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## BRIEF HISTORY AND DESCRIPTION ABOUT ORGANIZATION

**Eternal Heart Care Centre** is a state-of-the-art tertiary care hospital in Jaipur city. This landmark Healthcare Institute is the result of the vision of Dr. Samin K. Sharma, world-renowned Interventional Cardiologist based at Mount Sinai Hospital, New York, USA. Founded in 2013, today it is one of the most preferred hospitals not only in Jaipur but also nationally and internationally owing to the exclusive services and excellent medical outcomes delivered.

## ORGANIZATION VISION AND MISSION

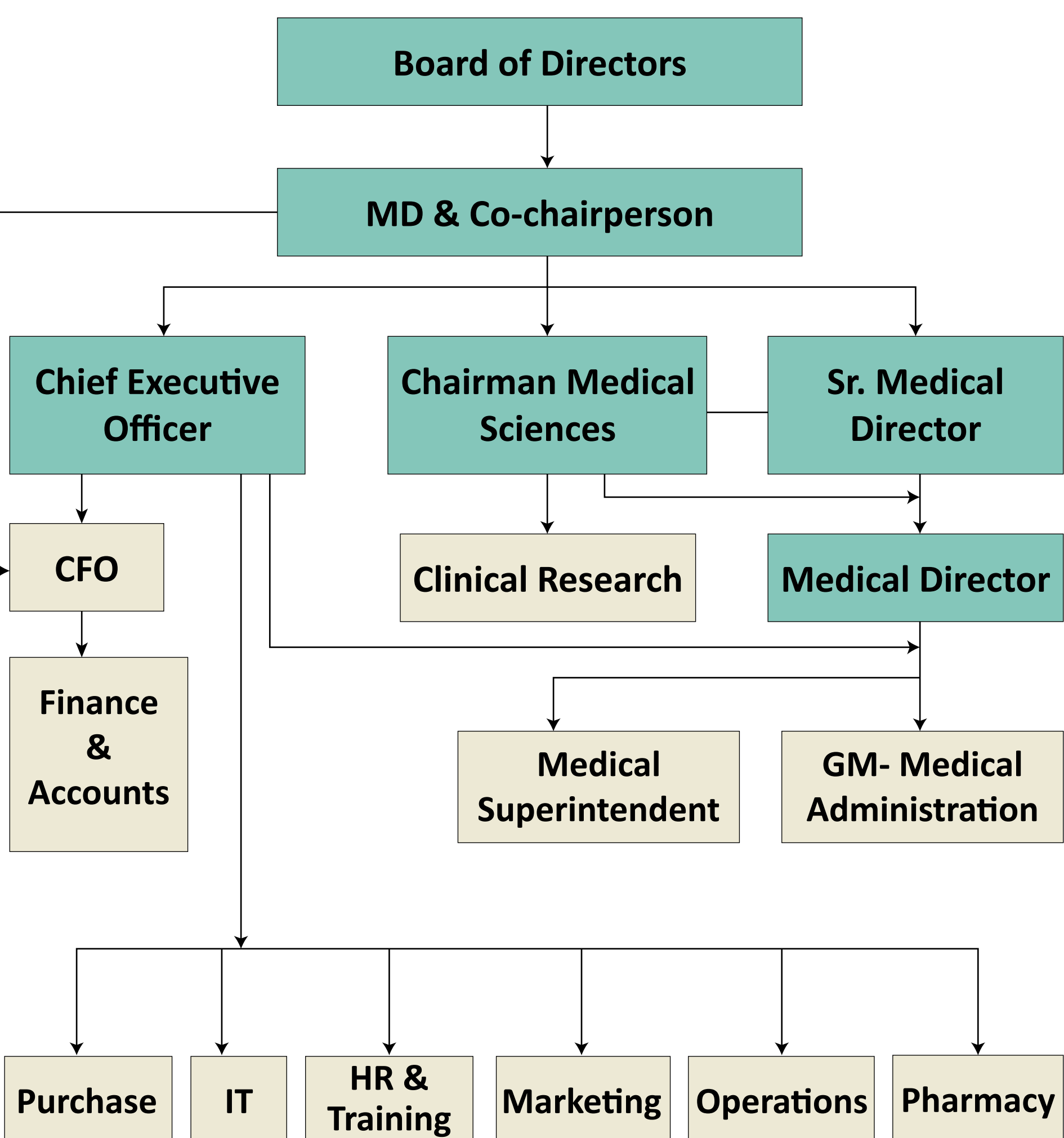
### VISION

A centre of excellence in area of medicine with highest international standard at affordable cost for the community around the globe.

### MISSION

To redefine healthcare by improving outcomes and experience of patients through cutting edge research and personalized clinical care including innovative, preventive, diagnostic, therapeutic and rehabilitation services.

## ORGANIZATION STRUCTURE



| THEORETICAL UNDERSTANDING                                                                                                | PRACTICAL EXPOSURE                                                                                                                              |
|--------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Essential of hospital services module taught in class helped to build a theoretical knowledge about hospital in mind. | 1. Hands- on experience helped to understand how theory is put into practice and inculcate a problem- solving attitude in myself.               |
| 2. Research methodology is one such area where I could not connect to the subject when I studied it theoretically.       | 2. While conducting research and collecting data for the study I could actually relate and put into application the concepts taught in college. |

## STUDY 1- STUDY ON EFFICIENCY OF AUTOCLAVE IN CSSD

### OBJECTIVES OF THE STUDY

1. To understand the process of sterilisation through autoclave.
2. To calculate the average cycle time of autoclave, to determine the utilization percentage and to assess sterilization efficacy using biological and chemical indicators.
3. To find out the factors affecting the process of sterilization through autoclave.
4. To discuss the possible solutions that could improve the efficiency of the autoclave.

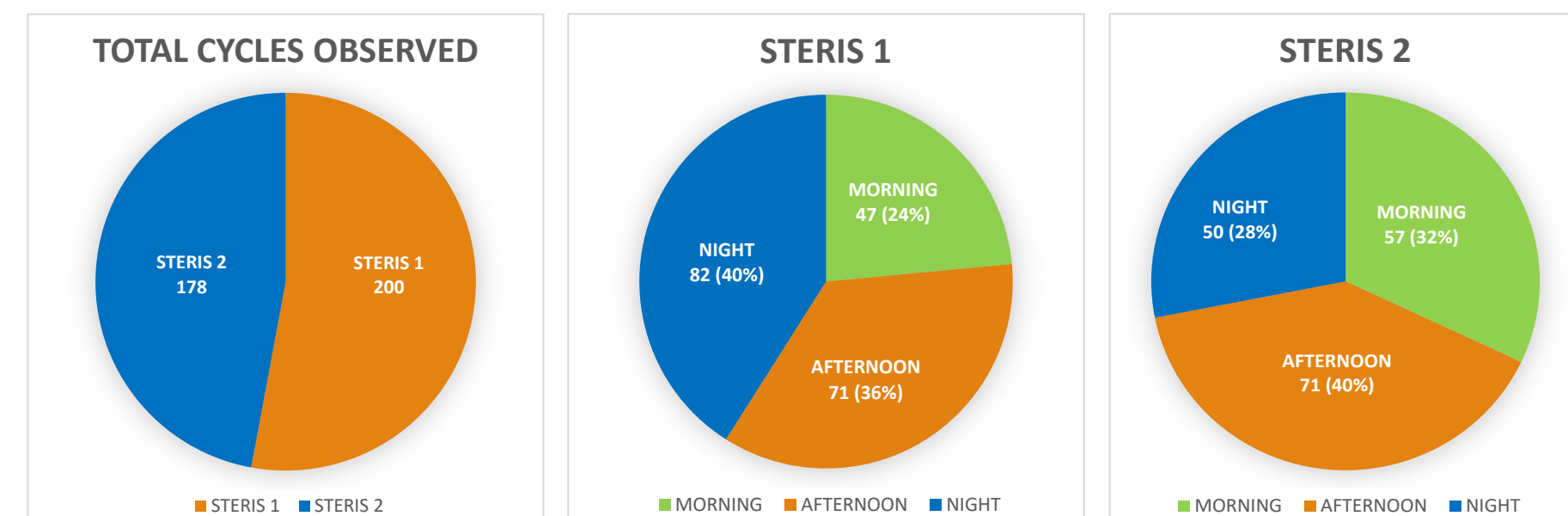
### RESEARCH METHODOLOGY

1. **STUDY DESIGN** - Observational Study
2. **DATA COLLECTION METHOD** -
  - Primary data -
    - From the observations made in the CSSD of the hospital.
    - By conducting unstructured informal interviews with the CSSD in-charge and technicians.
  - Secondary data -
    - From the department records and registers.
    - From the operational manual of the autoclave machine and by literature review.
3. **SAMPLING** - The autoclave cycles are observed and recorded for 25 days excluding sunday.

$$\text{UTILIZATION COEFFICIENT} = \frac{\text{No. of cycles run per day}}{\text{Max cycles can be run per day}} \times 100$$

Less than 50% is considered as under utilization.

### OBSERVATIONS



## COMPREHENSIVE TABLES DEPICTING EFFICIENCY OF AUTOCLAVE

| SHIFT TIMINGS | UTILIZATION BASED ON SHIFTS |          | AVERAGE DURATION /CYCLE |          | AVERAGE NO. OF CYCLE RUN/SHIFT |          | MAX NO. OF CYCLE THAT CAN BE RUN/ SHIFT |          |
|---------------|-----------------------------|----------|-------------------------|----------|--------------------------------|----------|-----------------------------------------|----------|
|               | STERIS 1                    | STERIS 2 | STERIS 1                | STERIS 2 | STERIS 1                       | STERIS 2 | STERIS 1                                | STERIS 2 |
| MORNING       | 64.00%                      | 45.60%   | 85 min                  | 51 min   | 1.92                           | 2.28     | 3                                       | 5        |
| AFTERNOON     | 72.00%                      | 56.80%   | 82 min                  | 50 min   | 2.88                           | 2.84     | 4                                       | 5        |
| NIGHT         | 45.71%                      | 20.00%   | 87 min                  | 51 min   | 3.20                           | 2        | 7                                       | 10       |
| TOTAL         | 57.14%                      | 37.6%    |                         |          | 8                              | 7.12     | 14                                      | 20       |

| DATE       | DURATION ( IN MINS) |          | TEMPERATURE (IN CELSIUS) |          | BIOLOGICAL INDICATOR REPORT |           | CHEMICAL INDICATOR REPORT |          |
|------------|---------------------|----------|--------------------------|----------|-----------------------------|-----------|---------------------------|----------|
|            | STERIS 1            | STERIS 2 | STERIS 1                 | STERIS 2 | STERIS 1                    | STERIS 2  | STERIS 1                  | STERIS 2 |
| 15-05-2023 | 01:29               | 53       | 134                      | 134      | NO GROWTH                   | NO GROWTH | PASS                      | PASS     |
| 22-05-2023 | 01:09               | 46       | 134                      | 134      | NO GROWTH                   | NO GROWTH | PASS                      | PASS     |
| 12-06-2023 | 01:35               | 59       | 134                      | 134      | NO GROWTH                   | NO GROWTH | PASS                      | PASS     |
| 19-06-2023 | 01:26               | 49       | 134                      | 134      | NO GROWTH                   | NO GROWTH | PASS                      | PASS     |

## FACTORS AFFECTING THE PROCESS OF STERILIZATION THROUGH AUTOCLAVE

1. Overloading of instruments.
2. Improper closing of autoclave door causing steam leakage from chamber.
3. Defect in solenoid valve of the autoclave.
4. Leakage of steam from pipes due to old plumbing causing insufficient steam pressure into the chamber.

### SUGGESTIONS

1. Usage of disposable sheets for packing of instruments.
2. Efficient loading will lead to increase in number of cycles and utilization percentage. It will also lead to better sterilization, better machine conditioning, increased flow of instruments from CSSD.
3. Regular inspection and maintenance of the machine.
4. Routine sterilization assessment test should be done.
5. Digitalization of records and advanced steam sterilizers could be considered.

## STUDY 2 – GAP ANALYSIS IN CSSD WITH REFERENCE TO DEPARTMENT SOP

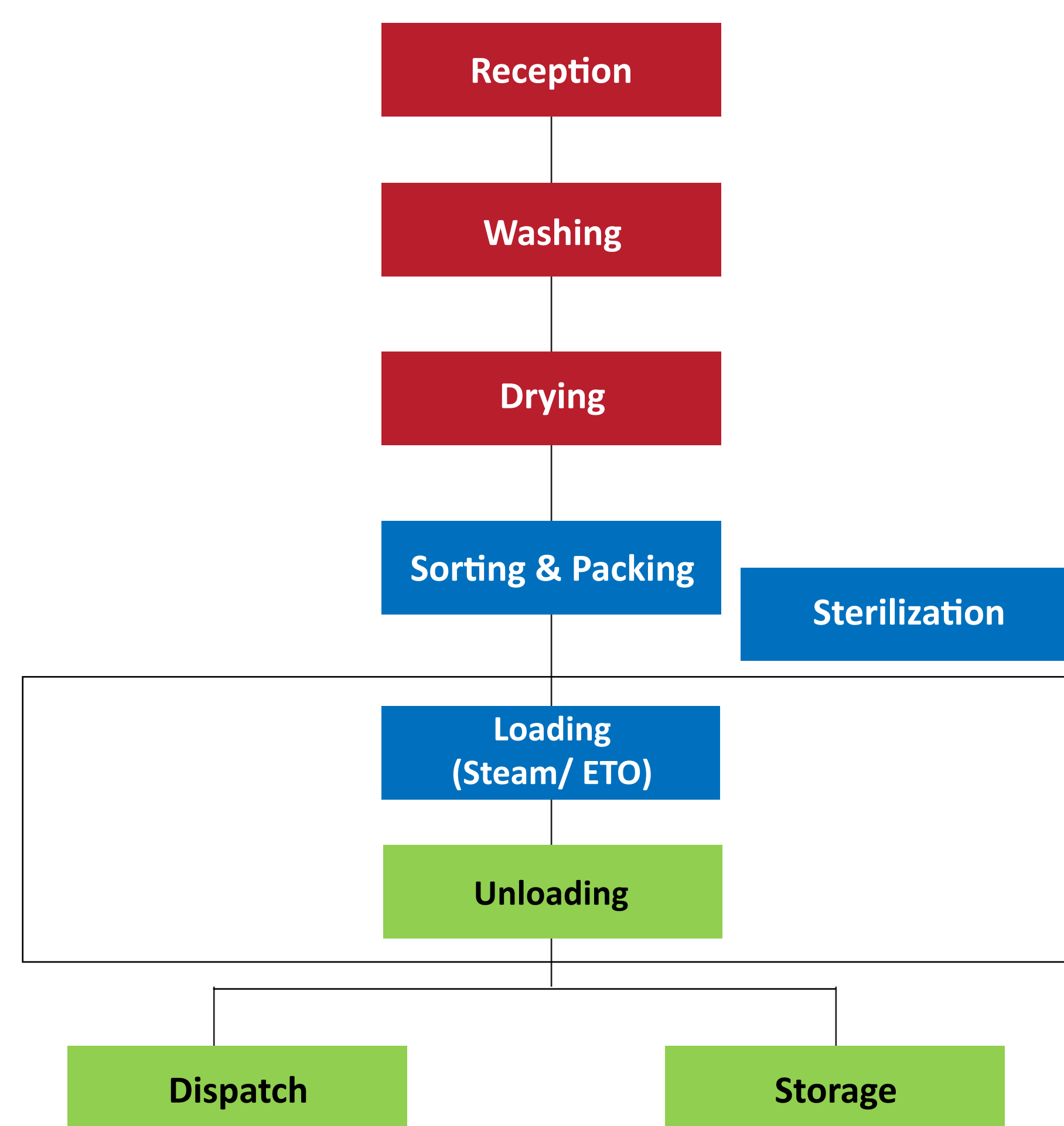
### OBJECTIVES OF THE STUDY

1. To study the workflow of the CSSD in general.
2. To review the existing standard operating procedures of the department.
3. To identify the gaps between the practices followed in the department and the standard operating procedures with reference to NABH guidelines.
4. To discuss possible solutions that would help reduce the gaps.

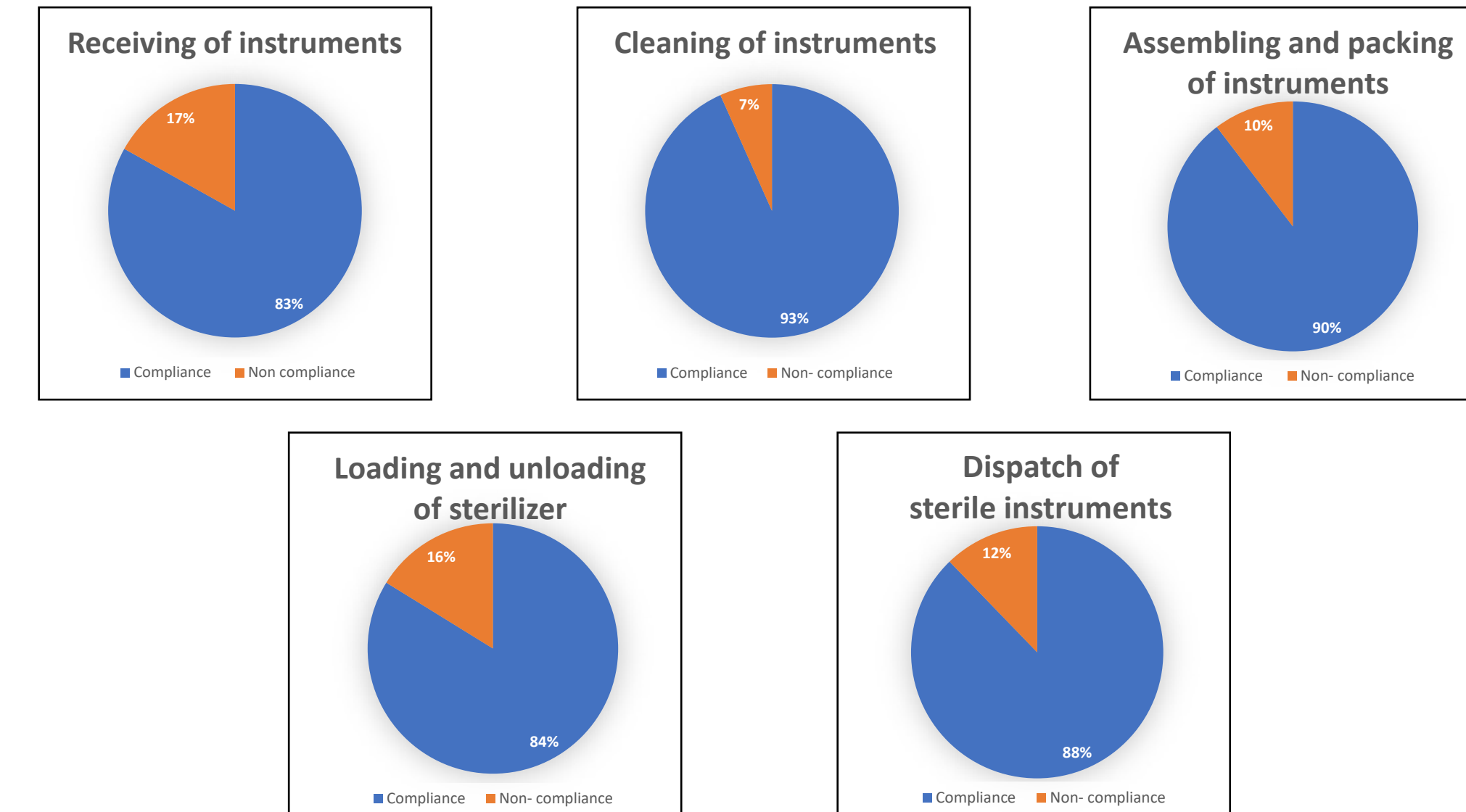
### RESEARCH METHODOLOGY

1. **STUDY DESIGN** – Observational Study
2. **DATA COLLECTION** – Primary data is collected on the basis of checklist prepared with reference to department SOP.
3. **SAMPLING** – The processes are observed for a period for 30 days between 8th May 2023 – 27th May 2023 and 12th June 2023 – 24th June 2023 excluding sundays, early morning and night shifts.

### PROCESS WORKFLOW



### OBSERVATIONS



### SUGGESTIONS

Proper training should be given to the staff to:

1. Maintain precautions while receiving and cleaning the instruments.
2. Check instruments for drying before packing as any moisture can lead to discoloration and pitting of instruments.
3. Crosscheck the checklist and sign before packing.
4. Strict instructions to not place the sterilized packs on the floor and given only through dispatch window and the staff receiving should wear sterile gown.

### SWOT ANALYSIS

| STRENGTHS                                                                                                                                                             | WEAKNESS                                                                                                                                                                                                          |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Location of CSSD and operational 24*7.<br>2. Sufficient space.<br>3. NABH and JCI accredited CSSD.<br>4. Qualified and experienced CSSD-in charge and technicians. | 1. Frequent breakdown of the autoclave.<br>2. Dependence on laundry for packing of instruments causing process delays.<br>3. Manual documentation of records and registries.                                      |
| OPPORTUNITIES                                                                                                                                                         | THREATS                                                                                                                                                                                                           |
| 1. Willingness of the staff to improve the process.<br>2. Technological advancement in the department.                                                                | 1. High investment costs.<br>2. Top management not considering investment in CSSD as a priority at the given point.<br>3. Risk of increase in HAI and duration of hospital stay due to ineffective sterilization. |

### LEARNINGS DURING INTERNSHIP

1. Learnt the process workflow in various departments of hospital and gained in-depth knowledge about the CSSD which is considered as one of the core department.
2. Learnt about NABH – IPSC goals, department audits with infection control nurse and quality head, closed file audits in MRD, PROM checklist, mock drills on safety codes.
3. Learnt valuable lessons of working according to timeline and importance of dressing appropriately, maintaining confidentiality and respecting organizational hierarchies.

### CHALLENGES FACED

1. Learning the technical aspect of the department.
2. Conducting research and data analysis posed a challenge since I had no prior experience.

### USEFULNESS OF THE INTERNSHIP

1. Got an exposure to the hospital industry and opportunity to work on a real-time project of conducting research.
2. Opportunity to enhance my hard as well as soft skills.
3. Internship provided me the opportunity to build connections with the industry experts and to learn from them.
4. Helped me to build confidence and understand the areas where I need to work on myself.

