

**Workshop on:**  
**“Significance of Good Sterilization Practices in a**  
**healthcare institution to control**  
**Hospital Acquired Infections”**  
**03rd October 2026**



*The workshop is supported by ICMR under the project entitled:  
“Capacity Building project for managing healthcare associated  
infection (HAI) outbreaks in Tertiary and Secondary Care  
Hospitals across India- A hub and spoke model as part of  
Capacity Building Program for pandemic preparedness (CBPPP)  
under Pradhan Mantri Ayushman Bharat Health Infrastructure  
Mission [PMABHIM]”*

**“Salient features for ensuring sterility excellence of a modern CSSD”**  
**A presentation from an oncology center in eastern India**  
<https://tmckolkata.com/in/vision-tmc/infection-control/>



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**Tata Medical Center, Kolkata**

## CSSD importance

- To provide sterile materials not only to operation theatre but also for entire hospital
- To reduce work pressure on Nursing staffs
- To provide reliability of sterilized product
- To maintain proper inventory management
- To maintain proper documentation system
- To show revenue by repeated sterilization process

# Change of thoughts

## Previous thoughts:

- 1) Not required to build for whole hospital and required only for OT purpose
- 2) Cost center, rather than profit center
- 3) Occupied space and extra investment
- 4) Use as a dumping ground after procedure
- 5) Low profile department and staffs are not enough educated



## Present thoughts:

- 1) It's a backbone of the hospital and one of the main support service
- 2) Without CSSD nobody can get accreditation
- 3) Properly built CSSD is one time investment but return profit in many times
- 4) Need to built proper CSSD with proper workflow
- 5) Space required as per hospital bed capacity
- 6) Need high end Washer & sterilizer to reduce wet pack and infection rate
- 7) Required educated and experienced staff and should have CSSD certificate
- 8) Therefore profile is elevated gradually

# Role and functions

## **Central Sterile Supply Department - CSSD**

This is a backbone of any healthcare facilities

### **Objectives:**

- Functionality of right instrument – Specialty
- Understanding the method of reprocessing
- Sterility Assurance level - SAL  $10^{-6}$  CFU
- Delivery in right time, place and condition

**(However a good CSSD does not refer that the hospital is infection free. But it helps to reduce infection by various methods with the help of other departments)**



# **Design and infrastructure**

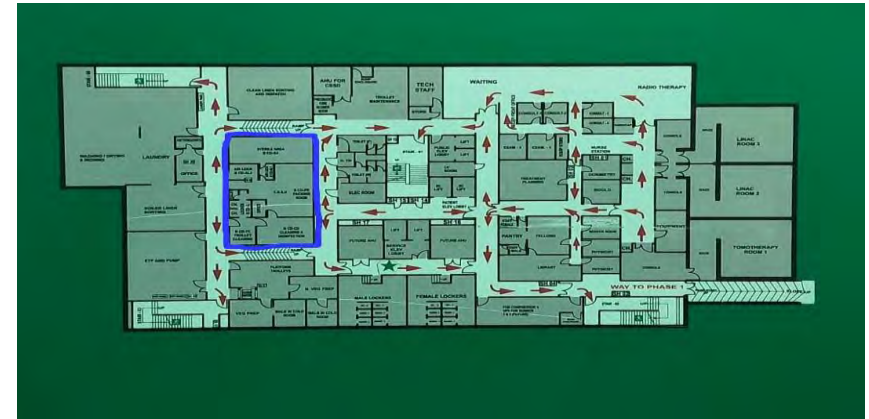
- 1) Location of CSSD (adjacent to OR, stair cases or lifts)
- 2) Proper zoning with access controlling
- 3) Unidirectional workflow (proper pass through system)
- 4) Direction of airflow (clean zone to dirty zone)
- 5) Types of materials used during construction
- 6) Maintain proper cleaning and disinfection method
- 7) Quality and use of cleaning and sterilizing agent
- 8) Proper receiving, reprocessing, storing and distribution
- 9) Quality of equipment and manpower
- 10) Ratio of area : equipment : bed capacity as per std

# CSSD location



## Tata Medical Center CSSD Phase 1

The Central Sterile Supply Department (CSSD) at the Tata Medical Center in Kolkata is located on the 2nd floor of the main hospital building (Phase 1), positioned at the distal end of the Operation Theatre (OT) Complex.

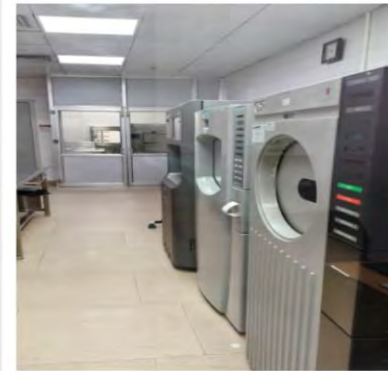


## Tata Medical Center CSSD Phase 2

The Central Sterile Supply Department (CSSD) and service infrastructure for Phase 2 at Tata Medical Center are positioned within the lower service and basement levels to maintain a direct, contamination-free sterile supply chain to the clinical areas and operating theatres. 

# CSSD area measurement

- **CSSD Phase -1 3000 sqft (Hospital bed Phase-1 is 183 beds)**



- **CSSD Phase -2 1800 sqft (Hospital bed Phase-2 is 254 beds)**



## **Standard area Ratio by Hospital Size**

**Small Hospitals (<100 beds) 9 – 10 sq. ft. / bed**

**Medium Hospitals (100–300 beds) 8 – 9 sq. ft. / bed**

**Large Hospitals (>300–600 beds) 7 – 8 sq. ft. / bed**

# Engineering inside

| Different CSSD zones | Light   | Air Flow    | Air Exchange | Temp   | Humidity |
|----------------------|---------|-------------|--------------|--------|----------|
| Decontamination Area | 400 lux | 744.18 CFM  | 20/h         |        |          |
| Preparation Area     | 525 lux | 2756.89 CFM | 20/h         | 20-22C | 55%      |
| Linen packing Area   | 500 lux | 522 CFM     | 20/h         |        |          |
| Clean storage Area   | 350 lux | 3500 CFM    | 30/h         | 18-20C | 60%      |

## Standard:

**General Minimum Standard: 400 lux**

**General Requirement: A minimum of 10 air changes per hour**

**Preparation and Packaging: Temperature: 18°C to 24°C**

**Humidity: 30% to 60%**

**Sterile Storage Area: Temperature: Below 24°C**

**Humidity: Maximum 60% to 70% relative humidity**

# **TOTAL CSSD EQUIPMENTS**

**(All major equipments are under CMC)**



| <b>SL.NO.</b> | <b>NAME OF EQUIPMENTS</b>          | <b>PHASE - 1</b> | <b>PHASE - 2</b> | <b>Service life</b> |
|---------------|------------------------------------|------------------|------------------|---------------------|
| 1             | WASHER DISINFECTOR (TUTTNAUER)     | 2                | 2                | 15 yrs              |
| 2             | ULTRASONIC CLEANER (TUTTNAUER)     | 1                | 1                | 15 yrs              |
| 3             | DRYING CABINET (STERIDIUM)         | 2                | 1                | 15 yrs              |
| 4             | ROTARY HEAT SEALER (HAWO)          | 2                | 2                | 10 yrs              |
| 5             | LARGE STEAM STERILIZER (TUTTNAUER) | 2                | 2                | 15 yrs              |
| 6             | SMALL STEAM STERILIZER (TUTTNAUER) | 1                | -                | 15 yrs              |
| 7             | ETHYLENE OXIDE STERILIZER (3M)     | 1                | 1                | 15 yrs              |
| 8             | PLASMA – H2O2 STERILIZER (ASP)     | 3                | -                | 15 yrs              |
| 9             | ATP MONITORING DEVICE (3M)         | 1                | -                | -                   |
| 10            | DIGITAL HYGROMETER                 | 2                | 2                | -                   |
| 11            | TDS METER FOR WATER                | 1                | 1                | -                   |
| 12            | DIGITAL WEIGHT MACHINE             | 1                | -                | -                   |
| 13            | MAGNIFYING LAMP                    | 2                | 2                | -                   |
| 14            | EO DETECTOR                        | 1                | 1                | -                   |

# Manpower- Staffing

| Designation                   | Number | Experience |
|-------------------------------|--------|------------|
| Scientific Officer            | 1      | Yes        |
| Sr. Technologist              | 1      | Yes        |
| Technologist                  | 10     | Yes        |
| Attendant<br>(Out Sourced)    | 8      | Fresher    |
| Housekeeping<br>(Out Sourced) | 4      | Fresher    |

## Standard:

### Small Hospital / Day Surgery

(~150 beds, <100 surgeries/month) **3 to 5 staff members**

### Mid-Sized Hospital

(~300 to 500 beds) **10 to 15 staff members**

### Large Tertiary / Teaching Hospital

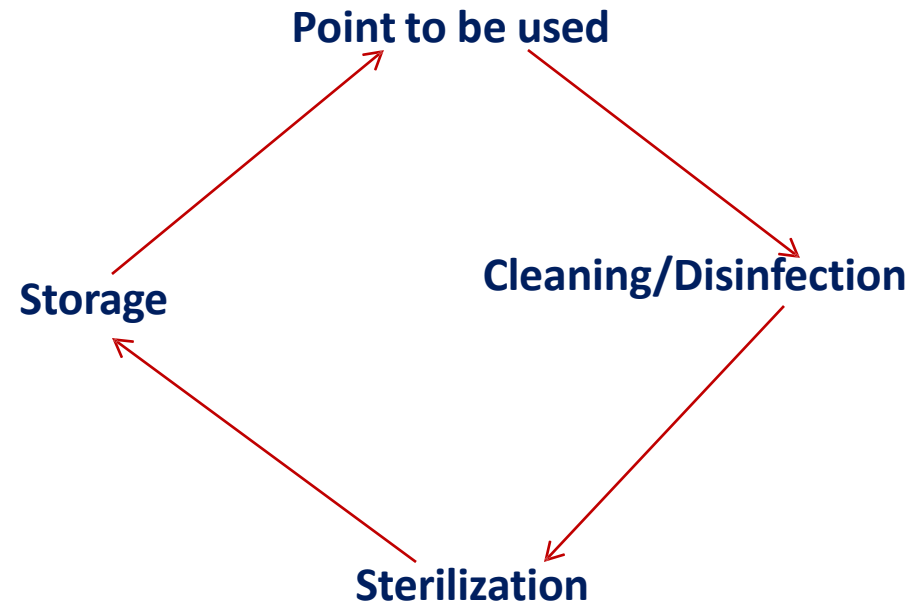
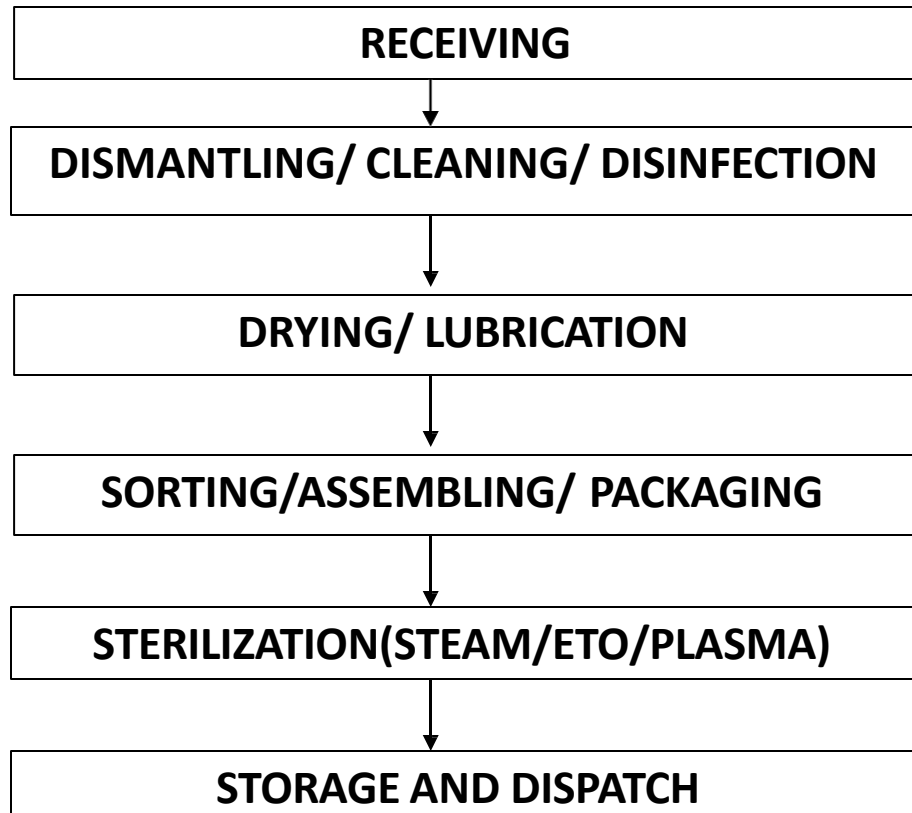
(~600 beds, ~800 surgeries/month) **20 staff**

## **Key requirements to run the department**

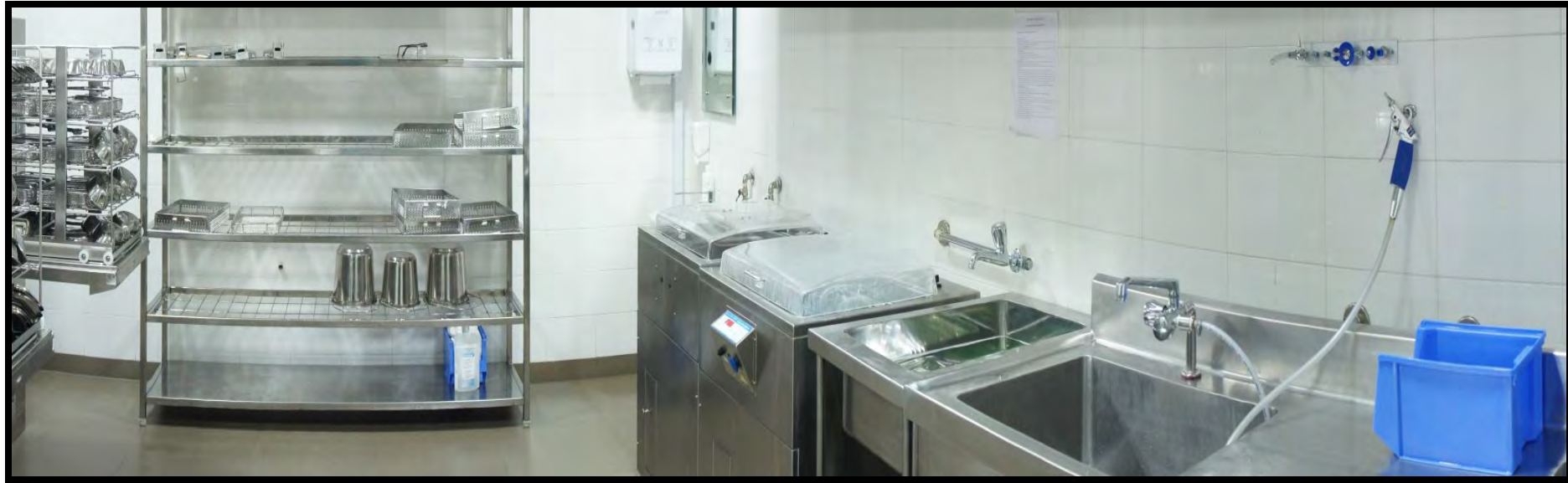
- **Water quality:** Double RO-TDS 0-10 PPM
- **Water pressure:** Minimum 4Kg/cm<sup>2</sup>
- **Electricity:** Backup – UPS Installed with sterilizer controller
- **Compressed Air quality:** Free from moisture
- **Compressed Air pressure:** Minimum 5-7 Kg/cm<sup>2</sup>

# WORK FLOW

## Reprocessing – Unidirectional work flow



## DECONTAMINATION AREA



### Equipments:

- Washer Disinfector
- Ultrasonic Cleaner
- Disinfection Tank
- Air & Water Jet Gun
- Wash basin with tap
- Computer with barcode scanner

### Accessories:

- PPEs
- Washing Brushes
- Wire Mesh Baskets
- Cleaning & Disinfection agents
- Loading carts for baskets
- Hazmat Cabinets
- Stainless Steel Furniture
- Eye wash station
- Hand Wash Basins, soap, paper towels

### Key Functions:

- ❖ Receiving
- ❖ Disassembling & Sorting
- ❖ Cleaning
- ❖ Disinfection
- ❖ Quality Control

# Different cleaning brushes for surgical instruments

(ST79, sec 7.5.3.2, ISO 15883)



# Dedicated Trolley wash & Eye wash facility



# ATP Test – ANSI/AAMI ST79 (Annex D)

(Calibrated in every year)



## Certificate of Conformance Certificate of Calibration



### Product Identification

SI No. LM260605

|                                          |                           |
|------------------------------------------|---------------------------|
| Product Description                      | 3M NG3 Luminometer        |
| Product Serial Number                    | TS80112                   |
| Customer Name (Please print / write)     | TATA Medical Centre Trust |
| Customer Location (Please print / write) | Kolkata                   |

| Test                                | Unit        | Value       |
|-------------------------------------|-------------|-------------|
| Instrument Background               | RLU         | 0           |
| Comparison to Optical Reference <5% | Percent (%) | 0.999645844 |

Instrument listed above were calibrated in accordance with NEOGEN specifications.  
\* Calibration valid for 1 year from date of calibration. We recommend the instrument be calibrated annually or at an interval specified in user's quality system.

- \* Instruments are calibrated using Test Method : **TM-05-284222**
- \* Reference instrument serial numbers **MUE0959 MUE0954**
- \* ATP Positive LOT number **26045311**

Instruments are calibrated in RLU (Relative Light Units), using NEOGEN proprietary methods. NEOGEN does not divulge proprietary information.

All ATP measurements report results in RLU. There is no international standard for RLU.

### Positive Test - Sample Results post Calibration

| Swab     | Test | Ref #1 | Ref #2 |
|----------|------|--------|--------|
| 20 uL #1 | 2623 | 2684   | 2648   |
| 20 uL #2 | 2582 | 2627   | 2762   |

|                          |             |
|--------------------------|-------------|
| Calibration Performed on | 30-07-26    |
| Calibration Valid till   | 30-07-27    |
| Calibration Performed by | AMAL RAJ, C |



Signature with Date:



Authorised Service Partner - Prompt Solutions Pvt. Ltd.  
No. 1159, 32nd 'G' Cross, 26th Main, 4th 'T' Block, Jayanagar, Bangalore-5600



# ATP test results (Site plan: CSSD P1)

| Date       | Test Point           | Pass | Fail | RLU | Comments |
|------------|----------------------|------|------|-----|----------|
| 29-06-2026 | Utensils             | 150  | 151  | 1   | Pass     |
| 26-06-2026 | Lap Hand Instruments | 150  | 151  | 10  | Pass     |
| 22-06-2026 | Furniture            | 150  | 151  | 1   | pass     |
| 19-06-2026 | Equipment            | 150  | 151  | 19  | Pass     |
| 15-06-2026 | Solid Instruments    | 150  | 151  | 1   | Pass     |
| 11-06-2026 | Powered Instruments  | 150  | 151  | 25  | Pass     |
| 08-06-2026 | Equipment            | 150  | 151  | 1   | Pass     |
| 05-06-2026 | Lap Hand Instruments | 150  | 151  | 22  | Pass     |
| 01-06-2026 | Solid instruments    | 150  | 151  | 0   | Pass     |

## PACKAGING AREA



### Key Functions:

- ❖ Drying
- ❖ Assembling, Lubricating
- ❖ Checking
- ❖ Packaging
- ❖ Loading
- ❖ Sterilization
- ❖ Quality Control

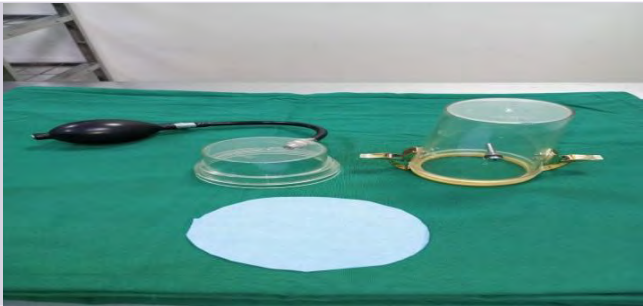
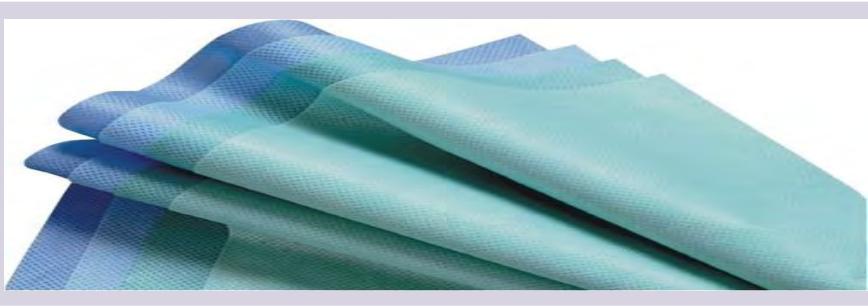
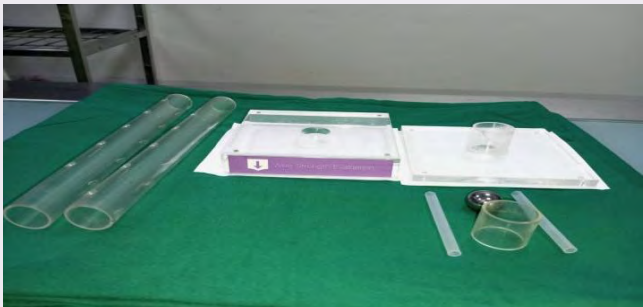
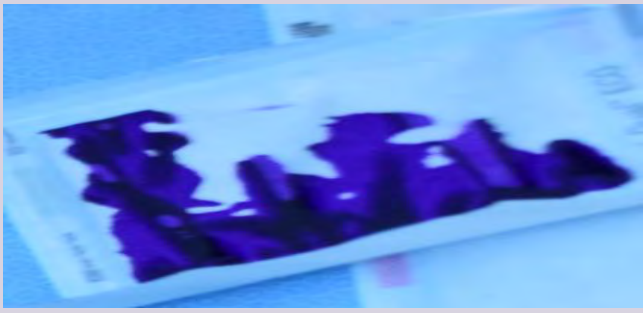
### Accessories:

- Packaging Materials (SMMS, Flat Reels, Pouch Pack)
- Quality monitoring kit (Physical, Chemical Biological)
- Instrument Lubricant
- Stainless Steel Furniture
- Sterilizer Loading Trolleys
- Loading Baskets
- Instrument Baskets

### Equipments:

- Drying Cabinets
- Rotary Sealers
- Magnifying Lamp
- Steam Sterilizer
- EO Sterilizer
- Plasma Sterilizer
- Computer system
- Barcode scanner /printer
- Digital weigh machine

## PACKAGING MATERIALS- standardized testing

| Test                                    | Test kit                                                                                                                                                                                                                                                                                                                                | Wrappers                                                                                                                                                                                                                                                                      |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Porosity testing</b><br><br>EN 868-2 |  <p>A photograph showing the equipment for porosity testing. It includes a black hand pump connected to a clear plastic tube, a clear plastic cup, and a circular piece of white material (likely a filter or membrane) placed on a green surface.</p> |  <p>A photograph showing a stack of blue and white woven or non-woven fabric materials, likely used for medical packaging.</p>                                                              |
| <b>Burst strength</b><br><br>ASTM D1709 |  <p>A photograph showing the equipment for burst strength testing. It includes two clear plastic tubes, a clear plastic cup, a clear plastic bag, and a clear plastic sheet, all placed on a green surface.</p>                                        |  <p>A photograph showing the equipment for burst strength testing. It includes a clear plastic bag, a clear plastic sheet, and a clear plastic cup, all placed on a green surface.</p>      |
| <b>Seal check</b>                       |  <p>A photograph showing the equipment for seal check. It includes a clear plastic bag, a clear plastic sheet, and a clear plastic cup, all placed on a green surface.</p>                                                                            | <p><u>Water repellency test</u></p>  <p>A photograph showing a water repellency test. A clear plastic bag is placed on a blue surface, and a clear plastic cup is placed on top of it.</p> |

## Special container for specialized instruments (STU)

**WIRE MESH BASKET**



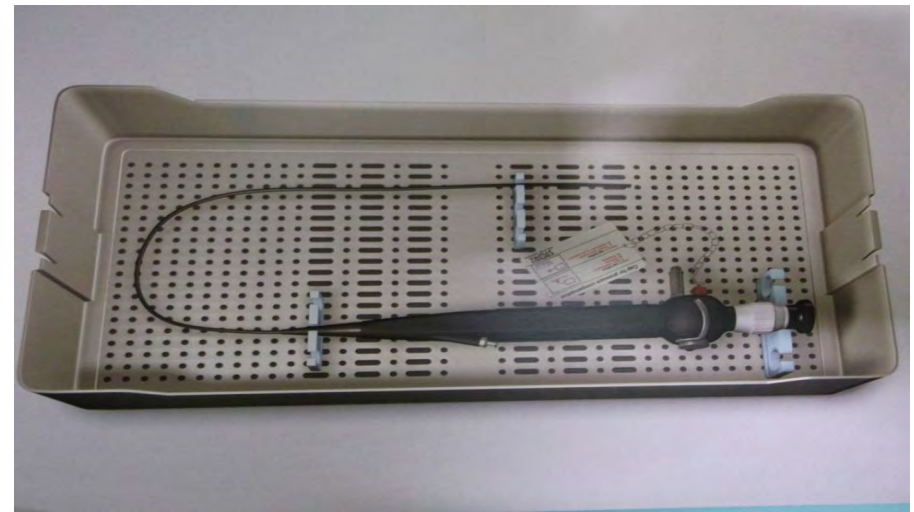
**RIGID SCOPE BASKET**



**RIGID CONTAINER**

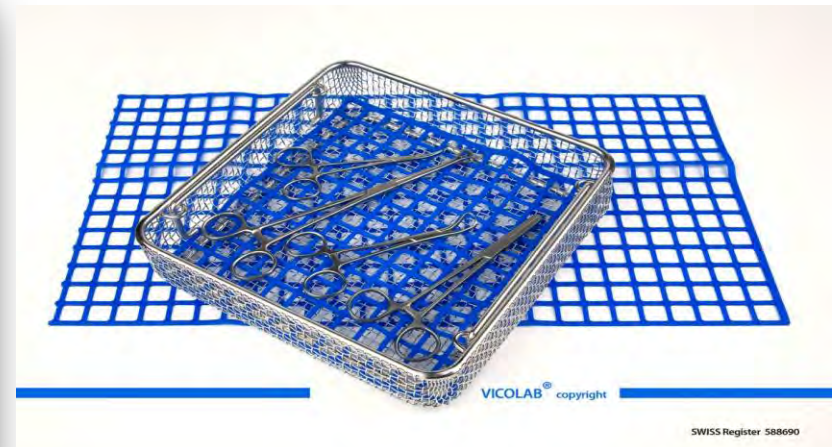


**FLEXIBLE VIDEO SCOPE BASKET**



# Instruments protection

(ST79, sec 7.5.6 & sec 8.4.4 & sec 8.5.1)



- Lubrication is necessary for smoothening & less friction of hinges
- Silicon mat (tray liner) is necessary to avoid friction between instruments and tray
- Instruments tip protector is necessary to protect the fine tips of instruments to avoid breakage

# Enhance checking ability

## Magnifying LED lamp



- Instruments functional checking
- Recognize proper category number
- Identify any stains or cracks

## Light fitted linen packing table



- Linen bacterial barrier checking
- Identify any stains or torn
- Identify any clips, hair, sticky pad

# Computerized instrument count sheet and scanning system for set tracking

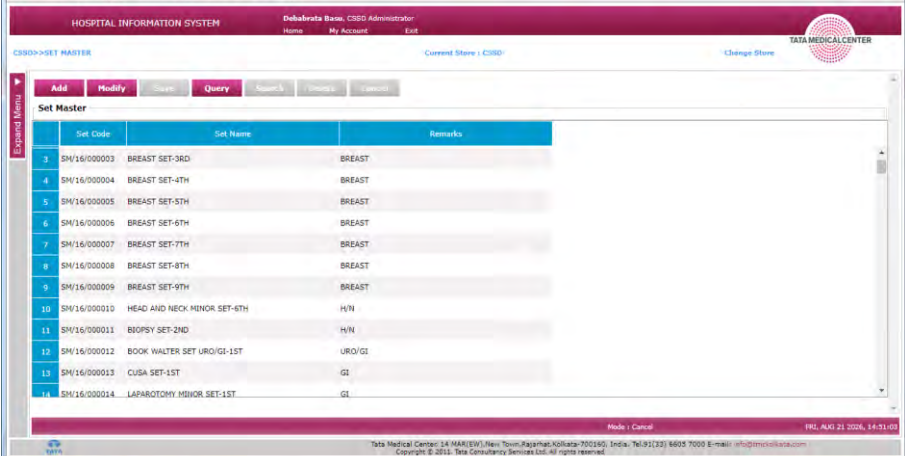
| CENTRAL STERILE SUPPLY DEPARTMENT |              |                                   |     |         |
|-----------------------------------|--------------|-----------------------------------|-----|---------|
| BREAST SET - 5/6 [AESCULAP BOX]   |              |                                   |     |         |
| SL NO                             | CAT NO       | DESCRIPTION                       | Qty | REMARKS |
| 1                                 | SISCO        | RAMPLEYS SPONGE HOLDER            | 2   |         |
| 2                                 | SISCO        | ROUND BOWL                        | 2   |         |
| 3                                 | SISCO        | KIDNEY TRAY                       | 1   |         |
| 4                                 | AS15-801-13  | TOWEL CLIP                        | 6   |         |
| 5                                 | EA031R       | BABCOCK                           | 2   |         |
| 6                                 | AS15-766-19  | ALLIS FORCEPS                     | 2   |         |
| 7                                 | AS13-152-15  | GILLIS TISSUE FORCEPS             | 2   |         |
| 8                                 | AS13-208-20  | DEBAKEY FORCEPS                   | 1   |         |
| 9                                 | AS13-208-16  | DEBAKEY FORCEPS                   | 1   |         |
| 10                                | AS13-204-20  | DEBAKEY FORCEPS                   | 1   |         |
| 11                                | BC277R       | METZENBAUM SCISSORS               | 1   |         |
| 12                                | AS12-211-18  | TC METZENBAUM SCISSORS (FINE TIP) | 1   |         |
| 13                                | AS12-733-23  | SUTURE SCISSORS                   | 1   |         |
| 14                                | SISCO        | MAYO SCISSORS                     | 1   |         |
| 15                                | AS15-069-14  | MOSQUITO CVD                      | 2   |         |
| 16                                | BH207R       | HEISS DELICATE ARTERY FORCEPS     | 5   |         |
| 17                                | BJ102R       | GEMINI CLAMP RIGHT ANGLE          | 1   |         |
| 18                                | AS18-002-16  | NEEDLE HOLDER                     | 1   |         |
| 19                                | BM077R       | TC HEGAR NEEDLE HOLDER            | 1   |         |
| 20                                | AS-16-063-18 | CZERNIES RETRACTOR 2              | 2   |         |
| 21                                | AS-16-025-01 | LANGENBACK RETRACTOR              | 2   |         |
| 22                                | AS16-139-01  | CATS PAW                          | 2   |         |
| 23                                | AS35-078-01  | LANDEN RETRACTOR                  | 1   |         |
| 24                                | AS16-253-26  | MASTOID RETRACTOR                 | 1   |         |
| 25                                | AS16-253-20  | MASTOID RETRACTOR                 | 1   |         |
| 26                                | SISCO        | BP-HANDLE NO 3                    | 2   |         |
| 27                                | BB084        | BP HANDLE NO 4                    | 1   |         |
| 28                                | BHF10C       | MOSQUITO                          | 4   |         |
| 29                                |              | KIDNEY DISH                       | 1   |         |
| TOTAL                             |              |                                   | 51  |         |
| COMMENTS:                         |              |                                   |     |         |



# Tracking & Traceability for Surgical Sets

## CSSD software in HMS

Surgical tray master file  
Individual Instrument file  
Mapping Instrument with Set  
Instrument set receive  
Sterilizer Load control  
Set sterilization  
Set issue  
Surgical Set expiry traceability



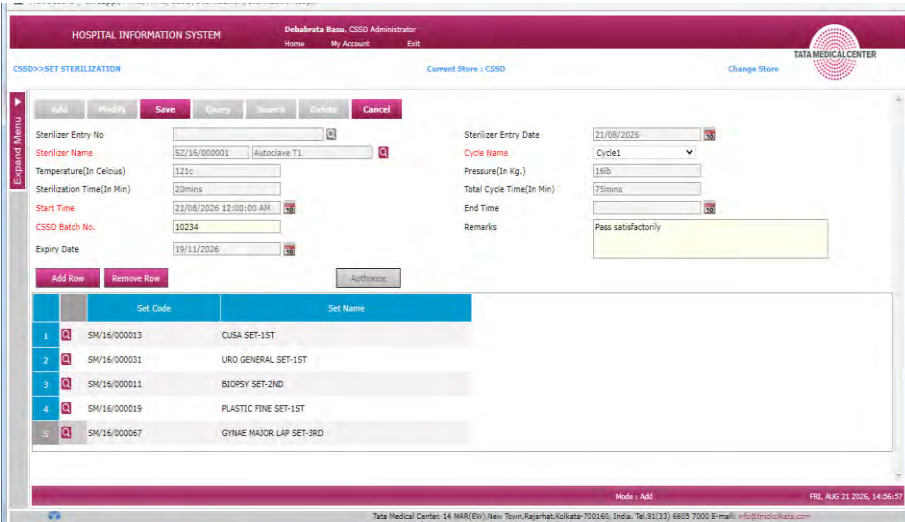
HOSPITAL INFORMATION SYSTEM | Debabrata Basu, CSSD Administrator | Home | My Account | Exit

CSSD>>SET MASTER | Current Store : CSSD | Change Store

Buttons: Add, Modify, Save, Query, Refresh, Print, Cancel

| Sl. No. | Set Code    | Set Name                    | Remarks |
|---------|-------------|-----------------------------|---------|
| 3       | SM/16/00003 | BREAST SET-3RD              | BREAST  |
| 4       | SM/16/00004 | BREAST SET-4TH              | BREAST  |
| 5       | SM/16/00005 | BREAST SET-5TH              | BREAST  |
| 6       | SM/16/00006 | BREAST SET-6TH              | BREAST  |
| 7       | SM/16/00007 | BREAST SET-7TH              | BREAST  |
| 8       | SM/16/00008 | BREAST SET-8TH              | BREAST  |
| 9       | SM/16/00009 | BREAST SET-9TH              | BREAST  |
| 10      | SM/16/00010 | HEAD AND NECK MINOR SET-6TH | H/N     |
| 11      | SM/16/00011 | BIOPSY SET-2ND              | H/N     |
| 12      | SM/16/00012 | BOOK WALTER SET URO/GI-1ST  | URO/GI  |
| 13      | SM/16/00013 | CUSA SET-1ST                | GI      |
| 14      | SM/16/00014 | LAPAROTOMY MINOR SET-1ST    | GI      |

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HOSPITAL INFORMATION SYSTEM | Debabrata Basu, CSSD Administrator | Home | My Account | Exit

CSSD>>SET STERILIZATION | Current Store : CSSD | Change Store

Buttons: Add, Modify, Save, Query, Refresh, Delete, Cancel

Expanded Menu: Add Row, Remove Row, Authorize

Sterilizer Entry No:  Autoclave T1

Sterilizer Name:

Temperature(In Celsius):

Sterilization Time(In Min):

Start Time:

CSSD Batch No.:

Expiry Date:

Sterilizer Entry Date:

Cycle Name:

Pressure(In Kg.):

Total Cycle Time(In Min):

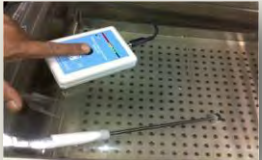
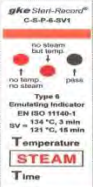
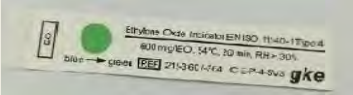
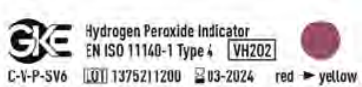
End Time:

Remarks:

| Sl. No. | Set Code    | Set Name                |
|---------|-------------|-------------------------|
| 1       | SM/16/00013 | CUSA SET-1ST            |
| 2       | SM/16/00001 | URO GENERAL SET-1ST     |
| 3       | SM/16/00011 | BIOPSY SET-2ND          |
| 4       | SM/16/00019 | PLASTIC FINE SET-1ST    |
| 5       | SM/16/00067 | GYNAE MAJOR LAP SET-3RD |

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# Daily equipment monitoring system at a glance

| Process<br>↓<br>Monitors →                                    | PHYSICAL<br>(Frequency)                                               | CHEMICAL<br>(Frequency)<br>ISO-18472 tested                                                                                                                                       | BIOLOGICAL<br>(Frequency)<br>ISO-18472 tested                                                   | HPCD/<br>OTHERS<br>(Frequency)                                                                       |
|---------------------------------------------------------------|-----------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|
| Ultrasonic Cleaner                                            | Frequency tester                                                      | Every cycle<br>                                                                                 | N/A                                                                                             |                   |
| Washer Disinfector<br>EN ISO 15833                            | 5 minutes at 90C<br>AO value is 3000                                  | Every cycle<br>                                                                                 | N/A                                                                                             | ATP testing                                                                                          |
| Steam Sterilization<br>Final vacuum depth<br>less than 12 kpa | Automatic Printouts<br>(Every Cycle)<br>Leak test:<br>Every fortnight | CL I: Every Pack<br>CL II: Once a day<br>(B&D test)<br>CL IV: Each pack<br>CL V: Each Pack<br> | <u>Geo bacillus</u><br><u>stearothermophilus</u><br>Once in a day.<br>(For implant every cycle) | Every Cycle<br>   |
| EO Sterilization                                              | Automatic Printouts<br>(Every Cycle)<br>Leak test:<br>Half yearly     | Class I :Every Pack<br>Class IV :Each Pack<br>                                                  | <u>Bacillus atrophaeus</u><br>Every Cycle                                                       | Every Cycle<br>  |
| Plasma Sterilization                                          | Automatic Printouts<br>(Every Cycle)<br>Leak test:<br>Half yearly     | Class I :Every Pack<br>Class IV : Each Pack<br>                                               | <u>Geo bacillus</u><br><u>stearothermophilus</u><br>Once in a day.                              | Every Cycle<br> |
| Sealing                                                       | N/A                                                                   | Seal Check<br>Methylene Blue test<br>(weekly)                                                                                                                                     | N/A                                                                                             |                 |

# Leak test of a sterilizer



An autoclave leak test is performed in a cold condition to prevent residual heat and moisture from creating false pressure readings

Acceptable limit for Autoclave is: 1.3 Kpa

TMCK sterilizer result is only 0.02 Kpa

Acceptable limit for EO is: 16mbar/min

TMCK sterilizer result is only 8mbar

Acceptable limit for H<sub>2</sub>O<sub>2</sub> is: 25mtorr/min

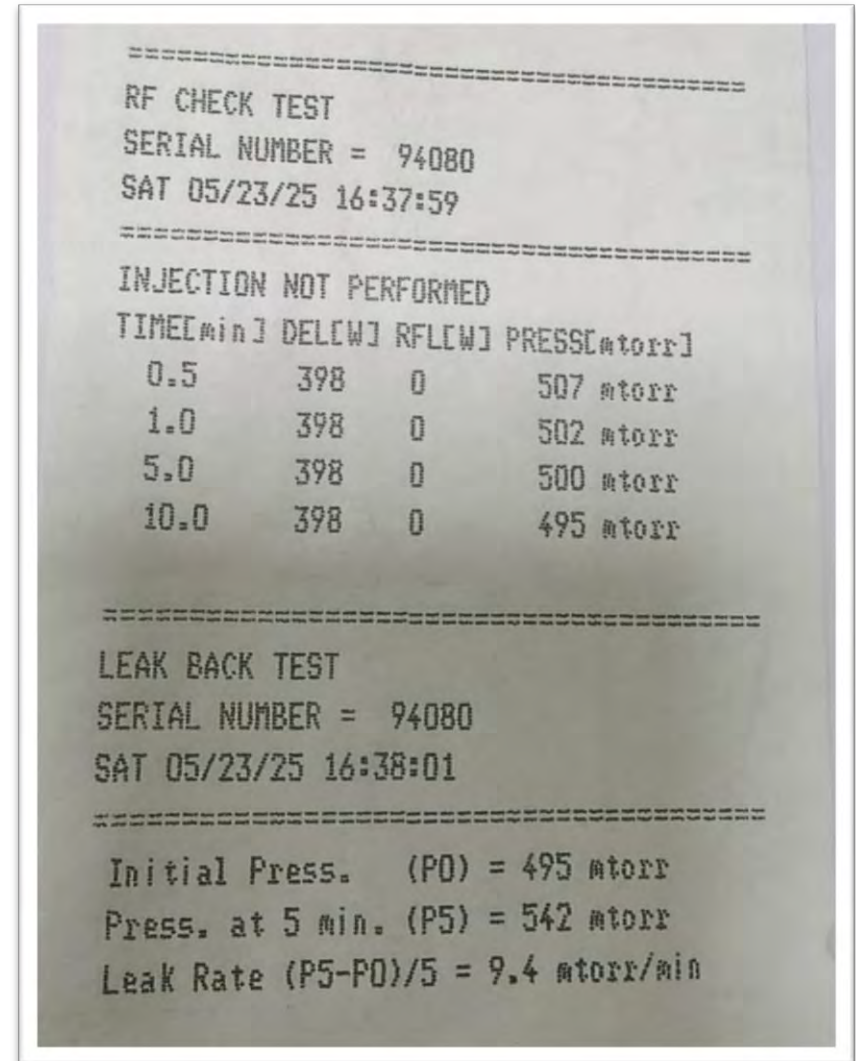
TMCK sterilizer result is only 9.4 mtorr

# Printout of leak rate test



Steam (0.02 kPa)

Plasma (9.4 mtorr)



# Sterilizer validation by 3<sup>rd</sup> party – HPR Kit (Chemical monitoring) (EN867-5)



MEDOVATION INC  
we validate, you document

Tata Medical Center  
377 180 2101  
- 474327

### HPR TEST

Documentation Chart for the results using the gke Stat-Record Process Challenge device (PCD) – Test set to check the penetration characteristics of Steam Sterilization processes

Sterilizer No: New - P-1 Make: Tuttnauer Temp: 134.0 Holding Time: 5 mins  
Negative Pulsing - 3 Positive Pulsing - 5 Drying Time - 20 mins Drying Airflow - 4 mins  
Colour change of chemical indicator

| PCD No | PCD tube length [m] | Inner diameter [mm] | MPR [cm <sup>3</sup> ] | ONE | TWO | THREE | FOUR | DMG-Test | STEAM | Pass |
|--------|---------------------|---------------------|------------------------|-----|-----|-------|------|----------|-------|------|
| 1      | 1.5                 | 2                   | 30                     | ONE | TWO | THREE | FOUR | DMG-Test | STEAM | Pass |
| 2      | 1.5                 | 3                   | 45                     | ONE | TWO | THREE | FOUR | DMG-Test | STEAM | Pass |
| 3      | 1.0                 | 5                   | 50                     | ONE | TWO | THREE | FOUR | DMG-Test | STEAM | Pass |
| 4      | 3.0                 | 2                   | 60                     | ONE | TWO | THREE | FOUR | DMG-Test | STEAM | Pass |
| 5      | 1.5                 | 4                   | 60                     | ONE | TWO | THREE | FOUR | DMG-Test | STEAM | Pass |
| 6      | 4.5                 | 2                   | 90                     | ONE | TWO | THREE | FOUR | DMG-Test | STEAM | Pass |
| 7      | 3.0                 | 3                   | 90                     | ONE | TWO | THREE | FOUR | DMG-Test | STEAM | Fail |
| 8      | 2.0                 | 5                   | 100                    | ONE | TWO | THREE | FOUR | DMG-Test | STEAM | Fail |
| 9      | 3.0                 | 4                   | 120                    | ONE | TWO | THREE | FOUR | DMG-Test | STEAM | Fail |
| 10     | 3.0                 | 5                   | 150                    | ONE | TWO | THREE | FOUR | DMG-Test | STEAM | Fail |
| 11     | 4.0                 | 5                   | 200                    | ONE | TWO | THREE | FOUR | DMG-Test | STEAM | Fail |
| 12     | 5.0                 | 5                   | 250                    | ONE | TWO | THREE | FOUR | DMG-Test | STEAM | Fail |
| 13     | 6.0                 | 5                   | 300                    | ONE | TWO | THREE | FOUR | DMG-Test | STEAM | Fail |

### PASS RESULTS

The batch can be released when all four-color bars of the indicator have turned black (see image) and all other critical process parameters such as temperature, pressure and sterilization time correspond to the specifications.

Complete air removal and steam penetration  
All colour bars black

### FAIL RESULTS

Incomplete air removal and steam penetration. The colour bars at one end become lighter towards one end.

Temperature exposure, but poor air removal and steam penetration. All colour bars are darkened, becoming brownish but not black.

Neither temperature exposure nor air removal nor steam penetration.  
All colour bars have retained the original yellow colour.

Technical notes:  
A failure in the test cycle must be repeated, if the test result is confirmed, the cause must be determined.  
A sterilizer defect may result in inadequate air removal or leakage. External causes may be unflushed steam lines at the start of the process, non-condensable gases mixed with steam, deviating cooling water temperature, etc.

Operator: 13:13:37  
Time: 13:13:37  
Status: Cycle Ended

| Time            | Temp     | Pressure | Flow |
|-----------------|----------|----------|------|
| 00:46:02        | 075.5    | 095.5    |      |
| 00:46:00        | 078.2    | 012.3    |      |
| 00:44:57        | 078.3    | 012.3    |      |
| 00:44:57        | 078.3    | 012.3    |      |
| 00:42:59        | 077.6    | 012.3    |      |
| 00:39:59        | 082.5    | 012.1    |      |
| 00:36:59        | 083.7    | 012.4    |      |
| 00:33:59        | 087.6    | 012.1    |      |
| 00:30:59        | 089.0    | 012.3    |      |
| 00:27:59        | 072.8    | 013.0    |      |
| 00:24:59        | 106.6    | 096.1    |      |
| 00:24:56        | 106.7    | 097.5    |      |
| 00:24:54        | 107.4    | 102.7    |      |
| 00:23:41        | 135.8    | 311.6    |      |
| CLK 2: 12:51:13 |          |          |      |
| CLK 1: 12:51:13 |          |          |      |
| S 00:23:38      | 135.8    | 311.7    |      |
| S 00:23:38      | 135.8    | 311.7    |      |
| S 00:22:38      | 135.8    | 311.1    |      |
| S 00:21:38      | 135.7    | 312.2    |      |
| S 00:20:38      | 135.6    | 311.5    |      |
| S 00:19:38      | 135.5    | 311.1    |      |
| S 00:18:38      | 135.2    | 309.8    |      |
| CLK 2: 12:46:13 |          |          |      |
| CLK 1: 12:46:13 |          |          |      |
| H 00:18:37      | 135.2    | 309.7    |      |
| H 00:18:01      | 134.3    | 301.8    |      |
| H 00:15:01      | 127.8    | 247.7    |      |
| H 00:12:01      | 113.1    | 162.8    |      |
| A 00:12:00      | 113.1    | 162.8    |      |
| A 00:10:36      | 087.4    | 018.2    |      |
| A 00:08:13      | 112.5    | 162.5    |      |
| A 00:08:13      | 112.5    | 162.5    |      |
| A 00:06:46      | 083.7    | 018.8    |      |
| A 00:04:18      | 109.6    | 165.5    |      |
| A 00:04:18      | 109.6    | 162.8    |      |
| A 00:02:39      | 067.3    | 018.8    |      |
| A 00:00:08      | 066.6    | 099.6    |      |
| A 00:00:07      | 066.6    | 099.5    |      |
| Time            | °C       | kPa      |      |
| End Temperature | 134.0    | °C       |      |
| Dry Time        | 20 min   |          |      |
| Ster. Time      | 5.0 min* |          |      |
| Ster. Temp.     | 134.0    | °C       |      |
| (Customized)    |          |          |      |
| INSTRUMENT 1    |          |          |      |



|  | Time Stamp         | Num PSIA | Min. PSIA | Max. PSIA | Avg. PSIA | Spread PSIA |
|--|--------------------|----------|-----------|-----------|-----------|-------------|
|  | 12/01/2018 4:56:00 | 1        | 14.6      | 14.6      | 14.6      | 0.0         |
|  | 12/01/2018 4:56:30 | 1        | 14.6      | 14.6      | 14.6      | 0.0         |
|  | 12/01/2018 4:57:00 | 1        | 14.6      | 14.6      | 14.6      | 0.0         |
|  | 12/01/2018 4:57:30 | 1        | 14.6      | 14.6      | 14.6      | 0.0         |
|  | 12/01/2018 4:58:00 | 1        | 14.6      | 14.6      | 14.6      | 0.0         |
|  | 12/01/2018 4:58:30 | 1        | 14.5      | 14.5      | 14.5      | 0.0         |
|  | 12/01/2018 4:59:00 | 1        | 14.6      | 14.6      | 14.6      | 0.0         |
|  | 12/01/2018 4:59:30 | 1        | 14.5      | 14.5      | 14.5      | 0.0         |
|  | 12/01/2018 5:00:00 | 1        | 14.5      | 14.5      | 14.5      | 0.0         |
|  | 12/01/2018 5:00:30 | 1        | 14.5      | 14.5      | 14.5      | 0.0         |
|  | 12/01/2018 5:01:00 | 1        | 14.5      | 14.5      | 14.5      | 0.0         |
|  | 12/01/2018 5:01:30 | 1        | 14.5      | 14.5      | 14.5      | 0.0         |
|  | 12/01/2018 5:02:00 | 1        | 14.5      | 14.5      | 14.5      | 0.0         |
|  | 12/01/2018 5:02:30 | 1        | 14.5      | 14.5      | 14.5      | 0.0         |
|  | 12/01/2018 5:03:00 | 1        | 14.5      | 14.5      | 14.5      | 0.0         |
|  | 12/01/2018 5:04:00 | 1        | 14.5      | 14.5      | 14.5      | 0.0         |
|  | 12/01/2018 5:04:30 | 1        | 14.5      | 14.5      | 14.5      | 0.0         |
|  | 12/01/2018 5:05:00 | 1        | 14.5      | 14.5      | 14.5      | 0.0         |
|  | 12/01/2018 5:05:30 | 1        | 14.5      | 14.5      | 14.5      | 0.0         |
|  | 12/01/2018 5:06:00 | 1        | 12.0      | 12.0      | 12.0      | 0.0         |
|  | 12/01/2018 5:06:30 | 1        | 5.3       | 5.3       | 5.3       | 0.0         |
|  | 12/01/2018 5:07:00 | 1        | 2.2       | 2.2       | 2.2       | 0.0         |
|  | 12/01/2018 5:07:30 | 1        | 0.6       | 0.6       | 0.6       | 0.0         |
|  | 12/01/2018 5:08:00 | 1        | 0.2       | 0.2       | 0.2       | 0.0         |
|  | 12/01/2018 5:08:30 | 1        | -0.1      | -0.1      | -0.1      | 0.0         |
|  | 12/01/2018 5:09:00 | 1        | -0.1      | -0.1      | -0.1      | 0.0         |
|  | 12/01/2018 5:09:30 | 1        | -0.1      | -0.1      | -0.1      | 0.0         |
|  | 12/01/2018 5:10:00 | 1        | -0.1      | -0.1      | -0.1      | 0.0         |
|  | 12/01/2018 5:10:30 | 1        | -0.1      | -0.1      | -0.1      | 0.0         |
|  | 12/01/2018 5:11:00 | 1        | -0.1      | -0.1      | -0.1      | 0.0         |
|  | 12/01/2018 5:11:30 | 1        | -0.1      | -0.1      | -0.1      | 0.0         |
|  | 12/01/2018 5:12:00 | 1        | -0.1      | -0.1      | -0.1      | 0.0         |
|  | 12/01/2018 5:12:30 | 1        | -0.1      | -0.1      | -0.1      | 0.0         |
|  | 12/01/2018 5:13:00 | 1        | -0.1      | -0.1      | -0.1      | 0.0         |
|  | 12/01/2018 5:13:30 | 1        | -0.1      | -0.1      | -0.1      | 0.0         |
|  | 12/01/2018 5:14:00 | 1        | -0.1      | -0.1      | -0.1      | 0.0         |
|  | 12/01/2018 5:14:30 | 1        | -0.1      | -0.1      | -0.1      | 0.0         |
|  | 12/01/2018 5:15:00 | 1        | 0.0       | 0.0       | 0.0       | 0.0         |
|  | 12/01/2018 5:15:30 | 1        | 0.0       | 0.0       | 0.0       | 0.0         |
|  | 12/01/2018 5:16:00 | 1        | 0.0       | 0.0       | 0.0       | 0.0         |
|  | 12/01/2018 5:16:30 | 1        | 0.0       | 0.0       | 0.0       | 0.0         |
|  | 12/01/2018 5:17:00 | 1        | 0.0       | 0.0       | 0.0       | 0.0         |
|  | 12/01/2018 5:17:30 | 1        | 0.0       | 0.0       | 0.0       | 0.0         |
|  | 12/01/2018 5:18:00 | 1        | 0.0       | 0.0       | 0.0       | 0.0         |
|  | 12/01/2018 5:18:30 | 1        | 0.0       | 0.0       | 0.0       | 0.0         |
|  | 12/01/2018 5:19:00 | 1        | 0.0       | 0.0       | 0.0       | 0.0         |
|  | 12/01/2018 5:19:30 | 1        | 0.0       | 0.0       | 0.0       | 0.0         |
|  | 12/01/2018 5:20:00 | 1        | 0.0       | 0.0       | 0.0       | 0.0         |
|  | 12/01/2018 5:20:30 | 1        | 5.1       | 5.1       | 5.1       | 0.0         |
|  | 12/01/2018 5:21:00 | 1        | 14.7      | 14.7      | 14.7      | 0.0         |
|  | 12/01/2018 5:21:30 | 1        | 12.7      | 12.7      | 12.7      | 0.0         |
|  | 12/01/2018 5:22:00 | 1        | 5.6       | 5.6       | 5.6       | 0.0         |
|  | 12/01/2018 5:22:30 | 1        | 2.5       | 2.5       | 2.5       | 0.0         |
|  | 12/01/2018 5:23:00 | 1        | 1.1       | 1.1       | 1.1       | 0.0         |
|  | 12/01/2018 5:23:30 | 1        | 0.5       | 0.5       | 0.5       | 0.0         |
|  | 12/01/2018 5:24:00 | 1        | 0.2       | 0.2       | 0.2       | 0.0         |
|  | 12/01/2018 5:24:30 | 1        | 0.1       | 0.1       | 0.1       | 0.0         |
|  | 12/01/2018 5:25:00 | 1        | 0.1       | 0.1       | 0.1       | 0.0         |
|  | 12/01/2018 5:25:30 | 1        | 0.1       | 0.1       | 0.1       | 0.0         |
|  | 12/01/2018 5:26:00 | 1        | 0.1       | 0.1       | 0.1       | 0.0         |
|  | 12/01/2018 5:26:30 | 1        | 0.2       | 0.2       | 0.2       | 0.0         |
|  | 12/01/2018 5:27:00 | 1        | 0.2       | 0.2       | 0.2       | 0.0         |
|  | 12/01/2018 5:27:30 | 1        | 0.2       | 0.2       | 0.2       | 0.0         |
|  | 12/01/2018 5:28:00 | 1        | 0.2       | 0.2       | 0.2       | 0.0         |
|  | 12/01/2018 5:28:30 | 1        | 0.2       | 0.2       | 0.2       | 0.0         |
|  | 12/01/2018 5:29:00 | 1        | 0.2       | 0.2       | 0.2       | 0.0         |
|  | 12/01/2018 5:29:30 | 1        | 0.2       | 0.2       | 0.2       | 0.0         |
|  | 12/01/2018 5:30:00 | 1        | 0.2       | 0.2       | 0.2       | 0.0         |
|  | 12/01/2018 5:30:30 | 1        | 0.2       | 0.2       | 0.2       | 0.0         |
|  | 12/01/2018 5:31:00 | 1        | 0.2       | 0.2       | 0.2       | 0.0         |
|  | 12/01/2018 5:31:30 | 1        | 0.2       | 0.2       | 0.2       | 0.0         |
|  | 12/01/2018 5:32:00 | 1        | 0.2       | 0.2       | 0.2       | 0.0         |
|  | 12/01/2018 5:32:30 | 1        | 11.2      | 11.2      | 11.2      | 0.0         |
|  | 12/01/2018 5:33:00 | 1        | 14.8      | 14.8      | 14.8      | 0.0         |
|  | 12/01/2018 5:33:30 | 1        | 14.8      | 14.8      | 14.8      | 0.0         |
|  | 12/01/2018 5:34:00 | 1        | 14.8      | 14.8      | 14.8      | 0.0         |
|  | 12/01/2018 5:34:30 | 1        | 10.6      | 10.6      | 10.6      | 0.0         |

[illegible]

# STERILE STORE



- Use appropriate PPE
- FIFO method
- Inception of packaging integrity at the time of issue
- Humidity & temperature maintained
- Sterile Racks are position  
8 inch from the floor  
18 inch from the ceiling  
2 inch from the wall

## Equipments

- Hygrometer
- Computer with Bar Code Scanner
- Room heater

## Accessories:

- Unloading Trolley
- Heat Resistant Gloves
- Wire Baskets
- Storage Racks (Stainless Steel )

## Key Functions:

- ❖ Unloading
- ❖ Storage
- ❖ Dispatch



# Environmental quality monitoring

- **Water quality monitoring**  
(Dedicated R-O plant for CSSD)



- **Air quality monitoring**  
(Dedicated AHU for CSSD)



# Tools for water quality monitoring



**Water chlorine level-  
Colorimeter  
O-toluidine/  
Electronic  
Target: 0.2-0.5 ppm  
Ref: WHO**



**Water TDS-  
total dissolved salt-  
Conductivity meter;  
CSSD target<10 mg/L  
Source: Aesculap**



**Water microbiology  
Membrane filtration  
Target:  
Coliforms- 0/100 ml  
Pseudomonas- 0/100 mL  
Ref: WHO, HPA (UK)**

# Monthly water quality monitoring

## (A sample report)



| Name of the places | Chlorine Level (ppm) | TDS (ppm) | Total aerobic colony count per 100 ml | Nature of Colony | Pseudomonas | Coliforms |
|--------------------|----------------------|-----------|---------------------------------------|------------------|-------------|-----------|
| CSSD Double RO     | 0.48                 | 2         | 0 cfu                                 | NA               | Not Found   | Not Found |
| CSSD Single RO     | 0.41                 | 55        | 0 cfu                                 | NA               | Not Found   | Not Found |
| CSSD Hand Hygiene  | 0.40                 | 56        | 0 cfu                                 | NA               | Not Found   | Not Found |
| Negative Control   | --                   | --        | 0 cfu                                 | --               | Not Found   | Not Found |

# Tools for air quality monitoring



**Air Particle Counter**



**Anemometer**



**Agar plates- settle plates**



**Microbiological Air Sampler (MAS)**



**Hygrometer**

# Air microbiology in CSSD sterile store

## (A sample report)



| Location examples                    | At rest (cfu) | Operational (cfu) |
|--------------------------------------|---------------|-------------------|
| Clean support room<br>(ISO STANDARD) | 5             | 50                |

| LOCATION                                             | MEDIUM              | CFU | Morphology                                                       | Gram's staining | Interpretation                                                                                      |
|------------------------------------------------------|---------------------|-----|------------------------------------------------------------------|-----------------|-----------------------------------------------------------------------------------------------------|
| Shelf next to<br>unloading bay of<br>T-max autoclave | Nutrient Agar       | 36  | Small and large<br>whitish and<br>creamish colonies              | GPCs and GPBs   | Acceptable<br>colony counts <<br>50 cfu under<br>operational<br>settings.<br>No fungal<br>colonies. |
| Shelf next to<br>unloading bay of<br>T-max autoclave | Sabouraud's<br>Agar | 10  | Small whitish<br>and creamish<br>colonies                        | GPCs and GPBs   |                                                                                                     |
| Shelf near<br>entrance door of<br>CSSD sterile store | Nutrient Agar       | 3   | Small whitish,<br>creamish, and<br>couple of grayish<br>colonies | GPCs and GPBs   | Acceptable<br>colony counts <<br>50 cfu under<br>operational<br>settings.<br>No fungal<br>colonies. |
| Shelf near<br>entrance door of<br>CSSD sterile store | Sabouraud's<br>Agar | 2   | Yellowish<br>colonies                                            | GPBs            |                                                                                                     |

## Air Particle Count in CSSD

Class ISO 5 and standard 100 maintain in sterile store

| Location              | Date       | Time       | 1<br>um | 5<br>um | 10<br>um |
|-----------------------|------------|------------|---------|---------|----------|
| Sterile Store Phase-1 | 26/06/2026 | 2:26:28 PM | 749     | 24      | 6        |
| Sterile Store Phase-2 | 26/06/2026 | 3:27:38 PM | 1266    | 78      | 52       |

| CLASS | FED STD 209E EQUIVALENT | Maximum concentration limits (particles/m <sup>3</sup> of air) for particles equal to and larger than the sizes listed below |            |            |            |           |          |
|-------|-------------------------|------------------------------------------------------------------------------------------------------------------------------|------------|------------|------------|-----------|----------|
|       |                         | 0.1 Micron                                                                                                                   | 0.2 Micron | 0.3 Micron | 0.5 Micron | 1 Micron  | 5 Micron |
| ISO 1 |                         | 10                                                                                                                           | 2          |            |            |           |          |
| ISO 2 |                         | 100                                                                                                                          | 24         | 10         | 4          |           |          |
| ISO 3 | 1                       | 1,000                                                                                                                        | 237        | 102        | 35         | 8         |          |
| ISO 4 | 10                      | 10,000                                                                                                                       | 2,370      | 1,020      | 352        | 83        |          |
| ISO 5 | 100 →                   | 100,000                                                                                                                      | 23,700     | 10,200     | 3,520      | 832       | 29       |
| ISO 6 | 1,000                   | 1,000,000                                                                                                                    | 237,000    | 102,000    | 35,200     | 8,320     | 293      |
| ISO 7 | 10,000                  |                                                                                                                              |            |            | 352,000    | 83,200    | 2,930    |
| ISO 8 | 100,000                 |                                                                                                                              |            |            | 3,520,000  | 832,000   | 29,300   |
| ISO 9 |                         |                                                                                                                              |            |            |            | 8,320,000 | 293,000  |

# TDS meter and Hygrometer yearly calibration report

| MEASURE TECHNO LAB                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                   |                |                      |                              |                 |                          |                |            |    |                          |    |             |   |                       |               |     |     |   |    |  |      |      |   |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|----------------|----------------------|------------------------------|-----------------|--------------------------|----------------|------------|----|--------------------------|----|-------------|---|-----------------------|---------------|-----|-----|---|----|--|------|------|---|
| 2, B.T. ROAD (JAYANTI CINEMA COMPLEX), BARRACKPORE, KOLKATA - 700120, W.B.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                   |                |                      |                              |                 |                          |                |            |    |                          |    |             |   |                       |               |     |     |   |    |  |      |      |   |
| Phone : 033 - 2215 - 0032, 2215 - 9687, 8100875519, Mobile: 9831190974, LAB:- 8100143376, E-mail: measuretechno@yahoo.co.in                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                   |                |                      |                              |                 |                          |                |            |    |                          |    |             |   |                       |               |     |     |   |    |  |      |      |   |
| CALIBRATION CERTIFICATE OF DIGITAL TDS METER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                   |                |                      |                              |                 |                          |                |            |    |                          |    |             |   |                       |               |     |     |   |    |  |      |      |   |
| CALIBRATION CERTIFICATE NO.: MTL / TMC / R14 / 04 - 26                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                   |                | Page: 1 of 1         |                              |                 |                          |                |            |    |                          |    |             |   |                       |               |     |     |   |    |  |      |      |   |
| 1.0 Service Request No.:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | MTL / 28D / 04 / 26 - 27                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                   |                |                      |                              |                 |                          |                |            |    |                          |    |             |   |                       |               |     |     |   |    |  |      |      |   |
| 1.1 Issued to:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | M/s. Tata Medical Center,<br>14, Major Arterial Road (EW),<br>New Town, Rajarhat, Kolkata - 700160.                                                                                                                                                                                                                                                                                                                              |                                                                                                                                   |                |                      |                              |                 |                          |                |            |    |                          |    |             |   |                       |               |     |     |   |    |  |      |      |   |
| 1.2 Description & Identification of Item to be Calibrated:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | a) Name: Digital TDS Meter<br>c) SI. No.: N.S.<br>e) Model / Type: TDS - 3<br>g) Sensor: N.A.<br>i) End User: Phase 1, CSSD (2nd Floor)                                                                                                                                                                                                                                                                                          | b) Code No.: TMCY/KOL/BM/CSSD/1963<br>d) Make: HM Digital<br>f) Range: 0 to 9990 PPM<br>h) Resolution: 1 PPM<br>j) Accuracy: N.S. |                |                      |                              |                 |                          |                |            |    |                          |    |             |   |                       |               |     |     |   |    |  |      |      |   |
| 1.3 Date of receipt of item :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 28-04-26                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                   |                |                      |                              |                 |                          |                |            |    |                          |    |             |   |                       |               |     |     |   |    |  |      |      |   |
| 1.5 Date of calibration :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 28-04-26                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                   |                |                      |                              |                 |                          |                |            |    |                          |    |             |   |                       |               |     |     |   |    |  |      |      |   |
| 1.7 Date of Issue :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 30-04-26                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                   |                |                      |                              |                 |                          |                |            |    |                          |    |             |   |                       |               |     |     |   |    |  |      |      |   |
| 1.8 Environmental Conditions During Calibration:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Temperature: 30°C ± 10°C<br>Humidity: 60 % RH ± 20 % RH                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                   |                |                      |                              |                 |                          |                |            |    |                          |    |             |   |                       |               |     |     |   |    |  |      |      |   |
| 1.9 Method of Calibration:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | SOP - 64                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                   |                |                      |                              |                 |                          |                |            |    |                          |    |             |   |                       |               |     |     |   |    |  |      |      |   |
| 2.0 Traceability:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | a) The following standards / Equipment have been used.<br>IDS Soluter (30 PPM / 300 PPM / 1000 PPM)                                                                                                                                                                                                                                                                                                                              |                                                                                                                                   |                |                      |                              |                 |                          |                |            |    |                          |    |             |   |                       |               |     |     |   |    |  |      |      |   |
| 2.1 Result :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <table border="1"> <thead> <tr> <th>SL No.</th> <th>Parameter/Range</th> <th>Nominal Value on DUC PPM</th> <th>Std. Value PPM</th> <th>Error PPM</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>TDS</td> <td>50</td> <td>50</td> <td>0</td> </tr> <tr> <td>2.</td> <td>0 to 9990 PPM</td> <td>301</td> <td>300</td> <td>1</td> </tr> <tr> <td>3.</td> <td></td> <td>1003</td> <td>1000</td> <td>3</td> </tr> </tbody> </table> |                                                                                                                                   |                |                      | SL No.                       | Parameter/Range | Nominal Value on DUC PPM | Std. Value PPM | Error PPM  | 1. | TDS                      | 50 | 50          | 0 | 2.                    | 0 to 9990 PPM | 301 | 300 | 1 | 3. |  | 1003 | 1000 | 3 |
| SL No.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Parameter/Range                                                                                                                                                                                                                                                                                                                                                                                                                  | Nominal Value on DUC PPM                                                                                                          | Std. Value PPM | Error PPM            |                              |                 |                          |                |            |    |                          |    |             |   |                       |               |     |     |   |    |  |      |      |   |
| 1.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | TDS                                                                                                                                                                                                                                                                                                                                                                                                                              | 50                                                                                                                                | 50             | 0                    |                              |                 |                          |                |            |    |                          |    |             |   |                       |               |     |     |   |    |  |      |      |   |
| 2.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0 to 9990 PPM                                                                                                                                                                                                                                                                                                                                                                                                                    | 301                                                                                                                               | 300            | 1                    |                              |                 |                          |                |            |    |                          |    |             |   |                       |               |     |     |   |    |  |      |      |   |
| 3.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                  | 1003                                                                                                                              | 1000           | 3                    |                              |                 |                          |                |            |    |                          |    |             |   |                       |               |     |     |   |    |  |      |      |   |
| <b>Remarks:</b><br>i) The calibration certificate is issued by M/s. MEASURE TECHNO LAB. This certificate refers only for the particular item submitted in calibration.<br>ii) The calibration certificate issued for this instrument is to be used for scientific or industrial purposes only. This result cannot be used for commercial purpose.<br>iii) Error = DUC Reading - Standard Reading.<br>iv) Calibrations are carried out without any adjustment or repair.<br>v) The calibration certificate if reproduced for any purpose, should be reproduced in full. The reproduction of a Part or an abstract thereof has to be got specifically approved from M/s. MEASURE TECHNO LAB.<br>vi) The results in the calibration certificate are valid at the time of and under the stated conditions of measurement. The results refers only to the item submitted for calibration.<br>vii) Statement of conformity is not mentioned. |                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                   |                |                      |                              |                 |                          |                |            |    |                          |    |             |   |                       |               |     |     |   |    |  |      |      |   |
| DUC - Device Under Calibration    N.S. - Not Specified    N.A. - Not Applicable    Std. - Standard                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                   |                |                      |                              |                 |                          |                |            |    |                          |    |             |   |                       |               |     |     |   |    |  |      |      |   |
| <table border="1"> <thead> <tr> <th colspan="2">Opinions and Interpretations</th> <th></th> <th></th> </tr> </thead> <tbody> <tr> <td>Calibrated</td> <td></td> <td>Accepted / Valid for use</td> <td></td> </tr> <tr> <td>Limited Use</td> <td>✓</td> <td>Rejected / Out of use</td> <td></td> </tr> </tbody> </table>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                   |                |                      | Opinions and Interpretations |                 |                          |                | Calibrated |    | Accepted / Valid for use |    | Limited Use | ✓ | Rejected / Out of use |               |     |     |   |    |  |      |      |   |
| Opinions and Interpretations                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                   |                |                      |                              |                 |                          |                |            |    |                          |    |             |   |                       |               |     |     |   |    |  |      |      |   |
| Calibrated                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                  | Accepted / Valid for use                                                                                                          |                |                      |                              |                 |                          |                |            |    |                          |    |             |   |                       |               |     |     |   |    |  |      |      |   |
| Limited Use                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | ✓                                                                                                                                                                                                                                                                                                                                                                                                                                | Rejected / Out of use                                                                                                             |                |                      |                              |                 |                          |                |            |    |                          |    |             |   |                       |               |     |     |   |    |  |      |      |   |
| Calibrated by: <br>Measure Techno Lab<br>Calibration Engineer                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                   |                |                      |                              |                 |                          |                |            |    |                          |    |             |   |                       |               |     |     |   |    |  |      |      |   |
| Checked / Approved by: <br>Quality / Technical Manager<br>S. Pandey                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                   |                |                      |                              |                 |                          |                |            |    |                          |    |             |   |                       |               |     |     |   |    |  |      |      |   |
| ***End of the Calibration Certificate***                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                   |                |                      |                              |                 |                          |                |            |    |                          |    |             |   |                       |               |     |     |   |    |  |      |      |   |
| Form No. - MTL/22A/2006                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Issue No. : 2                                                                                                                                                                                                                                                                                                                                                                                                                    | Issue Date : 10.11.06                                                                                                             | Rev. No. : 05  | Rev. Date : 10.02.25 |                              |                 |                          |                |            |    |                          |    |             |   |                       |               |     |     |   |    |  |      |      |   |

| MEASURE TECHNO LAB                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                         |                         |                          |                                              |
|----------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|--------------------------|----------------------------------------------|
| 2, B.T. ROAD (JAYANTI CINEMA COMPLEX), BARRACKPORE, KOLKATA - 700120, W.B.                                                                               |                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                         |                         |                          |                                              |
| Phone : 033 - 2215 - 0032, 2215 - 9687, 8100875519, Mobile: 9831190974, LAB:- 8100143376, E-mail: measuretechno@yahoo.co.in                              |                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                         |                         |                          |                                              |
| CALIBRATION CERTIFICATE OF DIGITAL THERMO HYGROMETER                                                                                                     |                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                         |                         |                          |                                              |
| CALIBRATION CERTIFICATE NO.: MTL / TMC / R02 / 04 - 26                                                                                                   |                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                         |                         | ULR - 024349260000227821 |                                              |
| Page: 1 of 2                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                         |                         |                          |                                              |
| 1.0 Service Request No.:                                                                                                                                 | MTL / 28D / 04 / 26 - 27                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                         |                         |                          |                                              |
| 1.1 Issued to:                                                                                                                                           | M/s. Tata Medical Center,<br>14, Major Arterial Road (EW),<br>New Town, Rajarhat, Kolkata - 700160.                                                                                                                                                                                                                                                        |                                                                                                                                                         |                         |                          |                                              |
| 1.2 Description & Identification of item to be Calibrated:                                                                                               | a) Name: Digital Thermo Hygrometer<br>c) SI. No.: N.S.<br>e) Model / Type: 288-ATF                                                                                                                                                                                                                                                                         | b) Code No.: TMCY/KOL/BM/CSSD/8125<br>d) Make: HTC<br>f) Range: 5°C to 70°C & 10 % RH to 99 % RH<br>h) Resolution: 0.1 °C & 1 % RH<br>j) Accuracy: N.S. |                         |                          |                                              |
| 1.3 Date of receipt of item :                                                                                                                            | 27-04-26                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                         |                         |                          |                                              |
| 1.5 Date of calibration :                                                                                                                                | 28-04-26                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                         |                         |                          |                                              |
| 1.7 Date of Issue :                                                                                                                                      | 30-04-26                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                         |                         |                          |                                              |
| 1.8 Environmental Conditions During Calibration:                                                                                                         | Temperature: 25 °C ± 4 °C<br>Humidity: 30 % RH to 75 % RH                                                                                                                                                                                                                                                                                                  |                                                                                                                                                         |                         |                          |                                              |
| 1.9 Method of Calibration:                                                                                                                               | SOP / TH / HU - 01                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                         |                         |                          |                                              |
| 2.0 Traceability:                                                                                                                                        | The following standards/Equipment used for calibration are traceable to National/International standards through unbroken chain of calibration via ISO/IEC 17045 : 2017 Accredited calibration laboratory.<br>ii) Temperature & Humidity Meter Cal. Certificate No. RPL-2025-0569-C-006885 (IAP, ACPL, Chennai) (Ca. Valid till 11/25, Due Date: 11/26/26) |                                                                                                                                                         |                         |                          |                                              |
| 2.1 Result :                                                                                                                                             | Thermal Calibration : (Specific Heat & Humidity)                                                                                                                                                                                                                                                                                                           |                                                                                                                                                         |                         |                          |                                              |
| SL No.                                                                                                                                                   | Parameter/Range                                                                                                                                                                                                                                                                                                                                            | Measured Value on DUC °C                                                                                                                                | Corrected Std. Value °C | Error °C                 | Measurement Expanded Uncertainty ± °C & % RH |
| At 50 % RH                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                         |                         |                          |                                              |
| 1.                                                                                                                                                       | Temperature<br>5 °C to 70 °C                                                                                                                                                                                                                                                                                                                               | 10.1                                                                                                                                                    | 10.54                   | -0.24                    | 0.89                                         |
| 2.                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                            | 29.4                                                                                                                                                    | 29.77                   | -0.37                    |                                              |
| 3.                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                            | 38.2                                                                                                                                                    | 38.72                   | -0.52                    |                                              |
| 4.                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                            | 47.8                                                                                                                                                    | 48.45                   | -0.65                    |                                              |
| At 25 °C                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                         |                         |                          |                                              |
| 1.                                                                                                                                                       | Humidity<br>10 % RH to 99 % RH                                                                                                                                                                                                                                                                                                                             | 24                                                                                                                                                      | 24.93                   | -0.93                    | 1.81                                         |
| 2.                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                            | 47                                                                                                                                                      | 48.24                   | -1.24                    |                                              |
| 3.                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                            | 69                                                                                                                                                      | 70.35                   | -1.35                    |                                              |
| 4.                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                            | 78                                                                                                                                                      | 79.91                   | -1.91                    |                                              |
| Calibrated by: <br>Measure Techno Lab<br>Calibration Engineer       |                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                         |                         |                          |                                              |
| Checked / Approved by: <br>Quality / Technical Manager<br>S. Pandey |                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                         |                         |                          |                                              |
| Form No. - MTL/22/2006                                                                                                                                   | Issue No. : 2                                                                                                                                                                                                                                                                                                                                              | Issue Date : 10.11.06                                                                                                                                   | Rev. No. : 05           | Rev. Date : 10.02.25     |                                              |

# Shelf life determination

Sterility is event-related rather than time-related. But if a facility or local policy still enforces a time-based expiration date, shelf life is calculated based on strict operational variables

Variables:

- 1) Quality of packaging materials
- 2) „ equipment/sterilizer
- 3) „ sterile store condition
- 4) „ handling frequency
- 5) „ distribution system

Action steps for CSSD staff:

- Inspect the packages
- Practice stock rotation (FIFO)
- Sterility testing in Microbiology

**Peel pouches or TYVEK**  
Typically 6 to 12 months

**Non-woven wraps:**  
Usually 6 months

**Rigid containers:**  
Up to 6 to 12 months, depending on manufacturer validation and filter condition.

**TMCK-CSSD sterile product shelf life**  
Steam is 3 months  
EO/Plasma is 6 months

# Sterility testing by -72 hrs aerobic incubation

|                                   |                                               |
|-----------------------------------|-----------------------------------------------|
| Lab no                            | CSSD/25/990                                   |
| Sample received on                | 06/11/25                                      |
| Specimen type                     | Drill bit                                     |
| Department                        | CSSD                                          |
| Media used                        | Blood Agar plate                              |
| Date of collection                | NA                                            |
| Date of expiry                    | NA                                            |
| Incubation type and temperature   | Aerobic and 37°C                              |
| Result after 5 days of incubation | No growth                                     |
| Report                            | No growth after 72 hrs.of aerobic incubation. |
| Status                            | Final                                         |
| Reporting Date                    | 09/11/25                                      |

Table 5: Profile of various products received from other section of Hospital

| Others Sample                                             | Year 2015 | Year 2016 | Year 2017 | Year 2018 | Year 2019 | Year 2020 | Year 2021 | Year 2022 | Year 2023 | Year 2024 | Year 2025 (1 <sup>st</sup> Jan-31 <sup>st</sup> August) | Total Numbers of respective samples in 2015-2025 August |
|-----------------------------------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|---------------------------------------------------------|---------------------------------------------------------|
| BMT Sample                                                | 112       | 94        | 109       | 107       | 131       | 114       | 137       | 157       | 161       | 154       | 91                                                      | 1367                                                    |
| CSSD Sample                                               | 13        | 3         | 3         | 4         | 5         | 9         | 4         | 3         | 4         | 6         | 3                                                       | 57                                                      |
| Hospital Pharmacy                                         | 25        | 23        | 34        | 12        | 15        | 3         | 14        | 3         | 55        | 32        | 31                                                      | 247                                                     |
| Clarion Project Sample                                    | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 9         | 4         | 4         | 0                                                       | 17                                                      |
| Total Numbers Of Others Samples Received In 2015-2025 May | 150       | 120       | 146       | 123       | 151       | 126       | 155       | 172       | 224       | 196       | 125                                                     | 1688                                                    |

Table 6: Positivity Ratio of Other Products, received from Other Areas of Hospital (Stem Cell Transplant Unit, Hospital Pharmacy & Central Sterile Supply Department)

| Others                   | Total Numbers of Sterility Test Done In 2015- 2025 August | Total Numbers of Positivity Found in 2015- 2025 August | % of Positivity |
|--------------------------|-----------------------------------------------------------|--------------------------------------------------------|-----------------|
| BMT Sample               | 1367                                                      | 38                                                     | 2.77%           |
| Hospital Pharmacy Sample | 247                                                       | 27                                                     | 10.9%           |
| CSSD Items               | 57                                                        | 0                                                      | 0%              |
| Clarion Project Sample   | 17                                                        | 0                                                      | 0%              |

Table 7: Profile of the Broad Category of Microorganisms detected from Sterility Testing

|                       | Blood Bank Products | BMT Products | Hospital Pharmacy Products | CSSD Samples |
|-----------------------|---------------------|--------------|----------------------------|--------------|
| Gram Positive Cocci   | 32                  | 28           | 0                          | 0            |
| Gram Negative Bacilli | 6                   | 6            | 22                         | 0            |
| Gram Positive Bacilli | 8                   | 3            | 3                          | 0            |
| Yeast                 | 2                   | 1            | 2                          | 0            |

## Protocol for SUDs- Single used devices

Protocol for SUDs are here very simple

- Item/items if mark  denote as single used
- Once the item is used- send to CSSD
- Reprocess through patient name or ID code
- Return to OR with proper barcode records
- (Reason: Re-exploration or other issues with same patient)
- After discharge cut the item and send to Bio-medical
- Separate SUD register has been maintained properly

# CSSD records to MRD

Bowie-Dick test file-3years

Biological Indicator file (Steam/EO/Plasma) -3years

Sterilizer Cycle Print out (Steam/EO/Plasma) -3years

Washer disinfectant cycle record -3years

Sterilizer Register (Steam/EO/Plasma) (Including implantable materials) -3years

Sterile product dispatch register-3years

Preventive maintenance, Calibration & Leak Test report- Directly discard

Single used device (SUD) register-Directly discard

Loaner instruments file and Re-call file- Directly discard

# Old documents collected by external agency



| 19/06/2026 16:09                                                                                                                                                  |  |  IRON MOUNTAIN® |  | DESTROY PREWORKORDEF Scheduled Courier |  |                                                                                   |  | Page 1  |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------------------------------------------------------------------------------------------------|--|----------------------------------------|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|---------|--|
| <p>Tata Medical Center<br/>Medical Records<br/>OTHERS<br/>14 Major Arterial Road(EW)<br/>New Town, Rajarhat<br/>Kolkata-700156<br/>CONTACT: Antara<br/>PHONE:</p> |  |                                                                                                  |  |                                        |  | <p>No. 03010878 19/06/2026 16:07<br/>Acct: IMGHK071\MED\OTHERS<br/>PO#: 37695254 DEST<br/>Service Date: 23/06/2026 19:00<br/>Auth: Antara, Dey<br/>Route: INDKOL</p> |  |         |  |
| Location                                                                                                                                                          |  | Container                                                                                        |  | Alternate Code                         |  | Requestor\Cost Center                                                                                                                                                |  |         |  |
| Building: C8 Floor: 4169                                                                                                                                          |  | BK00000000059928                                                                                 |  |                                        |  | Antara\                                                                                                                                                              |  |         |  |
| QKC81141254                                                                                                                                                       |  | File: FK000003851099                                                                             |  | AltID: FK000003851099                  |  | Desc: PLASMA REGISTER                                                                                                                                                |  | Antara\ |  |
|                                                                                                                                                                   |  | File: FK000003851100                                                                             |  | AltID: FK000003851100                  |  | Desc: DISPATCH REGISTER                                                                                                                                              |  | Antara\ |  |
|                                                                                                                                                                   |  | File: FK000003851101                                                                             |  | AltID: FK000003851101                  |  | Desc: STEAM REGISTER                                                                                                                                                 |  | Antara\ |  |
|                                                                                                                                                                   |  | File: FK000003851102                                                                             |  | AltID: FK000003851102                  |  | Desc: ETO REGISTER (O.T)                                                                                                                                             |  | Antara\ |  |
|                                                                                                                                                                   |  | File: FK000003851103                                                                             |  | AltID: FK000003851103                  |  | Desc: AUTOCLAVE REGISTER/ STEAM REGISTER                                                                                                                             |  | Antara\ |  |
|                                                                                                                                                                   |  | File: FK000003851104                                                                             |  | AltID: FK000003851104                  |  | Desc: AUTOCLAVE REGISTER/ STEAM REGISTER                                                                                                                             |  | Antara\ |  |
|                                                                                                                                                                   |  | File: FK000003851105                                                                             |  | AltID: FK000003851105                  |  | Desc: AUTOCLAVE REGISTER/ STEAM REGISTER                                                                                                                             |  | Antara\ |  |
|                                                                                                                                                                   |  | File: FK000003851106                                                                             |  | AltID: FK000003851106                  |  | Desc: BOWIE DICK PCD FILE                                                                                                                                            |  | Antara\ |  |
| QKC81181632                                                                                                                                                       |  | BK00000000059930                                                                                 |  |                                        |  | Antara\                                                                                                                                                              |  |         |  |
|                                                                                                                                                                   |  | File: FK000003851117                                                                             |  | AltID: FK000003851117                  |  | Desc: B.I REPORT (ETO)                                                                                                                                               |  | Antara\ |  |
|                                                                                                                                                                   |  | File: FK000003851118                                                                             |  | AltID: FK000003851118                  |  | Desc: AUTOCLAVE REGISTER/ STEAM REGISTER                                                                                                                             |  | Antara\ |  |
|                                                                                                                                                                   |  | File: FK000003851119                                                                             |  | AltID: FK000003851119                  |  | Desc: DISPATCH REGISTER                                                                                                                                              |  | Antara\ |  |
|                                                                                                                                                                   |  | File: FK000003851120                                                                             |  | AltID: FK000003851120                  |  | Desc: B.I REPORT (STEAM)                                                                                                                                             |  | Antara\ |  |
|                                                                                                                                                                   |  | File: FK000003851121                                                                             |  | AltID: FK000003851121                  |  | Desc: B.I REPORT (PLASMA)                                                                                                                                            |  | Antara\ |  |
|                                                                                                                                                                   |  | File: FK000003851122                                                                             |  | AltID: FK000003851122                  |  | Desc: B.I REPORT (ETO)                                                                                                                                               |  | Antara\ |  |
|                                                                                                                                                                   |  | File: FK000003851123                                                                             |  | AltID: FK000003851123                  |  | Desc: CSSD DISPATCH REGISTER                                                                                                                                         |  | Antara\ |  |
|                                                                                                                                                                   |  | File: FK000003851124                                                                             |  | AltID: FK000003851124                  |  | Desc: DISPATCH REGISTER                                                                                                                                              |  | Antara\ |  |
|                                                                                                                                                                   |  | File: FK000003851125                                                                             |  | AltID: FK000003851125                  |  | Desc: B.I REPORT (STEAM)                                                                                                                                             |  | Antara\ |  |
|                                                                                                                                                                   |  | File: FK000003851126                                                                             |  | AltID: FK000003851126                  |  | Desc: PLASMA PRINTOUT                                                                                                                                                |  | Antara\ |  |
| QKC81183456                                                                                                                                                       |  | BK00000000059929                                                                                 |  |                                        |  | Antara\                                                                                                                                                              |  |         |  |
|                                                                                                                                                                   |  | File: FK000003851107                                                                             |  | AltID: FK000003851107                  |  | Desc: PLASMA PRINTOUT                                                                                                                                                |  | Antara\ |  |
|                                                                                                                                                                   |  | File: FK000003851108                                                                             |  | AltID: FK000003851108                  |  | Desc: ETO REGISTER (WARD)                                                                                                                                            |  | Antara\ |  |
|                                                                                                                                                                   |  | File: FK000003851109                                                                             |  | AltID: FK000003851109                  |  | Desc: DISPATCH REGISTER                                                                                                                                              |  | Antara\ |  |

# Soft copy documentation



## CSSD different important records

Total sterilization cycle run per day (Steam/EO/Plasma)

Total items sterilized per day

Daily water quality monitoring (TDS measurement)

Daily temperature-humidity monitoring

Maintenance department records

Total dressing materials sterilized per day

Infected patient case history

Biomedical records (machine breakdown)

Records of instruments broken

# Unit price of sterilization cost

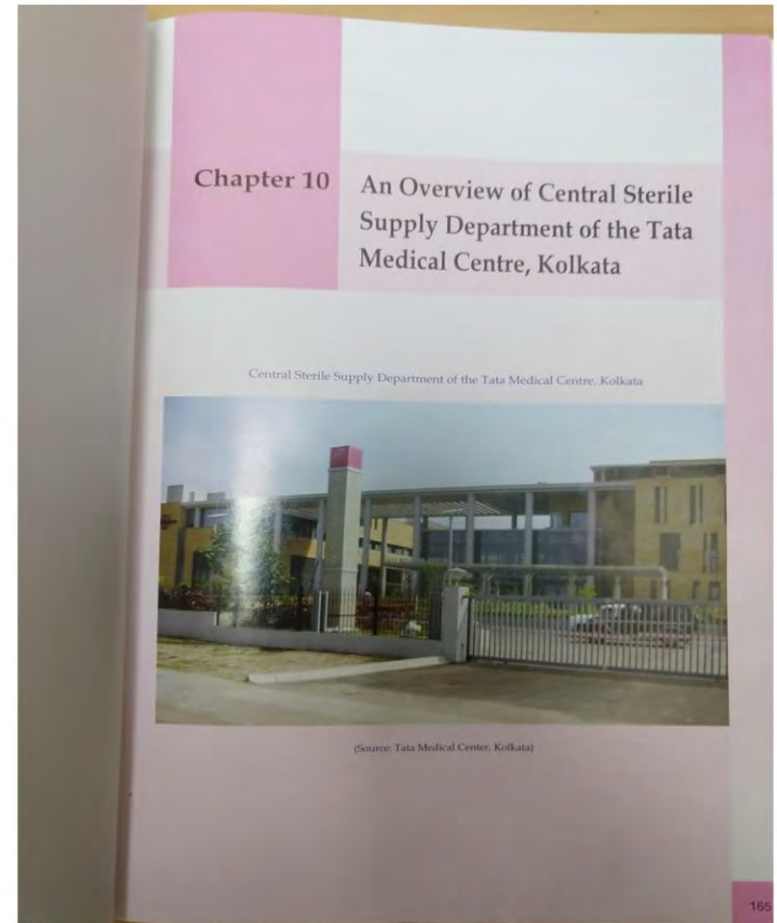
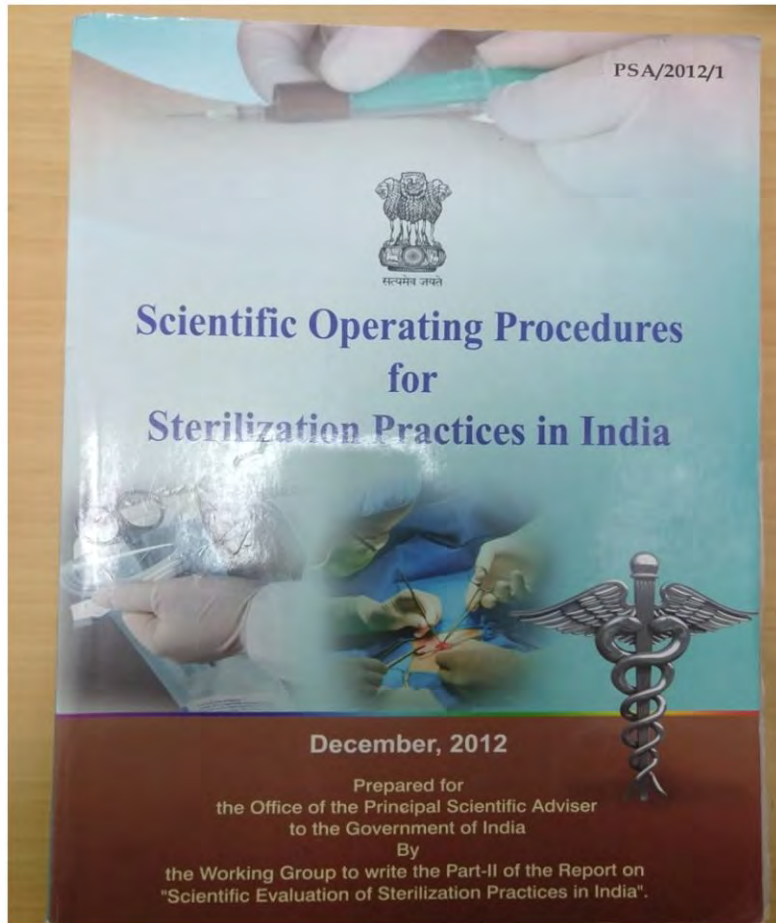


| Cost heads                                       | Surgical set      | Minor procedure set | Reusable Surgeon gown | Reusable Patient drape |
|--------------------------------------------------|-------------------|---------------------|-----------------------|------------------------|
|                                                  | Cost per unit INR | Cost per unit INR   | Cost per unit INR     | Cost per unit INR      |
| Manufacturing cost and laundry cost              | N/A               | N/A                 | 106.6                 | 146.77                 |
| Water cost                                       | 25.58             | 2.62                | 4.10                  | 3.28                   |
| Electricity cost                                 | 107.46            | 24.85               | 85.04                 | 81.32                  |
| Consumable cost                                  | 169.25            | 28.92               | 52.97                 | 52.68                  |
| Human Resource cost                              | 41.62             | 14.27               | 20                    | 16                     |
| Depreciation cost with maintenance contract cost | 30.16             | 10.34               | 13.07                 | 10.45                  |
| <b>Total</b>                                     | <b>374.07</b>     | <b>81.0</b>         | <b>281.78</b>         | <b>310.5</b>           |

## TMCT-CSSD-Achievements

- ‘One of the best CSSD in India’ as per Government of India CSSD advisory committee in 2012
- Successfully completed audits like  
c-Green OT,  
NABH safe-I,  
NABH nursing excellence  
NABH for hospitals
- TMCK-CSSD is CAHO certified.
- Received Nalini Gayatonde National Award on 7th National Scientific Conference, ISHACON 2025

**A special chapter published by Govt of India**  
**on**  
**CSSD at Tata Medical Center, Kolkata**



# Academic involvement

- 1) Diploma in Operation Theatre courses organized by Tata Medical Center and West Bengal State Medical Faculty
- 2) Molecular Medical Microbiology organized by Tata Medical Center and St. Xavier's college, Kolkata
- 3) Perform many workshops and seminars in last 14 years supported by WHO, CDC, HSI, ICMR, Kimberly, Aesculap, Gke, Dr. Weigert, 3M
- 4) TMCT-CSSD published 20 national and international publications
- 5) TMCT-CSSD webpage :  
<https://tmckolkata.com/in/vision-tmc/infection-control/>
- 6) CSSD staffs are certified

*Thank  
you!*