

**POLICY AND PROCEDURES
UNIVERSITY OF GONDAR HOSPITAL
PERINATAL LAUNDRY FACILITY
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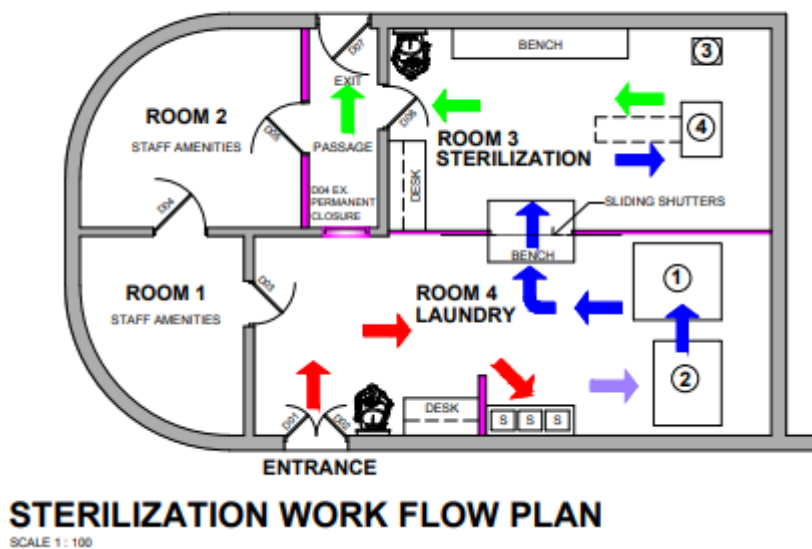
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**CHAPTER ELEVEN: - Safety issues while operating in the perinatal central supply
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CHAPTER TWELVE: - Staffing and management of the perinatal area

Chapter One: - Room Arrangement of the perinatal Laundry and Sterilization service area (Central Supply) and its workflow.

- The perinatal central supply area has four rooms.
- Room one is dedicated as staff amenity room for laundry service.
- Room two is dedicated for staff amenity room for sterilization service.
- Room three is dedicated for sterilization service.
- Room four is dedicated for laundry service.
- All the rooms will be marked accordingly.



-All materials to be sterilized will enter through the laundry room (Room 4).

-All materials to be sterilized will pass to the Sterilization room (Room 3) through the shuttered window on the wall dividing sterilization and laundry rooms (Rooms 3 and 4).

-This window will be opened (for fast passage of materials) as briefly as possible to avoid contamination of the sterilization room.

-All sterilized materials will come out of the sterilization room through the door in room 3 and be transported through a designated corridor between room 2 and room 3 and exit through the door at the back of the building to avoid cross contamination of clean and dirty materials while being transported.

Chapter Two: - Sorting and transporting of contaminated and noncontaminated LINENS from care sites to the perinatal central supply area

-Noncontaminated linens are “dry” linens which have been used in patient areas but are not contaminated with bodily fluids (Blood, sputum, mucous, discharge, feces, urine).

-Contaminated linens are “wet” linens which have been used in patient areas and are contaminated by bodily fluids (blood, sputum, mucous, discharge, feces, urine)

- Contaminated gowns, drapes, and linens from NICU, Labor Ward and Obstetrical Operating Room will be sorted in a designated place in the respective areas. The linen will be placed in hampers identified as contaminated linen. Contaminated gowns, drapes and bed sheets must be transported immediately to the laundry room. Do not allow the contaminated linen to dry.

-Once contaminated gowns, drapes and bed sheets arrive in the laundry, they need to be soaked immediately in the designated decontamination sink in the laundry room (Room 4) to facilitate washing and prevent staining.

- Non-contaminated gowns and linens will be sorted and in placed hampers identified as non-contaminated linen in the respective clinical areas.

-Transporting trolleys will to be color-coded as to contaminated or non-contaminated status. The trolleys will have wheels and marked for transporting contaminated and non-contaminated materials from the respective care sites to the perinatal laundry service area.

- No trolleys or hampers will be over-filled to avoid environmental contamination while being transported to the perinatal laundry service area. Staff responsible for transporting materials to the laundry area will be trained in safe transport of dirty and clean linen.

Chapter three: - Handling, washing, and drying of contaminated and noncontaminated LINENS in the laundry room (Room4)

POLICY: Storage, handling, and distribution of clean linen

PURPOSE: To ensure that clean linen is handled to maintain cleanliness and is not contaminated by dirty linen and reaches the ward in a timely manner.

PROCEDURE:

1. Clean linen will be stored in a dust free, clean area which is only entered by laundry technicians. Clean linen will be covered.
2. Personnel handling clean linen will wear clean uniforms, gloves, and clean apron.
3. No food, beverages or personal items are allowed in the clean linen storage area.
4. Clean linen will be distributed in a “first-in, first-out” schedule.
5. Clean linen which is ironed and folded will be received from the laundry facility on a trolley which is specifically designated for clean linen. Clean linen will be covered during transport.
6. Clean linen will be distributed to the wards daily.
7. Clean linen will be stored, covered, on the ward in a place which is dust free, away from patient care areas and away from contaminated materials.
8. Do not shake clean linen to avoid spreading lint.
9. DO NOT LEAVE EXTRA CLEAN LINEN IN PATIENT ROOMS.
10. The trolleys used to transport clean linen will be disinfected daily.
11. The clean linen area will be cleaned at the end of every day.

References:

Infection Prevention Guidelines for Healthcare Facilities in Ethiopia

Federal Ministry of Health Ethiopia

Disease Prevention and Control Department

Addis Ababa, Ethiopia

JULY 2004

Sterilization Guidelines International Committee of the Red Cross

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POLICY: HANDLING SOILED LINEN IN OR AND WARDS

PURPOSE: Assure that dirty linens from the OR and wards are collected, stored, and delivered to the laundry facility in a timely manner.

POLICY:

1. Linen which is visibly soaked with organic material (blood, exudate, mucous, feces) will be placed in a “contaminated” laundry bin lined with a plastic or water impermeable, leak-proof bag. The laundry bin will have a cover.
2. Linen which is soiled but visibly clean will be placed in a “noncontaminated” laundry bin with a cloth laundry bag. The laundry bin will have a cover.
3. Avoid sorting linen in patient areas.
4. Handle dirty linen as little as possible.
5. Do not shake dirty linen.
6. Linen will be collected and placed in the laundry bins after every operative procedure.
7. Linen from the OR will be inspected for sharps or other materials before being placed in laundry bins.
8. Linen from the L&D wards and NICU will be collected at least once a day from patient rooms and placed in the laundry bins with a cover.
9. Linen from L&D wards and NICU will be inspected for sharps prior to being placed in the laundry bins.
10. No materials other than linens will be placed in laundry bins. Discard gloves, dressings, etc. in appropriate receptacle.
11. The laundry bags will be closed by tying a knot and removed from the bin when 2/3rds full.
12. Dirty linen bags will be stored in a place designated for contaminated articles, removed from patient care activities.
13. Dirty linen will be transported to the laundry on a trolley designated for dirty laundry.
14. Dirty linen bags will be collected at least once a day from the labor wards and NICU and twice a day from the OR suite.
15. The contaminated linen will be processed immediately upon arrival to the laundry area. Noncontaminated linen will be processed as soon as possible upon arrival to the laundry area.
16. The dirty laundry will be stored in bags a designated place in the laundry facility. des

17. Dirty laundry will not be piled on the floor.
18. Contaminated linen bin surfaces will be wiped with cleaning surface solution every time the bag is emptied and once a day cleaned with soap and water and then decontaminated with surface cleaning solution.
19. Noncontaminated linen bin surfaces will be wiped with cleaning surface solution every time the bag is emptied and cleaned with soap and water and decontaminated with surface cleaning solution once a day.
20. Dirty laundry trolley will be washed with soap and water and then decontaminated with surface cleaning solution once a day.
21. Technicians handling dirty laundry will wear long, heavy-duty gloves, water-proof apron, and eye protection.
22. The dirty laundry trolley will not be used to transport clean linen.
23. Contaminated and non contaminated linen should be handed over according to the following table (Figure 2:1)

Date	Time	Specific service area where linen came from	Type of material	Amount in numbers	Name and signature of the person who brought the materials	Name and signature of recipient	Remark

Figure 2:1 Table showing how to handover linens in the perinatal laundry

References:

Infection Prevention Guidelines for Healthcare Facilities in Ethiopia

Federal Ministry of Health Ethiopia

Disease Prevention and Control Department

Addis Ababa, Ethiopia

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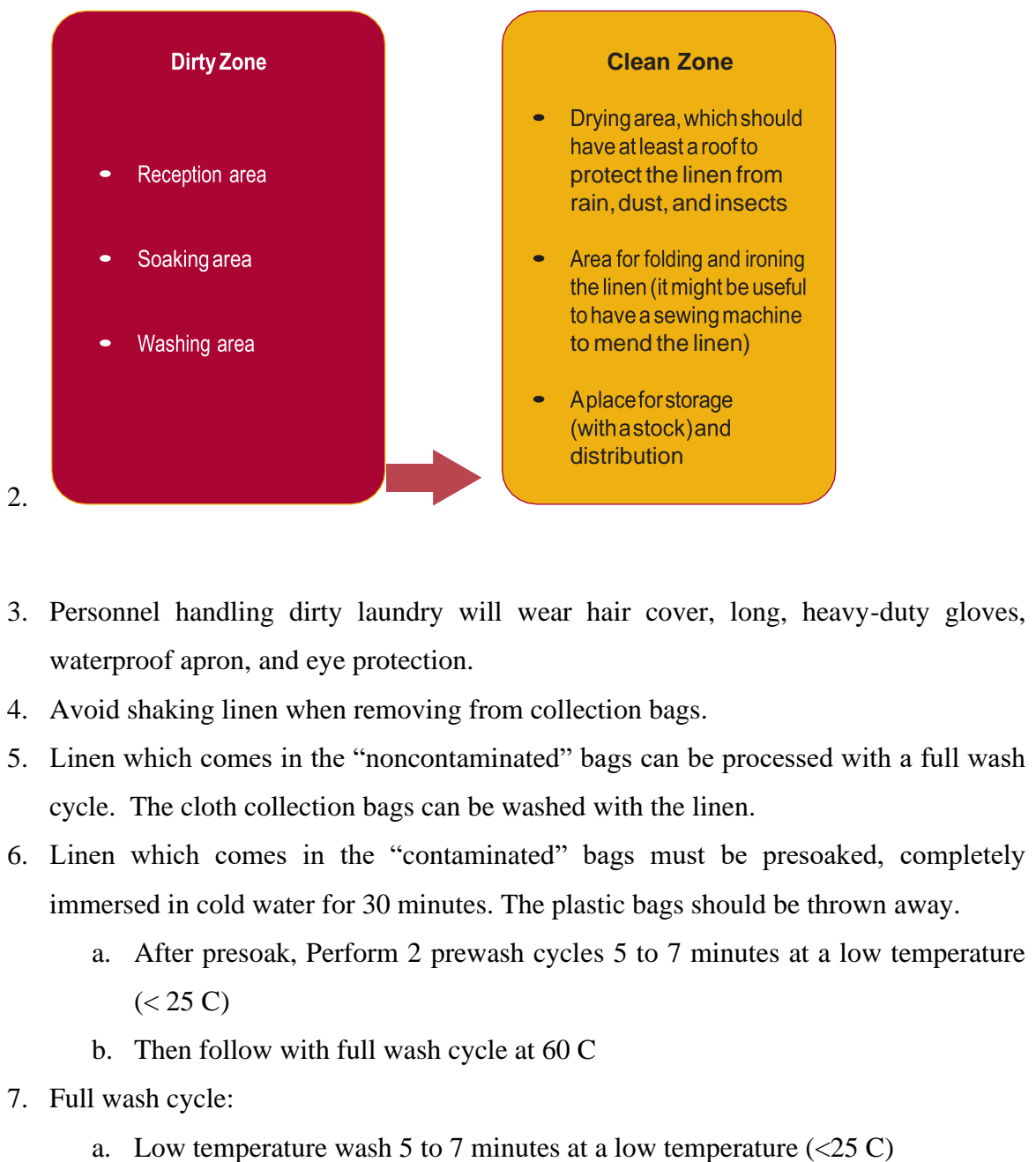
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POLICY: PROCESSING SOILED LINEN IN LAUNDRY FACILITY

PURPOSE: To assure decontamination, washing, drying and storage of linens. To assure that the dirty area and clean areas of the laundry are separated to avoid contamination.

POLICY

1. The laundry area should be separated into a dirty and clean processing area
 - a. Dirty area includes reception/intake, any pre-soaking or handwashing, and washing
 - b. Clean area includes drying, ironing, folding, storage



- b. Wash 15 minutes at 60C
 - c. Rinse
 - d. Disinfect 2-3 minutes with 0.1% chlorine bleach
 - e. Rinse x 3 cycles
 - f. Spin
8. Technicians should wear hair cover, clean gloves, and apron to transfer washed linen to dryer.
9. Dry linen in dryer.
10. Remove linen from dryer promptly. Fold linen for sterile processing. Fold and iron linen for distribution to wards.
11. DO NOT IRON LINEN WHICH WILL BE STERILIZED.
12. Do not leave wet linen in washer overnight.
13. Inspect linen for tears and other damage after drying. Give torn linen to supervisor for repair.
14. Transfer clean linen which will be sterilized to autoclave area through shutters which connect room 4 (laundry) to room 3 (sterilization room).
 - a. Only authorized personnel can open the shutters between laundry and sterile processing room
 - b. Develop a schedule to expedite the passage of the instrument packs and linen which need to be processed into sterilization room
 - c. Limit time when partitions are opened to slide cleaned, folded linen into room 3 for sterilization.
 - d. All machines will be turned off during the opening and closing of the shutters.
 - e. Signage will be developed and posted to remind personnel of critical procedures.
15. Clean linen will be stored covered. Clean linen will be stored away from dirty linen. Store clean linen on shelves off the floor.
16. Place clean linen on clean linen trolley to transport to wards. Cover clean linen during transport.
17. The clean linen trolley will be washed with soap and water and then wiped with a disinfectant solution once a day.
18. The clean linen trolley will not be used to transport dirty linen.

References:

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Disease Prevention and Control Department

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Chapter FOUR: Preparation, and transportation of instruments from CLINICAL AREAS to sterilization facility

POLICY: PREPARATION, WASHING, PACKING OF STERILE INSTRUMENTS PACKS in clinical areas

PURPOSE: To facilitate the collection, cleaning, and processing of sterile instruments. Safe collection, minimal handling, and safe transport maximizes the life and use of precision instruments, keeps operating sets together and makes disinfection and cleaning easier. - Contaminated surgical instruments will be decontaminated, washed, dried, and packed in trays and wrapped in the respective sites before transportation for sterilization. The wrapped trays of prepared instruments will enter the laundry room and transferred for sterilization into the sterilization room via shuttered window to avoid cross contamination of materials.

PROCEDURE:

DISINFECTION AND CLEANING IN THE OR, L&D WARD AND NICU

Physical requirements of the disinfection and cleaning area

1. Bucket #1 with disinfectant (0.5% bleach) for disinfection
2. Bucket # 2 with clean water for rinse
3. Receiving counter for disinfected instruments
4. 2 sinks with clean water supply (one for washing, one for rinse)
5. Counter for cleaned equipment for drying
6. Clean area for assembling and wrapping instrument trays

PROCEDURE FOR DISINFECTION AND CLEANING INSTRUMENTS

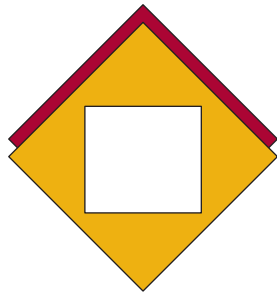
1. Prepare fresh disinfection solution once a day and replace more frequently if cloudy.
2. Personnel cleaning instruments should wear heavy gloves, plastic apron, and eye protection when handling instruments
3. Soak instruments immediately after every procedure in disinfectant for 10 minutes. USE A TIMER.
4. Place disinfected instruments into rinse bucket. Do not leave longer than 1 hour.
5. Change water in rinse bucket after every set of instruments is disinfected.
6. Scrub disinfected instruments with liquid soap and soft brush to remove all visible contamination.

7. Rinse in clean water to remove all soap.
8. Air dry or use lint free cloth to dry. Place on clean counter. Do not mix dirty and clean instruments.
9. To ensure proper contact of all surfaces by the steam inside the pack:
 - a. All jointed instruments should be in the opened or unlocked positions.
 - b. Instruments composed of more than one part or sliding parts should be disassembled.
 - c. Do not tie instruments tightly together by rubber bands or any other means that will prevent steam contact with all surfaces.
9. Wrap sharps in gauze to prevent accidental injury and preserve edges.
10. Make sure that instruments composed of different materials (stainless steel, carbon steel, etc.) are separated and placed in different trays. Instruments made of carbon steel should be placed on a towel in stainless steel baskets.
11. Empty canisters should be placed upside-down to prevent accumulation of water.
12. Rinse tubing after cleaning with pyrogen free water. When placing in tray, ensure that both ends are open, without sharp bends or twists.
13. Inspect the instruments for damage. Any damaged instruments should be given to the nursing supervisor. **DO NOT REPACKAGE DAMAGED INSTRUMENTS.**
14. Place in instrument trays to be sent to sterilization facility.
15. Place a sterilization indicator strip in each tray.

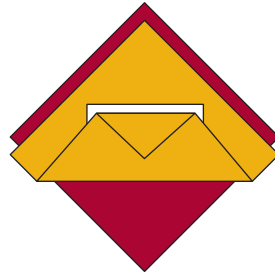
WRAPPING INSTRUMENT TRAYS

Before sterilization: packaging protects the clean instruments from the risk of contamination.

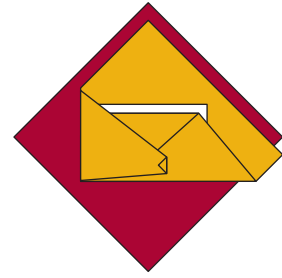
- Packaging must allow the packages to be opened easily and aseptically.
 - Packaging must be permeable to steam, water repellent, resistant to tears and impermeable to microorganisms.
 - After sterilization: packaging must keep the instruments sterile until they are used.
1. Wrap instrument trays in two sheets of paper or cloth which are 3-4 times the size of the item to be wrapped in both length and width.
 2. Wrap baskets in 1 sheet of paper and then cover with a separate piece of paper or cloth
 3. Secure with heat sensitive tape
 4. Use the American folding technique shown below



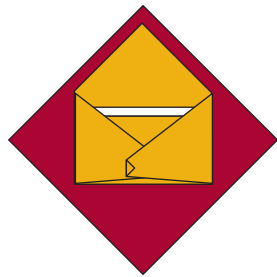
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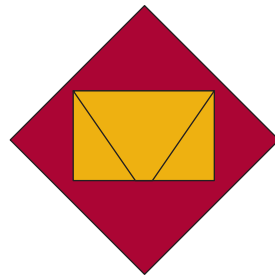
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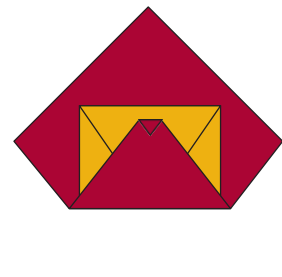
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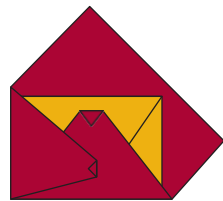
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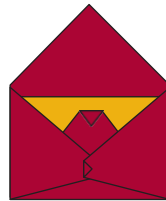
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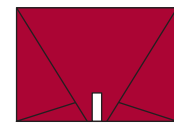
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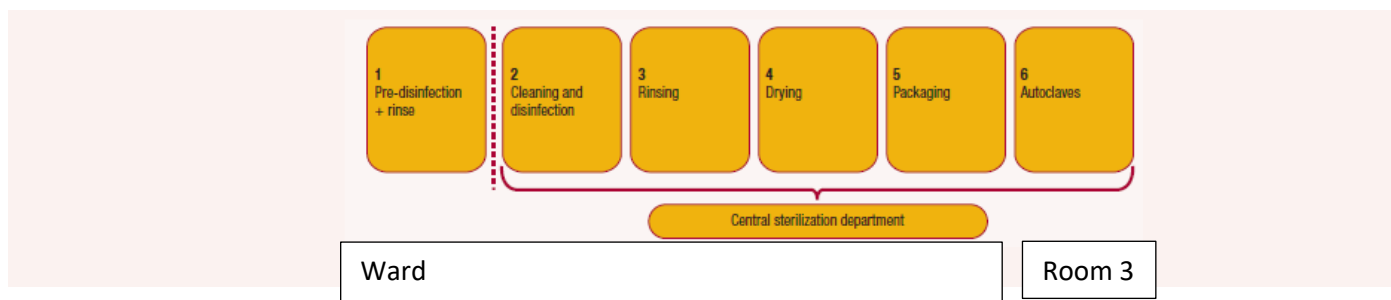
Figure 7 American folding technique

POLICY: Transport of instrument packs to sterilization facility

PURPOSE: Contaminated surgical instruments will be decontaminated, washed, dried, and packed in trays and wrapped in the respective sites before transportation for sterilization. The wrapped trays of prepared instruments will enter the laundry room and transferred for sterilization into the sterilization room via shuttered window to avoid cross contamination of materials.

PROCEDURE:

1. Instrument trays will be collected and sent for sterilization twice a day.
2. Transport instruments on a trolley designated for clean instruments.
3. The sterilization facility will be run on a workflow which separates dirty from clean procedures and does not allow any back flow of dirty into clean areas.



- a. Room 4 is the room where clean instrument packs are checked in. Clean instrument packs will be transferred to the sterilization room through a shuttered partition which may only be opened by qualified personnel.
 - b. Room 3 is a sterile room where the clean, assembled instrument packs are sterilized and stored until distributed.
 - c. Access to room 3 is restricted to qualified personnel.
 - d. No food, beverage or personal items will be allowed in rooms 3 and 4
4. The nonsterile cleaned instrument sets will be logged into the sterilization facility in room one.
 5. Nonsterile cleaned instrument sets should be handed over according to the following table (Figure 2:1)

Date	Time	Specific service area where materials came	Type of material	Amount in numbers	Name and signature of the person who brought the materials	Name and signature of recipient	Remark

Figure 2:1 Table showing how to log in instrument sets for sterilization to perinatal laundry service

6. The instrument sets will be transferred to room 3 through shutters which connect the laundry room with the sterilization room.
 - a. Only authorized personnel can open the shutters between laundry and sterile processing room
 - b. Develop a schedule to expedite the passage of the instrument packs which need to be processed into sterilization room
 - c. Limit time when partitions are opened to slide cleaned, folded linen into room 3 for sterilization.
 - d. All machines will be turned off during the opening and closing of the shutters.
 - e. Signage will be developed and posted to remind personnel of critical procedures.
7. The instrument sets will be sterilized according to the sterilization protocols.
8. Every sterilized pack will be registered with date, contents, cycle #, TST and name of processor.
9. Sterilized sets will be temporarily stored in room 3 and distributed to the OR area twice a day or as needed. Sterilized instrument packs will be distributed to L&D twice a day or as needed. Sterilized instrument packs will be distributed to NICU once a day or as needed.

10. Sterilized sets will be inspected for any damage to packaging prior to dispensing. The packs will not be dispensed if there are any tears or signs of water contamination or damage to the package.

POLICY: Transport of Sterilized Packs FROM STERILE PROCESSING TO OR Area, Labor & Deliver and NICU

PURPOSE: Assure timely receipt of sterilized instrument packs to clinical areas with safe transport assuring protection of the sterile instrument trays.

PROCEDURE

1. Sterilized sets will be transported by a trolley designated to transport sterilized packs.
2. Sterilized sets will be stored in a clean, dry, dust free, lint free storage area near the OR area.
3. The sterilized sets will be on shelves 20cm off the floor, 45 cm below the ceiling, 15 cm from the outside wall.
4. Sterilized sets will be inspected for any damage to packaging prior to dispensing. The packs will not be dispensed if there are any tears or signs of water contamination or damage to the package.
5. The sterile instrument packs will be dispensed on a “first in/first out” rotation.
6. Clean transport trolley once a day with soap and water and then wipe with a surface disinfectant solution.

References:

Infection Prevention Guidelines for Healthcare Facilities in Ethiopia

Federal Ministry of Health Ethiopia

Disease Prevention and Control Department

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CHAPTER FIVE: PROCESSING INSTRUMENTS TRAYS RECEIVED FROM CLINICAL AREAS FOR STERILIZATION

PURPOSE: To safely sterilize instruments and surgical packs and linens using the Tuttnauer 5596 Autoclave

LOADING AUTOCLAVE

1. During loading and unloading use safety gloves and glasses in accordance with local safety regulations and good practice.
2. Do not overload sterilizer trays. Overloading will cause inadequate sterilization and drying.
3. Wrapped instruments should be packed in material which promotes drying, such as autoclave bag, autoclave paper and muslin towels.
4. Do not wrap the packages too tightly.
5. Place packs upright on trays, side by side.
6. Packs should not touch the chamber walls.
7. Do not arrange the packs in the sterilizer too close to each other. Allow approximately 1" between trays to permit circulation of steam.
8. Leave space between the packs or wrapped instruments to allow complete removal of air pockets in the air removal stage, and for free penetration of steam in the heating and sterilization stages.
9. Once a week use a biological spore test indicator in any load to ensure sterilization.

STERILIZATION

1. There are 10 different programs for sterilization. Make sure that the program for sterilization matches the manufacturer's recommendations for sterilization of the appropriate items.

Cycle no.	Program
01	Warm up/Unwrapped rigid instruments

02	Unwrapped 134
03	Unwrapped 121
04	Wrapped 134
05	Wrapped 121
06-07	Wrapped pouches 134
8	Prion
9	Bowie & Dickie test
10-	Leak test

OPERATING INSTRUCTIONS

1. Check that the feed water valve is open.
2. Check that the compressed air valve is open.
3. Power the autoclave by turning on the main power switch, observe the gauge and see that the generator reached its pressure.
4. Check that the jacket pressure gauge, reaches 2.4 bars,
The sterilization cycle can be started.
5. Open the door by turning the door wheel handle, counterclockwise to release the locking arms.
6. Load the sterilizer.
7. Close the door by pushing it towards the chamber frame and turning the wheel handle clockwise until the word **READY** appears in the first row, indicating autoclave is ready to start operation.
8. Select the sterilization program according to the type of material to be sterilized by pressing the relevant keys as described in Chapter 4.
9. Press the **START** key, to operate the cycle. The entire sterilization process automatically proceeds. The signal light **RUN** on the control panel is lit.
10. At the end of the cycle a buzzer sounds, and the word **END** is displayed. Open the door as described in par 5 while **OPEN** is displayed above this key.
11. Take out the sterilized material from the chamber following the steps indicated in the 'Unloading' paragraph.

Note: In case of failed cycle or manual stop by operator, the two LED's RUN and FAIL are lit. The reason for failure is displayed on the screen.

UNLOADING

1. During loading and unloading use safety gloves and glasses with local safety regulations and good practice.
2. Upon cycle completion, unload the load from the sterilizer immediately.
3. Put the carriage or the containers aside to cool down.
4. DO NOT transfer hot load to metal shelves for cooling.
5. To prevent condensation, when removing the packs from the chamber, place sterile trays and packs on a surface padded with paper or fabric.
6. Do not store trays or packs until they reach room temperature. This usually takes about an hour.
7. Perform a visual inspection to ascertain that sterilizing indicators have made the required color change, and that the load is dry.
 - a. Wrapped instrument packs are considered unacceptable if there are water droplets or visible moisture on the outer surfaces of the packages when they are removed from the steam sterilizer chamber.
 - b. The package has been compressed.
 - c. The package is torn.
 - d. The load fell on the floor.
 - e. Condensation can be observed on the lid.
 - f. The PCD or other Indicator present – Faulty cycle.
8. Maintain a steam sterilizer log including date, time, type of equipment processed, cycle type, mechanical (time, temperature, and pressure) and chemical (internal and external chemical test strips) indicators.
9. To ensure correct operation, when available test for *Bacillus stearothermophilus*, weekly and as needed.
10. Autoclave should be tested daily with an air-removal test to ensure proper air removal.
11. Ensure that the small drain strainer at the bottom of the sterilizer is not clogged. This may result in trapping air inside the sterilizer.
12. Follow the manufacturer's manual for maintenance of the sterilizer. In some cases, however, a weekly flush of hot liquid soap through the exhaust line will keep it cleaned out.

13. After sterilizing, items wrapped in cloth or paper are considered sterile if the pack remains clean, dry, and intact. Unwrapped items must be used immediately or stored in covered sterile containers.

14. Dispense in a “first in first out” rotation.

15. Shelf life

- a. The shelf life of an item after sterilization is event related. The item remains sterile until something causes the package or container to become contaminated
- b. To make sure items remain sterile until you need them, prevent events that can contaminate sterile packs, and protect them by placing them in plastic covers (thick polyethylene bags).
- c. Before dispensing any sterile item, look at the package to make sure the wrapper is intact, the seal unbroken and is clean and dry (as well as having not water stains).
- d. If the quality of wrapping cloth is poor and plastic bags are not available, limiting the shelf life is a reasonable option to ensure the sterility of the instruments.

References:

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CHAPTER SIX: - HOW TO OPERATE THE IMESSA lm55 WASHER

POLICY: USING THE IMESA LM 55 WASHING MACHINE

1. Assure that there is sufficient water pressure prior to turning on the washing machine.
2. Machine must be loaded based on the capacity stated on the machine=55kg. DO NOT EXCEED WEIGHT
3. Sort the linen into groups of homogeneous fabrics and fiber to have uniform washing of the entire load.
4. Weigh the laundry load prior to loading the machine. Do not exceed 50 kg.
5. Choose the correct washing program based on the manufacturer's washing recommendations.
 - a. Be sure to check the linen label for the manufacturer's washing recommendations.
 - b. Here are the most common international symbols



Maximum temperature: 70°; Mechanical action: middle.



Maximum
temperature: 60°C
Mechanical action: soft



Maximum temperature: 40°C; Mechanical action: very soft



Only hand washing



No washing

6. The weight of the linen loaded must not exceed the posted capacity of the machine (55kg). Weigh each load before loading the drum.
7. Be sure the drum is empty before the machine is loaded.
8. Be sure that there is no linen caught in the door when it is closed.
9. Press the door closed.

10. When the machine is started the door locks automatically.
11. Turn off the machine by turning off the main switch before opening the door if it is in the middle of a cycle.
12. Once the door is locked the main menu appears on the screen.
13. Select the correct program for the linen to be washed.
 - a. PROGRAM 1
Prewash 40°C Wash 90°C Rinses: 3
Spin: 4
Max spin speed: 1000 RPM
 - b. PROGRAM 2
Prewash 30°C Wash 60°C Rinses: 3
Spins: 4
Max spin speed: 1000 RPM
 - c. PROGRAM 3
Prewash 35°C Wash 40°C Rinses: 3
Spins: 4
Max spin speed: 1000 RPM
 - d. PROGRAM 4
Prewash cold
Wash 30°C Rinses: 3
Spins: 3
Max spin speed: 1000 RPM
 - e. PROGRAM 5 “WOOL”
Prewash cold Wash 30°C Rinses: 3
Spins: 1
Max spin speed: 450 RPM
 - f. PROGRAM 6 “COLD”
Prewash cold Wash cold Rinses: 3

Spins: 4

Max spin speed: 1000 RPM

g. PROGRAM 7 “HOSPITAL”

Prewash 40°C Wash 90°C Rinses: 5

Spins: 6

Max spin speed: 1000 RPM

h. PROGRAM 8 “VERY DIRTY WOOL”

Prewash cold

Wash 30°C

Rinses: 5

Spins: 2

Max spin 0 RPM

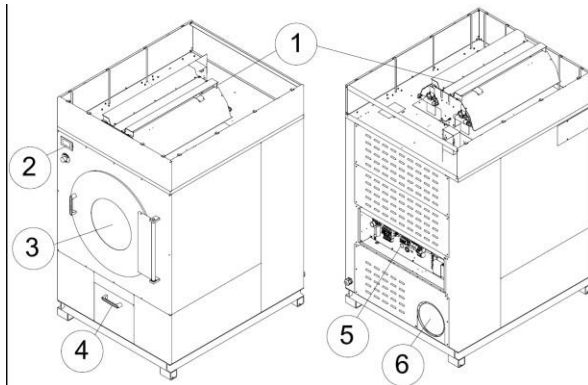
DAILY WASHING MACHINE MAINTENANCE

1. Only qualified personnel will operate the machine.
2. Make sure that there is sufficient water pressure prior to turning on the machine.
3. Make sure the electrical supply to the machine is off before proceeding with any service.
4. Clean the top and front external panel every day with a neutral detergent to eliminate detergent stain.
5. Clean the detergent box daily.
6. Door gaskets need to be cleaned daily.
6. Clean the air inlet and exhaust daily.
7. Clean the inside of the drum every day. Make sure there are no deposits inside.
8. At the end of the working day, leave the door open to air out the inside of the drum.
9. At the end of the day, turn off the electrical supply and the water to the machine.

CHAPTER SEVEN: USING THE IMESA 55ES DRYER

PROCEDURE:

Parts of the IMESA 55ES Dryer



1. Heater
2. Control panel
3. Door
4. Lint trap
5. Electrical connection
6. Hot air exhaust

OPERATION OF THE DRYER

1. Sort the linen into groups of compatible fabrics.
2. Check the labels for instructions on the temperature at which the fabric should be dried.



Normal temperature



Low temperature



Do not tumble

3. Weigh each load of wet linen prior to loading the dryer. Do not exceed 50 kg.

4. Load the dryer with only the weight specified on the machine=55kg. DO NOT OVERLOAD.
5. Do not dry rubber, latex, or foam objects.
6. Any metallic objects (buckles, hooks, etc.) must be wrapped in cloth to avoid scratching the drum.
7. Do not dry dripping linen. All linen must be spun before drying.
8. Be sure that there are no solid items caught up in the pieces of linen.
9. Do not dry any material washed in flammable or chemical solutions.
10. Make sure that compatible detergents and softeners are used correctly.
11. Be sure to check that the drum is empty before loading.
12. Be sure that no linen is caught between the door and the front panel when closing the door.
13. Close the door.
14. Select the icon for the drying cycle appropriate for the load.
15. Clean the lint filter after every load. Clean the trap using only the hand. Do not use sharp objects.
16. Never operate the dryer without the lint filter in place.

AVAILABLE DRYING PROGRAMS

PRO G.	TYPE	DRYIN G		COOLIN G	
		°C	Min.	° C	Min .
01	RESIDUAL HUMIDITY	90	DRY	40	3
02	RESIDUAL HUMIDITY	80	IRON DRY	40	3
03	RESIDUAL HUMIDITY	75	DRY	40	3
04	RESIDUAL HUMIDITY	60	DRY	40	3
05	TIME	50	50	40	3

06	TIME	40	50	40	3
07	TIME	90	40	40	3
08	TIME	80	40	40	3
09	TIME	70	40	40	3
10	TIME	60	40	40	3
11	TIME	50	40	40	3
12	TIME	40	40	40	3
13	TIME	90	30	40	3
14	TIME	80	30	40	3
15	TIME	70	30	40	3
16	TIME	60	30	40	3
17	TIME	50	30	40	3
18	TIME	40	30	40	3
19	TIME	90	20	40	3
20	TIME	80	20	40	3
21	TIME	70	20	40	3
22	TIME	60	20	40	3
23	TIME	50	20	40	3
24	TIME	40	20	40	3
25	TIME	90	15	40	3
26	TIME	80	15	40	3
27	TIME	70	15	40	3
28	TIME	60	15	40	3
29	TIME	50	15	40	3
30	TIME	40	15	40	3

DAILY OPERATION OF IMESA DRYER

1. At the end of each drying cycle, clean the filter from fluff.
2. Never operate the dryer without the filter in place.
3. Do not allow fluff to build up around the dryer.

4. Wipe surface and interior of machine with clean dry cloth. Do not use abrasive cleaning materials.
5. Do not leave wet linen in the dryer overnight.

DAILY MAINTENANCE

1. Make sure the dryer has completed its cycle before stopping for the day.
2. Make sure that the drum is empty. Do not leave linens in dryer overnight.
3. Clean the top and front surface with a neutral detergent to remove any dirt and stains.
4. Check that there is not dirt or melted deposits on the inside of the drum and wipe surface clean with neutral detergent using a soft dry cloth.
5. Check the integrity of the door gaskets.
6. Make sure that the lint filter is clean.
7. Turn off the machine.
8. Leave dryer door open.

CHAPTER SEVEN: - HOW TO OPERATE TUTTNAUER 5596 AUTOCLAVE AND OMNIPURE WATER SOFTENER MACHINE

PROCEDURE: USING THE TUTTNAUER 5596 AUTOCLAVE FOR STERILIZATION OF INSTRUMENTS AND SURGICAL PACK

PURPOSE: To safely sterilize instruments and surgical packs and linens using the Tuttnauer 5596 Autoclave

LOADING AUTOCLAVE

7. During loading and unloading use safety gloves and glasses in accordance with local safety regulations and good practice.
 8. Do not overload sterilizer trays. Overloading will cause inadequate sterilization and drying.
 9. Wrapped instruments should be packed in material which promotes drying, such as autoclave bag, autoclave paper and muslin towels.
 10. Do not wrap the packages too tightly.
 11. Place packs upright on trays, side by side.
 12. Packs should not touch the chamber walls.
-
7. Do not arrange the packs in the sterilizer too close to each other. Allow approximately 1" between trays to permit circulation of steam.
 8. Leave space between the packs or wrapped instruments to allow complete removal of air pockets in the air removal stage, and for free penetration of steam in the heating and sterilization stages.
 9. Once a week use a biological spore test indicator in any load to ensure sterilization.

STERILIZATION

- There are 10 different programs for sterilization. Make sure that the program for sterilization matches the manufacturer's recommendations for sterilization of the appropriate items.

Cycle no.	Program
01	Warm up/Unwrapped rigid instruments
02	Unwrapped 134
03	Unwrapped 121
04	Wrapped 134
05	Wrapped 121
06-07	Wrapped pouches 134
8	Prion
9	Bowie & Dickie test
10-	Leak test

OPERATING INSTRUCTIONS

1. Check that the feed water valve is open.
2. Check that the compressed air valve is open.
3. Power the autoclave by turning on the main power switch, observe the gauge and see that the generator reached its pressure.
4. Check that the jacket pressure gauge, reaches 2.4 bars,
The sterilization cycle can be started.
5. Open the door by turning the door wheel handle, counterclockwise to release the locking arms.
6. Load the sterilizer.
7. Close the door by pushing it towards the chamber frame and turning the wheel handle clockwise until the word **READY** appears in the first row, indicating autoclave is ready to start operation.
8. Select the sterilization program according to the type of material to be sterilized by pressing the relevant keys as described in Chapter 4.
9. Press the **START** key, to operate the cycle. The entire sterilization process automatically proceeds. The signal light **RUN** on the control panel is lit.
10. At the end of the cycle a buzzer sounds, and the word **END** is displayed. Open the door as described in par 5 while **OPEN** is displayed above this key.
11. Take out the sterilized material from the chamber following the steps indicated in the 'Unloading' paragraph.
Note: In case of failed cycle or manual stop by operator, the two LED's **RUN** and **FAIL** are lit. The reason for failure is displayed on the screen.

UNLOADING

8. During loading and unloading use safety gloves and glasses with local safety regulations and good practice.

9. Upon cycle completion, unload the load from the sterilizer immediately.
 10. Put the carriage or the containers aside to cool down.
 11. DO NOT transfer hot load to metal shelves for cooling.
 12. To prevent condensation, when removing the packs from the chamber, place sterile trays and packs on a surface padded with paper or fabric.
 13. Do not store trays or packs until they reach room temperature. This usually takes about an hour.
 14. Perform a visual inspection to ascertain that sterilizing indicator have made the required color change, and that the load is dry.
 - b. Wrapped instrument packs are considered unacceptable if there are water droplets or visible moisture on the outer surfaces of the packages when they are removed from the steam sterilizer chamber.
 - b. The package has been compressed.
 - c. The package is torn.
 - d. The load fell on the floor.
 - e. Condensation can be observed on the lid.
 - f. The PCD or other Indicator present – Faulty cycle.
8. Maintain a steam sterilizer log including date, time, type of equipment processed, cycle type, mechanical (time, temperature, and pressure) and chemical (internal and external chemical test strips) indicators.
 9. To ensure correct operation, when available test for *Bacillus stearothermophilus*, weekly and as needed.
 10. Autoclave should be tested daily with an air-removal test to ensure proper air removal.
 11. Ensure that the small drain strainer at the bottom of the sterilizer is not clogged. This may result in trapping air inside the sterilizer.
 12. Follow the manufacturer's manual for maintenance of the sterilizer. In some cases, however, a weekly flush of hot liquid soap through the exhaust line will keep it cleaned out.
 13. After sterilizing, items wrapped in cloth or paper are considered sterile if the pack remains clean, dry, and intact. Unwrapped items must be used immediately or stored in covered sterile containers.
 14. Dispense in a "first in first out" rotation.

15. Shelf life

- e. The shelf life of an item after sterilization is event related. The item remains sterile until something causes the package or container to become contaminated
- f. To make sure items remain sterile until you need them, prevent events that can contaminate sterile packs, and protect them by placing them in plastic covers (thick polyethylene bags).
- g. Before dispensing any sterile item, look at the package to make sure the wrapper is intact, the seal unbroken and is clean and dry (as well as having not water stains).
- h. If the quality of wrapping cloth is poor and plastic bags are not available, limiting the shelf life is a reasonable option to ensure the sterility of the instruments.

References:

Infection Prevention Guidelines for Healthcare Facilities in Ethiopia

Federal Ministry of Health Ethiopia

Disease Prevention and Control Department

Addis Ababa, Ethiopia

JULY 2004

Sterilization Guidelines International Committee of the Red Cross

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Tuttnauer 5596 Autoclave Manual

CHAPTER NINE: - MAINTENANCE OF THE PERINATAL CENTRAL SUPPLY

STAFFING, CLEANING AND MAINTENANCE PROTOCOLS FOR LAUNDRY AND STERILIZATION ROOMS

CONSTRUCTION

1. The walls and floors of laundry and sterilization rooms will be covered with ceramic tiles with cement grout.
2. The ceilings of both rooms will be painted with antimicrobial paint.
3. The floors will be graded for drainage of water.
4. All machines to be absolutely leveled using leveling feet. This will create a gap between the floor and the bottom of the machines which must be cleaned frequently.
5. The grout between ceramic tiles will be sealed with 2-3 layers of silicone solution. This process must be repeated 2 times per year to prevent microbial growth in grout interstices.
6. A ready supply of replacement ceramic tiles will be maintained to replace broken, chipped surfaces as soon as possible.

STAFF PROTOCOLS

1. The laundry will be manned by trained technicians.
2. The sterilization facility will be manned by nursing staff trained in sterile processing procedures.
3. The laundry staff will don dedicated footwear, uniforms, and hair covers prior to entering laundry facility.
4. The laundry staff will wear eye protection, water-proof aprons and heavy-duty gloves while handling dirty laundry.
5. The laundry staff will wear eye protection, hair covers, clean aprons and clean gloves when removing clean laundry from washer and transfer to dryer and when removing clean linen from dryer.

6. The laundry staff will wear eye protection, hair covers, clean aprons and clean gloves when folding linen for sterile packs and when ironing and folding clean, nonsterile linen.
7. The shutters between the laundry room and sterile processing room will only be opened by designated personnel, at specified times and all laundry machinery will be turned off during the open period.
8. The sterilization nurses will don dedicated footwear, uniforms, hair covers, and masks prior to entering sterile processing room.
9. Traffic into the sterilization room will be strictly monitored and only come from door 6.
10. Exit of sterile processed instruments, linens and packs will be in specially designated carts through doors 6 & 7.
 - a. Sterile packs will be stored briefly in the sterile processing room and then moved to the sterile storage area designated in the OR, L&D and NICU on a regular schedule.
11. There will be a strict protocol of when and how the sliding shutters between the laundry and the sterilization will be opened.
 - a. Only authorized personnel can open the shutters between laundry and sterile processing room
 - b. Develop a schedule to expedite the passage of the instrument packs which need to be processed into sterilization room
 - c. Limit time when partitions are opened to slide cleaned, folded linen into room 3 for sterilization.
 - d. All machines will be turned off during the opening and closing of the shutters.
12. Signage will be developed and posted to remind personnel of critical procedures.

CLEANING

1. Clean Floor every day at the beginning of the shift.
 - a. Sweep floor to remove dust/lint.
 - b. Clean the gaps between the floor and all machines to avoid build-up of dust and lint.
 - c. Wipe floor with chlorine bleach solution.
2. Wipe down walls once a week with chlorine bleach solution.
3. Clean the gap between the water pipes and the wall with chlorine bleach solution weekly.
4. Water flush floors once a week to clean under autoclave and water softener and washer and dryer.
5. Clean ceiling once a week in the sterile processing room and laundry.
6. Clean seams between walls and service channels once a week to prevent build-up of dust and moisture.
7. Clean and dust split air conditioning units in sterile processing room and laundry weekly to prevent buildup of dust and moisture.
8. Clean air duct and flap which extracts moisture from the sterile processing room and laundry every week.

CHAPTER 10: EQUIPMENT MAINTENANCE

IMESA LM55 WASHER

DAILY WASHING MACHINE MAINTENANCE

1. Only qualified personnel will operate the machine.
2. Make sure there is adequate water supply before operating the washing machine.
3. Make sure the electrical supply to the machine is off before proceeding with any service.
4. Clean the top and front external panel every day with a neutral detergent to eliminate detergent stain.
5. Clean the detergent box daily.
6. Clean door gaskets daily.
7. Clean the air inlet and exhaust daily.
8. Clean the inside of the drum every day. Make sure there are no deposits inside.
9. At the end of the working day, leave the door open to air out the inside of the drum.
10. At the end of the day, turn off the electrical supply and the water to the machine.

WASHING MACHINE MAINTENANCE EVERY THREE MONTHS-biomed

1. Check the integrity of the drum belts and the drum surface
2. Be sure that there are no deposits on the drum surface.
3. Check that the drain valve is clean and open.
4. Check and clean the water inlet valve and inlet filter.

WASHING MACHINE YEARLY MAINTENANCE-biomed the authorized service center must be contacted to perform the following:

1. Clean the machine inside.
2. Check the efficiency of the wiring contacts.
3. Check the tightness and the integrity of the rubber parts.
4. Grease the mechanical parts.
5. Clean the motor air inlet

IMESA 55ES DRYER

DAILY MAINTENANCE

1. At the end of each drying cycle, clean the filter from fluff.
2. Never operate the dryer without the filter in place.
3. Do not allow fluff to build up around the dryer.
4. Wipe surface and interior of machine with clean dry cloth. Do not use abrasive cleaning materials.
5. Do not leave wet linen in the dryer overnight.

WEEKLY MAINTENANCE

1. Clean the drum with a soft dry cloth. Check for any deposits from melted plastic.
2. Verify the integrity of the inside door gasket.

EVERY 3 MONTHS MAINTENANCE-biomed

1. Check and clean the fan.
2. Check and clean the suction.
3. Check and clean the drum and ventilator cooling motor fans.

YEARLY MAINTENANCE-authorized technician

1. Clean the burner or the heating element from fluff and other
2. Clean internal side of the dryer
3. Check for leakage in the pneumatic circuit
4. Check for leakage of the gas valve

TUTTNAUER 5596 AUTOCLAVE

DAILY MAINTENANCE

1. Clean the strainer at the bottom of the chamber.
2. Verify that the door gasket and the surface that the gasket is pressed on are clean.
3. Before starting operation, ensure the compressor tank is drained of water (If applicable).
4. In case the autoclave is used to sterilize liquids, it is imperative to clean the chamber at the end of every day.
- 5. Clean the chamber while the autoclave is cold.**

WEEKLY MAINTENANCE

1. Clean the cabinet and door parts, the internal walls of the autoclave, the shelves and the shelf rails with a soft cloth and detergent. Clean the chamber while the autoclave is cold. The detergent should be washed and flushed away.

Caution: Do not use steel wool or steel brush as this can damage the chamber!

2. Place several drops of oil on all the door axis.
3. Verify that the water quality complies with the requirements as detailed in par. 2.4 'Water quality'.

MONTHLY MAINTENANCE-biomed

1. Allow the safety valve to blow off by lifting the handle up for a few seconds.

Do it very carefully to avoid injuries!!!

EVERY 3 MONTHS MAINTENANCE-biomed

1. Clean water strainers on pipelines while autoclave does not operate (idle).
2. Verify sewage pipe is not clogged ensuring free drainage of sewage liquids. It is important that sewage liquids do not overflow at the working site.
3. Disassemble the steam –traps and clean them. The cleaning operation

requires the cleaning filter inside the steam-trap to be removed, cleaned, and replace. This can be done by rinsing and removing any dirt, which causes blockage.

4. Check the piping connections and tighten where necessary to avoid leakage.

EVERY 6 MONTHS MAINTENANCE-biomed

1. Replace 0.02 μ air filter

YEARLY MAINTENANCE-biomed

1. Perform an overall check of the locking system and replace worn parts.
2. Check and tighten where necessary the electrical connections in the electrical board, connection box, motors, electrical valves, locking device screws and instrumentation.
3. Clean the electronic control unit, using a vacuum cleaner.
4. Check the door gasket and replace if damaged.
5. Calibrate and validate the autoclave.
6. Perform safety tests to (pressure vessel and electricity) referring to local rules, regulations, or law shall be applied in compliance with the law.

Chapter Eleven: - Fire Safety Training

POLICY: Fire Safety Plan and Training

PURPOSE: To ensure in case of fire all personnel working in the perinatal laundry facility know how to respond in case of fire.

PROCEDURE:

A. Signage

1. Fire safety signs will be posted in each room in the perinatal laundry facility close to the door.

B. Fire Extinguishers

1. Fire extinguishers should be placed on walls at waist height to make them easier to grab and to discourage their misuse (i.e., as door stops.)
2. Small CO2 fire extinguishers will be located in rooms 1 and 2 (staff amenity rooms).
3. Large CO2 fire extinguishers will be mounted in room 3 (sterilization room) and room 4 (laundry).
4. There must be clear access to fire extinguishers at all times.
5. All personnel who are expected to use a portable extinguisher should be trained in how to do so safely, including the selection of the right type of extinguisher.
6. All extinguishers should be checked at least every 12 months.

C. Procedure in the event of fire.

1. Individual staff members trained in fire procedures will be appointed as fire marshals.
2. There should always be one fire marshal on duty when the facility is in use.
3. The fire marshal will keep a register of the staff present in the facility to ensure that all personnel have left the building in the event of fire or drills.
4. A fire assembly point outside the building must be designated and its location indicated on the signage in the facility.

5. In the event of fire, the fire marshal should call out “fire, evacuate the building carefully; do not run, go to the fire assembly point.”
6. The fire marshal should then immediately attempt to extinguish the fire as quickly as possible.
7. If the fire is not extinguished within 5 minutes, the fire marshal must leave the building immediately and the Gondar fire department must be summoned.
8. Staff may only re-enter the building when the fire marshal indicates that it is safe to do so.

D. Fire Drills

1. Fire drills should be held once every 12 months.
2. The procedure for response to fire should be followed.

Gondar University Hospital – cleaning and sterilization facility.

Fire safety plan.

- 1) Signage.
- 2) Fire Extinguishers.
- 3) Fire Drills.

1) Signage.

A fire safety procedure sign should be fixed adjacent to the doors in each of the 4 rooms (including the passageway between rooms 2 and 3.)

An illustration of the UK version is attached.

2) Fire Extinguishers.

Fire extinguishers should be installed in rooms 1,2 (staff amenities,) and the sterilization and laundry rooms.

The table below gives a guide to the type that should be considered, based on UK standards, followed by general notes on their placement and their use:

Label	Type	Suitable for Fire Classes	Limitations
Red	Water	A (combustible materials like wood, paper, etc.)	Generally unsafe on live electrical equipment. (some mist extinguishers are now though specifically formulated for this use).
Cream	AFFF (Foam)	A (combustible materials like wood, paper, etc.) and B (flammable liquids).	Unsafe on live electrical equipment.
Black	Carbon dioxide (CO ₂)	B (flammable liquids) and electrical.	Ineffective in the open air. Asphyxiating in an enclosed space. Noisy.
Blue	Dry powder	A, B (flammable liquids) and electrical fires.	Very messy when used. Should not be used indoors unless health and safety risks assessed.
Yellow	Wet chemical	A and F (fires involving fats and cooking oils).	Unsafe on live electrical equipment.

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