



EFFIECIENCY OF CENTRAL STERILE SUPPLIES DEPARTMENT OF A MULTI SPECIALITY HOSPITAL

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INTRODUCTION

- Sterilization is the process by which the probability of occurrence of the viable micro organisms in a medical product can be reduced.
- As an infection control technique it forms the most essential and important practice in the control of disease transmission and propagations.
- It is not economically feasible to plant sterilization equipments in all the departments of the hospital. So it was thought better to centralize all the activities of the hospital in a single department, whereby the entire sterilization cycle can be completed effectively and under the direct supervision of trained personnel. This department is called “central sterile supplies department” or CSSD.

OBJECTIVES

- To study existing sterilization techniques of the CSSD in a tertiary care hospital.
- To analyze utilization of sterilization equipments of CSSD in the hospital.

MATERIALS AND METHODS: -

- **STUDY DESIGN:** Observational study.
- **SETTING:** Manipal Hospital, Jaipur
- **DURATION OF STUDY:** Feb 2017 – May 2017.
- **SAMPLING TYPE:** convince sampling
- **DATA COLLECTION METHOD:-** Data was collected from the records and checklists of the department.
- **SAMPLE SELECTION:** All staff working and equipments used in the CSSD during the study period.
- **DATA COLLECTION PROCEDURE:** Primary data will be collected from direct observation, interview and discussions with staff. Secondary data from hospital manuals, policies, records and checklists are used for acquiring information on equipment utilization.
- **DATA ANALYSIS PROCEDURE:** Data collected would be analyzed using MS excel

PROCESS FLOW IN CSSD DEPARTMENT OF MANIPAL HOSPITAL

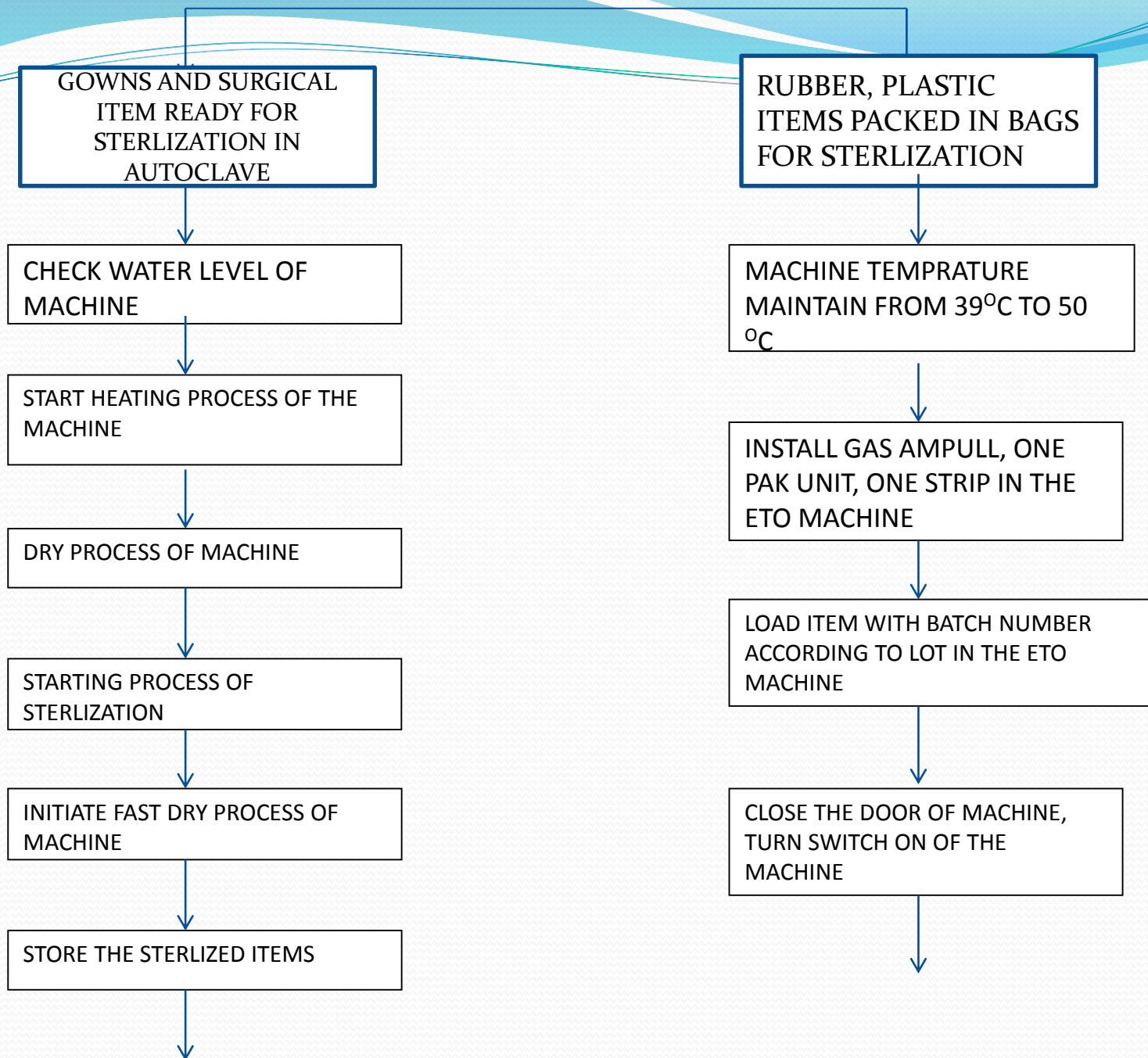
UNSTERILIZED ITEMS LIKE SURGICAL ITEMS ,
GOWNS , RUBBER ITEMS , PLASTIC ITEMS CAME AT
RECEIVED AREA OF CSSD DEPARTMENT FROM OT ,
GENERAL WARD, CATH LAB ETC.

ITEMS RECEIVED BY CSSD STAFF AND COUNT &
CHECK THE ITEMS IN QUANTITY AND GIVE
RECEIVED SIGN TO GDA

CSSD STAFF SEPRATE THE RUBBER ITEM , PALSTIC
ITEMS FROM METAL ITEMS AND CLOTHES

STAFF PASTE LABELS ON EACH ITEM WITH DATE
AND EXPIRY OF STERLIZATION





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graph TD; A[ISSUE ITEMS ACCORDING TO REQUIREMENT OF THE DEPARTMENT] --> B[PUGH VACCUME BUTTOM TO CREATE VACCUME IN THE MACHINE]; B --> C[STERLITY PROCESS TURN ON]; C --> D[AFTER STERLITY PROCESS COMPLETED AERATION PROCESS TURN ON]; D --> E[AFTER AERATION PROCESS COMPLETED AGAIN VACCUME PROCESS TURN ON]; E --> F[UNLOAD THE STERLIZED ITEM FROM MACHINE]; F --> G[ITEMS READY FOR DISPATCH ACCORDING TO THE REQUIREMENT OF DIFFERENT DEPARTMENT];
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ISSUE ITEMS ACCORDING TO
REQUIREMENT OF THE
DEPARTMENT

PUGH VACCUME BUTTOM TO
CREATE VACCUME IN THE
MACHINE

STERLITY PROCESS TURN ON

AFTER STERLITY PROCESS
COMPLETED AERATION
PROCESS TURN ON

AFTER AERATION PROCESS
COMPLETED AGAIN VACCUME
PROCESS TURN ON

UNLOAD THE STERLIZED ITEM
FROM MACHINE

ITEMS READY FOR DISPATCH
ACCORDING TO THE
REQUIREMENT OF DIFFERENT
DEPARTMENT

CALCULATION

- Utilization essentially means the use of the equipment to the full potential. Utilization index or Utilization co-efficient is one of the most important parameters to monitor the functional status of the equipment. It is the parameter to assess the productivity of a service or equipment.
- Use co-efficient = $N/M * 100$
- Where, N= Average number of hours the equipment is used per day.
- M= Maximum number of hours the equipment can be used per day.
- If the coefficient of utilization is less than 50% than it is under utilized

SPECIFICATIONS OF AUTOCLAVES USED

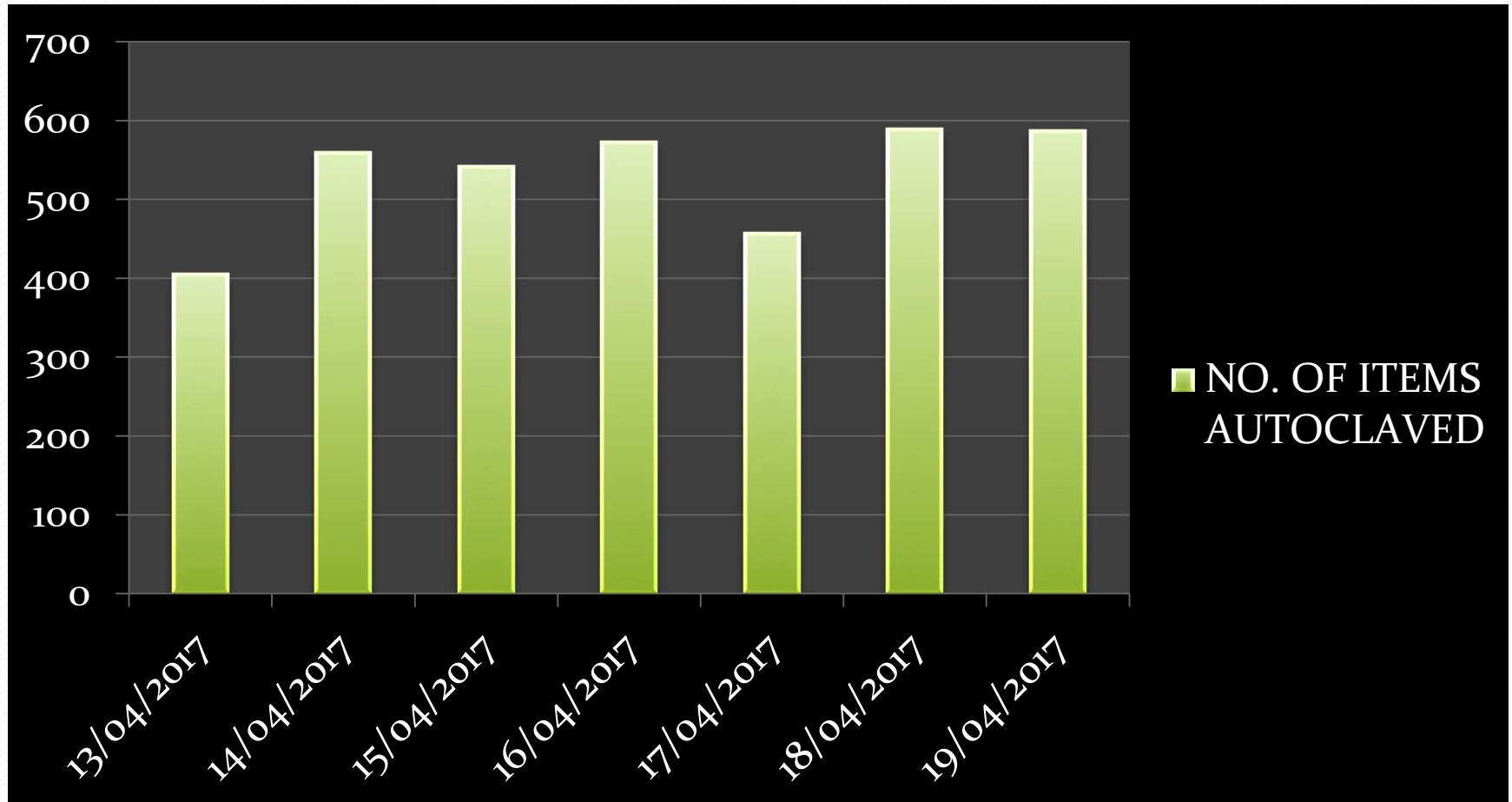
There are 2 autoclaves. The specifications are as follows:

- Operating pressure = 1.2 kg/cm³
- Operating temperature = 1210C – 1240C
- Designed working pressure = 1.26 kg/ cm³
- Space – 3.5cu.ft.
- Diameter- 22inches
- Electrical operation needs =415 volts
- Hydrostatic test pressure: -
- Jacket = 2.6kg/cm³ Chamber = 1.9 kg / cm
- Connected - 400/ 440V.

FINDINGS

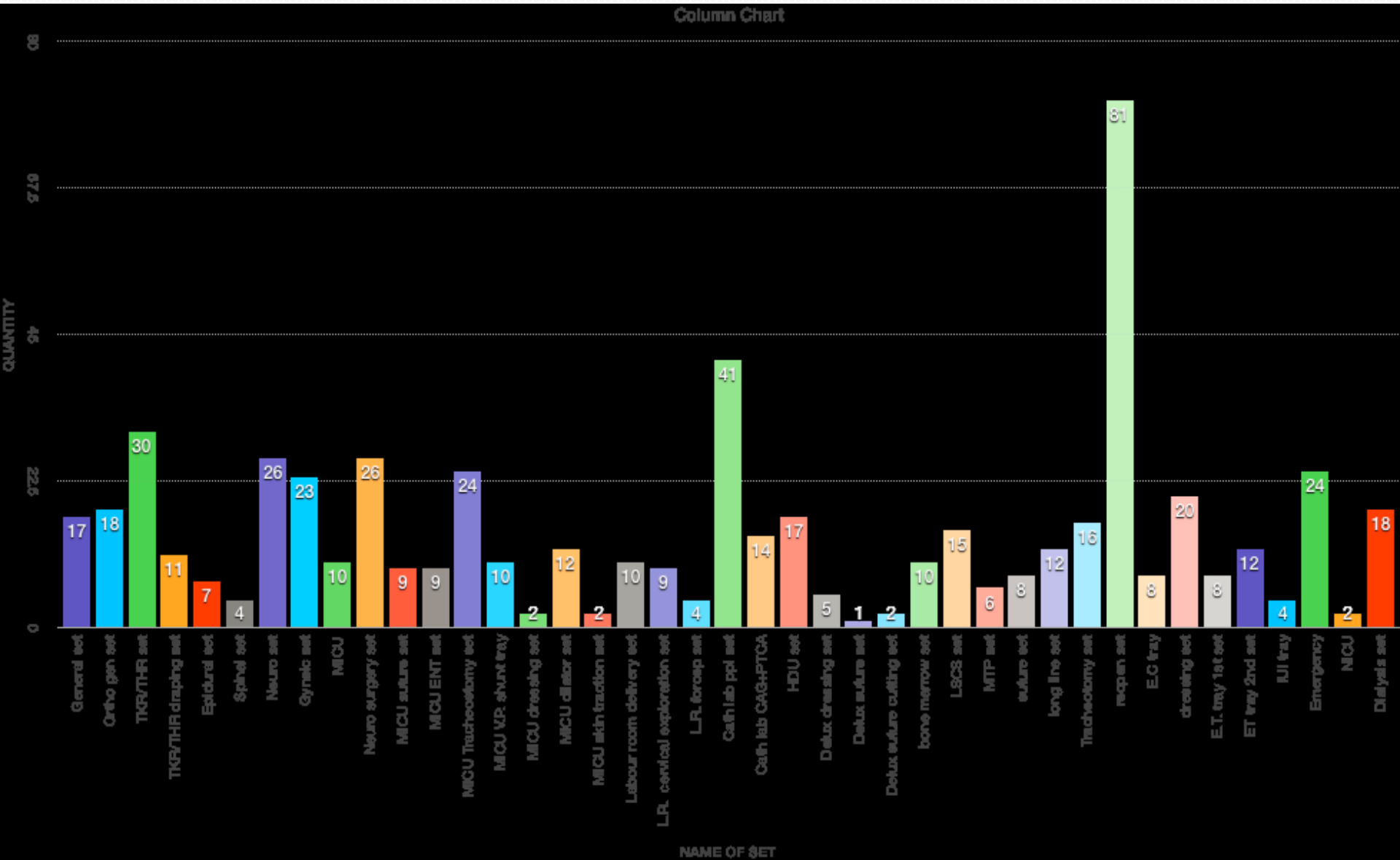
- The study revealed that Steam sterilization at a temperature of 121C- 124C with a holding time of 15-20 minutes and ethylene oxide is being practiced in the CSSD. Chemical, biological and mechanical indicators are regularly used for sterilization. The chemical indicators being used are Adhesive sterilization tape, Multivariable indicator, and steam sterilization integrator. The biological indicator being used is Bacillus Stearothermophilus. The mechanical indicators being referred to are Time, Temperature, and Pressure and Humidity charts. The packing material used to wrap items for sterilization is linen. The Utilization Coefficient of the two autoclaves was found to be 60%

Weekly workload on the autoclaves



SET OF ITEMS AUTOCLAVED PER DAY IN CSSD

DEPARTMENT OF MANIPAL HOSPITAL



SUGGESTIONS

- **Ensure proper training.** One of the most important elements in central sterile processing is employees' training. Regular training sessions should be held for the cssd department staff to ensure quality of work.
- **Cleanliness-** daily check or rounds by the assigned staff as there was lack of cleanliness observed.
- **Maintenance** –regular and within time maintenance as lack and delay in the maintenance of equipments and water supply was observed.
- **Safety-** WHO standards of safety measures should be practiced by the staff such wearing gloves, disposable shoe covers etc.
- **Utilization-** The utilization of the sterilization equipment can be made 100% by increasing the number of staff or the number of loads per day.



THANK
YOU