access should be limited to those working within the area

45-Unsterile store

Unsterile stock should be placed in separate unsterile store
Statistics should be done to ensure correct compensation
Communication is necessary between packaging area and sterile store.

46-Raw Materials

Ordering of raw materials and other items should be strictly controlled within the

healthcare provider industry. Each institution is likely to have its own set of rules which

must be observed; these will include spending levels for individual managers and budget

control mechanisms to ensure cost containment and inventory control.

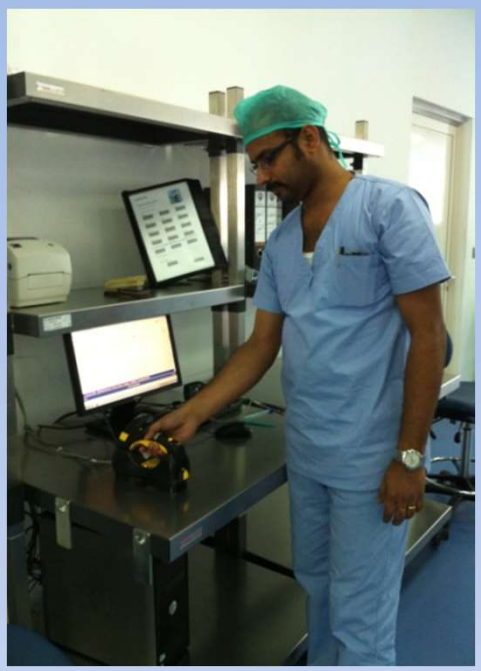
Upon receipt, all materials/items must be checked for:

- **Condition of product on arrival and prior to acceptance from delivery driver**
- **Product type and quantity matching order placed**
- **Specific storage requirements**

47-Green laundry

Made of various materials Designed to protect healthcare professionals and patients from the transfer of microorganisms designed to isolate surgical site from contamination Reusable

48-Quality Assurance



Records must be maintained

There must also be records of individual machine cycles linked to the

devices processed in them which identify the processed product to facilitate

traceability •

Sterilizing Cycle Records

- Date of cycle
- Sterilizer code or number
- Cycle or load number
- Exposure time, temperature and pressure
- Name/ID of loading operator
- Name/ID of person authorizing release
- Specific content of load and
- Read out results of indicators used− Physical chemical − Biological-

Stock levels must be managed to ensure maintenance of service provided by health care facility

49-Tracing system (T.doc)

Complete traceability in T –Doc ,all process ,machines, patients ,operations, doctors, etc that an instruments encountered are registered

From purchase to scrap, and thus the history of each instruments is documented this enables recall of suspicious goods from relevant departments quickly and accurately . Traceability is assured by the use of barcode and / or other tracking technologies.

50-Occupational health & safety

1-Burn hazards due to hot surfaces and exposure to steam at the sterilizer

2-risk of injury due to pointed or sharp instruments

3-infections transfer by contaminated instruments

4-Hazards posed by physical influences alcohol vapours ,heat,steam,compressed air ,gases, etc

5-Lifting and carrying loads (containers)

51-Waste management

Waste type	Colour coding	Description
infectious	yellow	Infectious waste that is required to be incinerated
Infectious	Orange	Infectious waste which may be treated to render safe prior to disposal or alternatively it can be incinerated
Anatomical	Red	Anatomical waste which requires disposal by incineration
Medical	Blue	Waste medicines for incineration
Domestic	Black	This waste should not contain any infectious materials ,sharps or medicinal products

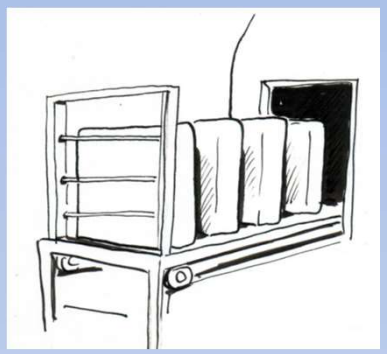
discharge Used infectious sharps in yellow sharp box

Keep an eye on the data printed for errors

Regular performing of biological test is important

Wash hands thoroughly before and after work

Use loading trolley for sterilizer



Use appropriate detergent for manual wash

Personal protective attire is mandatory

Random check for sterile pack integrity is necessary

Use special material for packaging (no pins/ordinary tape)

Report injury immediately

Keep record of daily production and distribution

Keep floor clean

Use help when lifting heavy items to prevent injury

Harsh brushing affect protective layers of instruments leading to corrosion

Bad packages conditions should not be distributed

Report default & call maintenance

Quality assurance is necessary

Terminology

1-Sterilization

A validated process used to render a product free from viable micro-organisms.
It achieves the complete killing or removal of all types of micro-organisms, including bacterial spores

2-Decontamination

A general term to cover methods of cleaning, disinfection and sterilization for removal of microbial contamination from medical equipment to render it safe.

3-disinfection

Process that kills pathogenic and other microorganisms by physical or chemical means but bacterial spores are remained .

4-Biological Indicator

A calibrated population of bacterial spores put up in a package which maintains the integrity,
serves to demonstrate whether sterilization conditions were met

5-Bowie-Dick Test

A diagnostic test of a sterilizer's ability to remove air from the chamber.

6-Chemical Indicator

chemical device employed to monitor one or more process parameters of the sterilization cycle in order

to detect failures in packaging, loading, or sterilizer function. The chemical indicator usually consists of a sensitive chemical or

ink dye that may vary in sensitivity from product to product.

7-Biofilm

a layer of material on the surface of an instrument or device which contains biological materials and in which microorganisms are imbedded

8- Bioburden

the number and types of microorganisms
present on an object or surface

9- Enzymatic detertgent

Instrument cleaning chemistry that is very effective in removing soils from reusable medical devices. These detergents contain

enzymes that produce a specific chemical reaction. The enzymes assist in the cleaning process by breaking down organic soils

(e.g., protein, blood, tissue, fat, starch)

10-Personal Protective Equipment (PPE)

Specialized equipment or clothing used by persons decontaminating medical devices to protect themselves

from direct exposure to blood or other potentially infectious materials, including: fluid-resistant gloves, gowns, aprons with arm

protection, head and foot coverings, high filtration surgical masks and eye protection (goggles/face shield)..

11-Shelf-life

When the term is used with respect to a sterilized medical device, the period of time during which the item is considered safe to use

References

1-Teaching & training manual for sterile services personnel-Institute of sterile service management .
2-www.efhss.com
3-Steriliztaion of medical supplies by steam –volume 2
4-Proper maintenance of instruments
5-AAMI- comprehensive guide to steam sterilization
6-DGSV
German Society for Sterile Supply e.V.
7-A Practical Guide to Decontamination in Healthcare-
8-Ausculap academy – part 1 CSSD course