

## **REVIEW OF CENTRAL STERILE SUPPLY DEPARTMENT(CSSD)**

### **IN A HOSPITAL**

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#### **ABSTRACT**

Central sterile procedures mechanism forms an important and essential part of a hospital. Well-organized and effective sterilization and aseptic technique are the continuing battles against hospital-acquired infection. Also since the demand for hospital services all over the world have increased tremendously, it was considered that all large and medium size hospital must have a properly functioning of central sterile procedures mechanisms.

**KEYWORDS:**CSSD, Sterilization & Infection

#### **INTRODUCTION**

##### **Definition of CSSD**

It may be defined as a service responsible for processing, issue, and control of professional supply and equipment to various areas in a hospital.

Infection control in different part of the hospital is very essential. Sterilization of various instruments, equipment helps in control of primary and secondary infections in patients. e.g. catheterization wound stitching and bandaging in a medical, surgical, maternity or pediatric ward<sup>1</sup>.

The operations of a Central Service department usually consist of the reprocessing, that is cleaning, disinfecting, and sterilizing of reusable medical equipment. Reusable medical equipment, or RME, can consist of any medical equipment from stainless steel surgical instrumentation, to IV pumps and crash carts. do not have direct contact with a patient.

##### **Ideal Sterilization Method**

It should be -Highly efficacious, Rapidly active, Strong penetrability, Materials compatibility, Non-toxic, Organic material resistance, Monitoring capability, Cost-effective articles which is sterilized first be cleaned in a separate decontamination area and inspected for effectiveness, cleanliness, and damage. Pasteurization is the technique for abolishing all living organisms on a product and. There are various systems of purification, and which one is used is dependent on many factors including operational cost, potential hazards to workers, efficacy, time, and composition of the materials being sterilized. Sterilization can also be achieved using Ethylene Oxide (ETO) gas. ETO sterilization takes far longer than steam sterilization and is hazardous to workers, one of the cheapest and easiest methods is vapor sterilization, where instrumentation trays and packages are placed in a chamber which is them filled with steam (usually 250-270 °F), killing all microorganisms. The most common method for sterilizing at low temperatures today is by using hydrogen peroxide plasma, which has near zero risks to workers and cycles take a fraction of the time of ETO sterilization<sup>2</sup>.

Depending on the healthcare facility's policy, there will be either an event related or time-related sterile storage policy. If the policy is time-related, an expiration date is placed on the sterile package, before being supplied to the end-user as a *sterile* product. If along the supply route, the sealed package got damaged or opened by a health worker, it needs to be returned to the CSSD for re-sterilization. If the healthcare facility's policy is event-related, the package is considered sterile until an event occurs to compromise its sterility (e.g. opened, dropped package, high humidity conditions, torn muslin wrap, etc.)

### Planning and Organization of CSSD

The CSSD should be planned and organized with the following objectives in mind-

- To provide sterilized materials from a central department under proper control, so as reduce the incidence of hospital infection.
- To provide maintenance, cleaning, storage, and issue of surgical supplies.
- To provide costly heat sensitive items to highly specialized units such as cardiac catheter laboratory, heart lungs machine catheter\tubing etc.
- To provide essentially needed standardization in conformity to the prescribed standards.
- To provide education to the nursing and paramedical staff.
- To provide quality control measures and to institute research.
- To provide sterilized linin and portable suction apparatus.
- To provide inventory control management system of all the equipments used in O.T.

### Area Requirements

The minimum area requirement per bed is as follows

**Table 1**

|               |      |                   |
|---------------|------|-------------------|
| 75 – 99       | BEDS | 10 SQ.FT. PER BED |
| 100 -149      | BEDS | 9 SQ. FT. PER BED |
| 150 – 199     | BEDS | 8 SQ. FT. PER BED |
| 200 – 249     | BEDS | 8 SQ. FT. PER BED |
| 250 – 299     | BEDS | 7 SQ. FT. PER BED |
| 300 AND ABOVE | BEDS | 7 SQ. FT. PER BED |

### Departments or Basic Division of CSSD

There are four basic work areas of cssd to ensure unidirectional flow and reverse tracking of sterile goods. The air should flow from clean area to positive pressure in the sterile area. Ensure no mixing of dirty, clean and sterilized items takes place.

### Decontamination area

In this area used surgical instruments and other medical devices are decontaminated with cleanings and washing with various methods eg. automatic washer then Inspecting decontaminated items to make sure they are clean, after this

assembling and Organizing clean items and packaging them into appropriate instrument trays and sets

### **Sterilization and storage**

Sterilizing assembled trays of the instrument. Precisely operating and monitoring special sterilization equipment like autoclaves. Keeping detailed records of items that have been cleaned, sterilized, and stored

### **Distribution**

This section has dealt with Unifying sterilized medical supplies. It is ensuring that sterile supplies don't become outdated. It is for transporting sterile supplies where they are compulsory.

### **Layout of CSSD**

The flow of equipment from the receiving counter to dispensing counter should be unidirectional through the various section in the department, ensuring that no contamination of sterile goods.

### **Work Flow Diagram**

Dirty Area→Clean Area→Sterile Area→Issue Area

### **Organization of Work Flow**

Laundered linen, clean goods, and dressings from manufacturers are added to the washed and dried reusable items, which are made into suitable packs for sterilization and issue. It is important to ensure by a careful and logical workflow that clean packs awaiting sterilization can at no time be mistaken with sterile supplies. If this arrangement is not made, mistakes can occur and clean and sterile can get mixed up. Further a proper workplace arrangement, which ensures that everything required is in the right place, in the right quantity, and at the right time, will of itself achieve an economy of labor and reduce running costs.

### **Equipment in CSSD**

- Ultrasonic cleaner – for hollow instruments
- Washer disinfected – for cleaning and disinfection
- Gloves processing unit
- Drying cabinet
- Ethylene oxide sterilization chamber (E T O Sterilizer) – Used for heat sensitive article eg. Plastic and rubber goods, electrical appliances, cardiac catheter etc.
- Sealing machine – to seal the plastic wrapping for gas sterilization.
- Autoclaves
- Compressed air controlled pressure guns
- Needle sharpening machine
- Automist - for fumigation of the sterile area

- Furniture, sink, cupboard,waste unit, folding table, papper bags, pressure sensitive tape bag and box marker, container, chairs etc.

#### **Staffing pattern in CSSD -**

- A Supervisor with training and experience in cssd.
- CSSD technician
- CSSD attendant
- Messengers forward,OT delivery
- Boiler Attendant
- Clerks
- Sweepers.

As a rule of thumb, a CSSD would require one CSSD workers per 30 beds plus one supervisor. A 200 -300 beds hospital would need 10 -15 persons of various categories as given above.

#### **CONCLUSIONS**

The CSSD is a necessity for the hospital with bed strength of 100 or more. It reduces hospital-acquired infection to a great extent. It reduces the additional workload on nursing personnel, so they can give more time to patient care. It can decrease mortality and morbidity and significantly reduce in the cost of expensive antibiotics. It can increase turnover of the patient due to decrease length of stay in the hospital.

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