Study on quality control in central sterile supply department in Damas medical centre, Sharjah

Dissertation submitted to

The IIHMR University, Jaipur

for the partial fulfillment for the award of the degree of

Master of Business Administration (MBA)

in

Hospital and Health Management

by

Alisha Aniruddha Kunte

(IIHMR-U/01/2020-22/1066)

Under the Supervision and Guidance of

Jagajeet Prasad Singh

(Professor)

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DECLARATION

I hereby declare that this dissertation **"Study on quality control in central sterile supply department in Damas medical centre, Sharjah"** is the bonafide record of my original research work. I declare that it has not been submitted to any other university or institution for the award of any degree or diploma. Information derived from the published or unpublished work of others has been duly acknowledged in the text.

(Signature)

Name of Student

Damas Orchid
MEDICAL CENTER

30th June 2022

Ms Alisha Kunte

IIHMR University, Jaipur

INTERNSHIP COMPLETION CERTIFICATE

This is to certify that Ms Alisha Kunte, student of Hospital and Healthcare Management (MBA) IIHMR University, Jaipur, Batch 2020-22, has successfully completed internship at Damas Orchid Medical Center.

The duration of internship was 3 months from 29th March 2022 to 29th June2022

The topic of the project work done is 'Study on quality control in Central Sterile Supply Department in Damas medical Center, Sharjah'.

During the tenure of her internship, she was sincere, hardworking, enthusiastic and a keen learner.

We wish Ms. Alisha Kunte the very best for her future endeavours.

Sincerely,

Dr. Mohammad Baloch
Medical Director

CERTIFICATE

This is to certify that dissertation titled Study on quality control in central sterile supply department in Damas medical centre, Sharjah is a record of the research work undertaken by Alisha Kunte in partial fulfilment of the requirements for the award of the degree of MBA (Hospital and Health Management) from the IIHMR University, Jaipur under my guidance and supervision and his/her approach to the research study has been sincere, scientific, and analytical.

Faculty Guide	School Dean
IIHMR University, Jaipur	IIHMR University, Jaipur
Date:	Date:

ACKNOWLEDGEMENT

On the very outset of this report, I would like to extend my sincere and heartfelt gratitude towards all the respected personages who have helped me in this endeavor. Without their active guidance, help, cooperation, and encouragement, I would not have made headway in the report. It is a privilege to have a wonderful internship in one of the renowned Cooperate Medical Center. The internship opportunity I had with **Damas Medical Center, Sharjah** was a great chance for learning and professional development. I'm appreciative for this chance and for getting an opportunity to meet countless brilliant individuals and experts who directed me through this internship.

I would also like to take this opportunity to express my deepest gratitude and special thanks to the Medical Director, **Dr. Mohammed Baloch,** who despite being extraordinary busy with his duties, took time to hear, guide and keep me on the correct path and allowing me to carry my internship at their esteemed organization and guiding throughout the internship.

I would like to express sincere thanks to **Dr. P.R. Sodani** (President, IIHMR university, Jaipur) for giving me a chance to do this internship. Now, I would like to express my gratitude towards my mentor at IIHMR University, D**r. JP Singh** for his extraordinary cooperation, invaluable guidance, and supervision. This report is the result of his painstaking and generous attitude.

I would also like to express a deep sense of gratitude to the Placement Cell of my esteemed university for guiding me throughout the internship process and for providing time to time internship guidelines.

I perceive this opportunity as a big milestone in my career development. I will strive to use gained skills and knowledge in the best possible way, and will continue to work on the improvements, to attain desired career objectives.

CHAPTER 1:

INTRODUCTION

1.1: Background

It is a known fact that a hospital can't function without clean equipment or linen. The equipment used in surgeries or procedure earlier need to be cleaned and sterilized for re use of them. Central sterile supply department is the unit in the hospital that sterilizes and provides the sterile equipment to the departments of the hospital. It is responsible for the decontamination of used instruments.

The objective of setting up a CSSD is to make reliably sterilized instruments at the needed time and place and for any agreed use and as economically possible in the hospital.

The goal of this study was to observe that the multi-specialty clinic had proper protocols and policies, and was up to the mark with Sharjah Health Authority, and to check for any possible bottlenecks. It was also essential to do a study on this topic as the processing and distribution of supplies, including sterile tools and equipment required in various hospital departments, is the responsibility of a CSSD, an important hospital support service. Bhattacharjee describes "CSSD" as the hospital service that provides sterile supplies to all departments, including ordinary wards, outpatient departments, and specialist units."

The primary goals of the Central Sterile Supply Department are:

1. Provide sterilized materials from a central location where sterilizing practices are carried out under regulated settings, helping to lower the occurrence of hospital infections.
2. To relieve the nursing staff of some of their workload so that they can spend more time with their patients.
3. To prevent the duplication of expensive equipment that might only be occasionally utilized
4. To keep track of the cleaning, disinfection, and sterilization process' effectiveness

<u>Objectives</u>:

The following objectives were kept in mind while conducting the study-

- To establish and maintain standardized procedures for sterilization of different articles used in the hospital.
- To study the standard operating process for sterilization in Central Sterile Supply Department
- To study the quality control mechanism in Central Sterile Supply Department

CHAPTER 2: LITERATURE REVIEW

Sr. No.	AUTHOR	YEAR	TITLE	FINDINGS
1	Poonthamil R, Maheshwar Pratap	2019	"Optimization of Instrumental Workflow in CSSD" at Hospital Sector	The Effective optimization of the CSSD Instrument workflow using lean management tool VSM has eliminated the29% non-value adding time and activities from earlier system. It is evident that the activities reduced from the earlier system (5 activities) which contributing to the value-based system with high efficiency in the workflow optimization of the Instruments at the hospital sector
2	Amrita shriyan & ashvij shriyan	2015	A study on the efficiency of cssd at a health care centre	CSSD at several hospitals have evolved with a technology which has the ability to track instruments from procurement throughout their entire cycle – of assembly, sterilization, storage, selection and its use in operating room, decontamination, back to inspection and assembly. This technology has to be adopted which addresses the needs of the problems plaguing the CSSD in hospitals today.
3	Kwanjit Sangthong , Poonsap Soparat , Wanchai Moongtui , Somwang Danchaivijitr ,	2005	Development of Quality Indicators for Sterilization Practices of the Central Sterile Supply Department	Quality indicators for sterilization in CSSD were searched by literature review and by current situation analysis by 79 infection control nurses (ICNs) and 83 heads of CSSD. Quality indicators were drafted and subsequently validated by 5 experts. The feasibility and applicability of the quality indicators were tested in 37 ICNs and 34 heads of CSSD. The quality indicators were finally refined by a forum of 5 experts and 5 representatives from CSSD. A total of 30 quality indicators were developed. These include 9 indicators for structure, 12 for process and 9 for output of CSSD. The quality indicators were deemed appropriate for the assessment of the quality of CSSD in Thailand.

4	Amel Ahmed, Tahany El-Senousy, Nemattalla Gomaa, Asmaa Abdel Rahman	2017	Quality Improvement in Central Sterile Supply Department: Educational Interventions	The results of this study concluded that implementation of the educational interventions has positive effect on improving the knowledge and practice of the central sterile supply department staff regarding sterilization process, as well as improving the satisfaction of nursing supervisors regarding the quality of work delivered by the central sterile supply department staff. Periodic educational interventions and training should be conducted for central sterilization supply department staff (nurses, technicians and workers) in order to improve and keep them with updated knowledge and practice regarding to medical and surgical equipment sterilization.
5	Gopal Panta, Ann K Richardson, Ian C Shaw, Patricia A Cooper	2018	Compliance of primary and secondary care public hospitals with standard practices for reprocessing and steam sterilization of reusable medical devices in Nepal: findings from nation-wide multicenter clustered audits	For all primary and secondary care hospitals in Nepal, the mean percentage compliance with the standard practices for medical device reprocessing including steam sterilization was 25.9% (95% CI 21.0-30.8%). The lower the level of care provided by the hospitals, the lower was the mean percentage compliance, and the difference in the means across the hospital types was statistically significant ($p < 0.01$). The mean percentage compliance of individual hospitals ranged from 14.7 to 46.0%. The hospitals had better compliance with the practices for cleaning of used devices and transport and storage of sterilized devices compared with the practices for other processes of the medical device reprocessing cycle. i. The primary and secondary care hospitals in Nepal had poor compliance with the standard practices for steam sterilization and reprocessing of medical devices. Interventions to improve compliance of the hospitals are immediately required to

				minimize the risks of person-to-person or environmental transmission of pathogens through inadequately reprocessed medical devices..
6	Mundodan J, Sarala K, & Narendranath V	2019	Achieving Continuous Improvement in CSSD Management through Performance Measurements using User Satisfaction Surveys and Interventions	The objective of the study was to achieve continuous improvement in Central Sterile Supply Department (CSSD) management through performance measurements using user satisfaction surveys and interventions. The overall satisfaction of the respondents with the CSSD services increased from 54% in 2012 to 89% in 2019, which is statistically significant (95% Cl: −0.56 to −0.25) with p-value < 0.001. This exercise helped to build a strong team and create a culture of openness in the CSSD. Improvement measures were data driven and other departments like Radiology and Laundry were motivated to embrace the idea of understanding their user perceptions. This study demonstrates the effectiveness of internal user satisfaction surveys as a valuable tool for continuous quality improvement. This exercise proved beyond doubt that regular monitoring improves quality of services

CHAPTER 3:

METHODOLOGY

Study period: 29th March to 29th June 2022

Study setting: CSSD unit/ department at Damas Orchid Medical Center, Sharjah.

Type of study: Descriptive and observational

Study population:

The primary data will be collected from the staff of the CSSD department and management of selected hospital through structured interview and questionnaire method.

The secondary data will be collected from hospital profiles, websites, magazines, articles

INCLUSION CRITERIA AND EXCLUSION CRITERIA

Management staff, doctors and nursing staff of CSSD & OT having one or more years of experience and patient are being included.

Staff with less than 6 month of experience will be excluded

Study tools: Questionnaire and personal interview

Sampling Method: Convenience sampling.

Sample size: Sample size of the study was 25, out of the total sample 5 samples will be

management staff, and 7 doctors, 10 nursing staff of CSSD & OT and 3 OT helpers.

Mode of Data collection: Observation methods

Type of Data: Quantitative

CHAPTER 4:

RESULTS/ INTERPRETETION

CSSD is a auxiliary department within the hospital, whose role is to make sure a infection free setting within the hospital by providing processed and sterilized articles and equipment as per the necessities of the hospital. It performs its functions within the hospital by receiving, disinfecting, packing, sterilising, storing and activity sterilized instruments, sets and equipment to the hospital as and once required.

Sterilization of instruments and linen is important as a result of the chance of transferring infection from instruments and equipment depends on the presence of micro-organisms, the quantity and virulence of those organizations, form of procedures that's getting to be performed (Invasive or non-invasive), body website wherever the instrument goes to be used (penetrating the membrane or skin tissue or used on intact skin), further because the infection of the previous patient if any mustn't be unfold to future and then so as to forestall and management hospital nonheritable infections further on guarantee a infection free atmosphere is extremely necessary that the instrument, the linen or the instrumentality is sterilized.

In the recent times, there are tremendous changes within the ways in which of sterilization i.e., numerous new technologies further as equipment are developed, earlier solely steam sterilization was used whereas as currently alternative equipment like Periclave, and ETO machine are used for sterilisation.

As well as alongside the advancement in instrumentality there has been growth in work ethics further as practices relating to personal protection apparatus, data relating to medical infections, infection management and internal control and maintenance has increased. Continuous instructional programmes and workshop are given for the CSSD employees further because the nurses and housekeeping employees so as to make sure that normal protocols and practices are followed by all. Quality Manual, Quality Procedures and internal control Records are ready and enforced and distributed among employees.

All in general there has been an overall improvement within the method flow and general operating conditions as a a result the output from CSSD department everywhere on the planet has seen a significant growth.

Objective of CSSD:

The objective of CSSD is to provide sanitized bed linen, bedding, and medical equipment whenever and wherever it is required in a hospital. For any hospital, the operating room, emergency room, and intensive care unit account for the majority of instrument and linen usage. In addition to developing, establish, and maintain policies on cleaning and decontamination as well as sanitization of reusable equipment, contaminated equipment (i.e., mucous or blood), with wrapping techniques, according to the type of disinfection and the conditions needed for the process of disinfection (temperature, humidity, time, etc.), CSSD works in collaboration with the infection control committee, quality control, and the other programmes.

Capacity of CSSD

Since this department deals with the prevention of hospital acquired infections and acts as a barrier in the spread of infections in the hospital, the scope of CSSD is to provide disinfected and packed instruments, linen, and sets to the hospital as and when needed by using sanitization equipment (pre sanitization techniques, autoclaving, ETO machine, etc.).

CSSD's goals include the following:

a) Providing consumer areas with stocked goods and equipment.

b) To encourage better patient care by offering efficient and precise service.

c) To supply tools, basins, sterile linen packs, and other sterile goods.

d) To keep an accurate record of the cleaning, disinfecting, and sterilising procedures' success rates.

g) To make an effort to make the department's provided trays and sets consistent and uncomplicated.

b) To keep a sufficient supply and equipment inventory.

g) To keep an eye on and enforce the controls required to stop cross-infection in accordance with infection control rules.

h) To create and uphold standards for sterile processing and delivery.

I) To operate profitably in order to cut costs.

j) To keep up with changes in the industry and adopt adjustments as necessary to adhere to new regulations and suggested practises.

k) To evaluate present procedures in order to identify areas for service or product quality improvement.

l) To offer consulting services in all facets of sterile processing and distribution to other departments, including in-service education programmes, policy and procedure reviews, and the implementation of new processes.

Responsibility of cssd

A] The CSSD is in charge of 1) receiving), decontamination, disinfection, inspection, packing, sterilisation, assembly, packing, storing, and distributing the goods.

B] To deliver sterile materials as needed to each medical department.

C] To plan and modify the department's organisation and design in accordance with the rules

D] To define and deliver policies and operational standards pertaining to CSSD.

E] To supervise the department's workflow and perform technical maintenance on the equipment to prevent sterilisation failure.

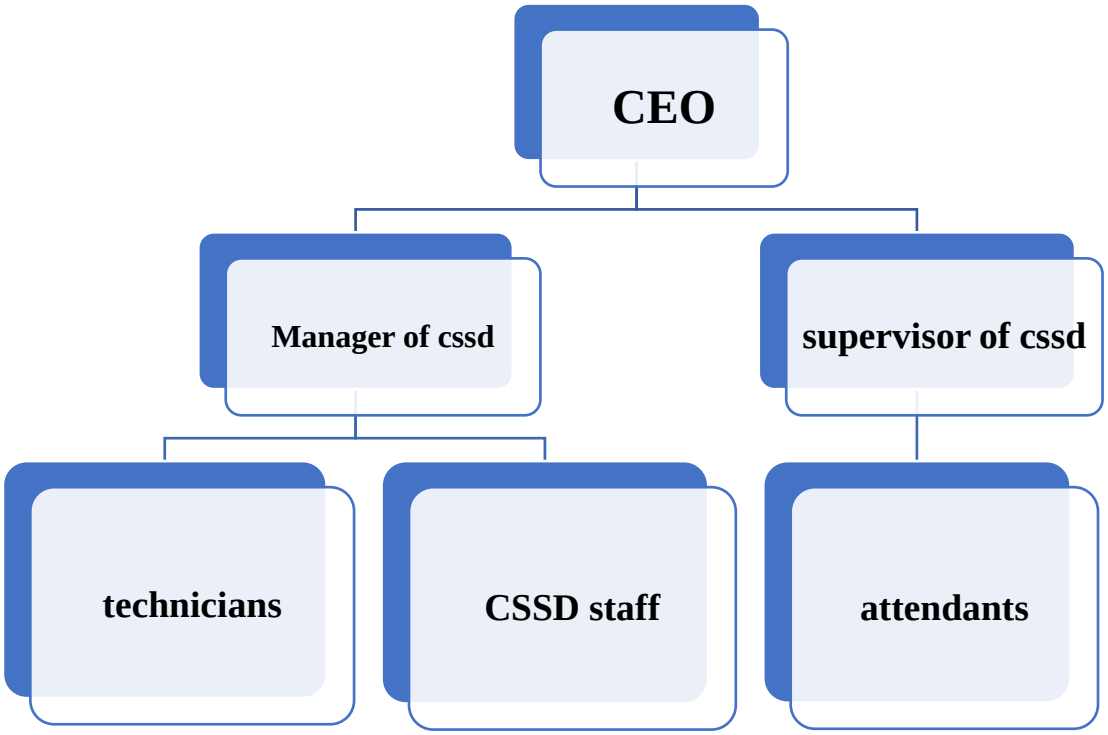
F] Consult with nurses and doctors, who are the products' end users, to pinpoint any gaps and enhance the level of service.

G] To educate employees about the CSSD's procedures, tools, and quality control

H] To participate in and lead workshops on hospital acquired infections, quality control methods, and CSSD protocols

The CSSD manager, the department supervisor, and then the CSSD personnel are in charge of the responsibility. The manager has the power to make any necessary changes in the department as long as he has communicated the issues to higher level management and has requested approval.

DEPARTMENTAL HIERARCHY OF CSSD:



CSSD Staff Responsibilities:

1) CSSD MANAGER: a) He will advise the department on all facets of the department and how the department runs.

b) He is in charge of the overall operation of the CSSD and is expected to manage it in accordance with the policies established by the infection control committee, the organization's goals and objectives, or standard operating procedures.

c) To make sure that the infection control committee's or quality control committee's recommended follow-up is carried out.

d) overseeing, directing, advising, and offering best employment practices to CSSD staff in order to inspire and support them in performing at their highest level.

To conduct an annual evaluation of the CSSD staff f) To guarantee a continuous supply of sterile materials to all hospital departments 24 hours a day g) To develop a budgetary budget for the department.

h) To carry out audits in a timely manner to ensure compliance with standards and to produce reports for the infection control committee in a timely manner.

I) Maintaining exact and accurate records of the equipments and keeping an eye on their upkeep and AMC

j) Maintain an emergency plan for CSSD and carry out routine departmental inspections.

CSSD SUPERVISOR:

a) The supervisor is responsible for overseeing all tasks related to cleaning, assembling, checking, and packing of all items that need to be sterilised in accordance with the established standards.

b) He is in charge of keeping track of all CSSD records and is required to keep a logbook for each piece of equipment as well as an inventory of any spare parts.

c) Ascertain that there is an adequate supply of the materials needed by the CSSD.

d) He is responsible for ensuring that the CSSD's workplace is tidy and secure for its employees.

e) He has to keep an eye on the CSSD's everyday operations and activities.

f) He must see to it that the department receives the sterile supplies on time.

g) He must ensure that all supplies are sanitised to the highest standard. g) He must ensure that there is a steady supply of disposable goods and that broken or non-functional equipment are replaced.

h) He is required to compile monthly input from other departments and put measures in place to raise the level of service.

TECHNICIANS/ASSISTANTS FOR CSSD

a) He should be given all the linen and processing and sanitising equipment.

b) He must use disinfectants to clean and scrub the equipment, then dry it in accordance with approved practises.

c) He must examine any broken or damaged equipment that was received.

d) He must arrange them together in sets and bundle them for additional sterilisation.

e) He is responsible for loading and unloading sterilisers and other equipment.

f) He must distribute the disinfected products under the watchful eye of the CSSD sterilize and preserve them in the sterile storage facility.

g) He is responsible for the department's organisation.

Perform validation and sanitation check tests each day. He must promptly notify the CSSD manager or supervisor of any breakdowns or malfunctions.

There are typically two assistants or clerks working in the department to assist the technicians, give sterile supplies in an emergency, or otherwise receive non-sterile equipment and issue sterile equipment in the operating rooms. There is a dumbwaiter in the receiving area and a dumbwaiter in the issuing area.

The housekeeping crew is also there to assist with receiving goods, putting them in storage, and running errands. They are also responsible for making sure the department is cleaned in accordance with established standards.

CSSD ZONING:

The central sterile supply department is ideally zoned into 3 areas that are physically separated by 2 barriers.

Specifically, the sterile, clean, and dirty zones. These areas are designed to guarantee that sterile supplies flow in a single direction.

Two issuing windows—one specifically for OT supply and the other for wards and other departments—and one receiving window are available.

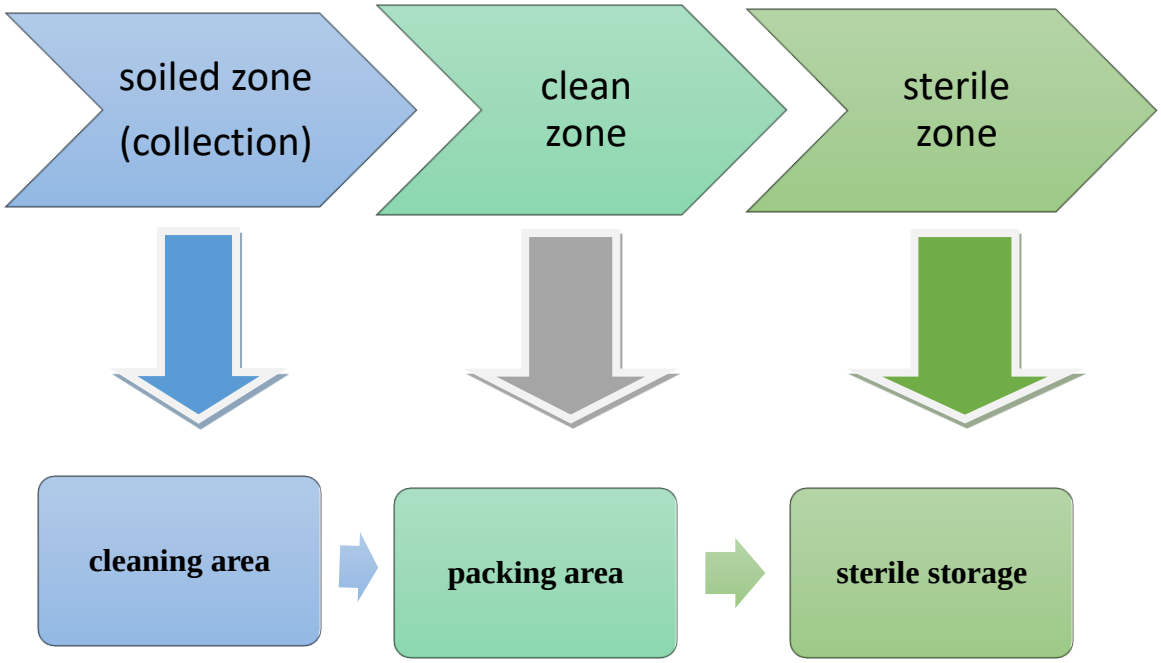
Three colours are used to color-coded the CSSD at Sharjah Medical Centre.

The contaminated area is blue in colour.

Green denotes the clean area.

Pink dominates the antiseptic space.

The zones and the functions done in these zones:



All contaminated and unclean materials from all departments are brought to the soiled zone, where they are washed and cleaned. It includes a receiving space, a washing and disinfection facility, and more.

All clean materials are stored in the clean zone, where they are also packaged, made into sets, and wrapped in preparation for sterilisation.

A) Clean storage B) Folding tables for linen C) Packing tables for instruments D) Workbenches

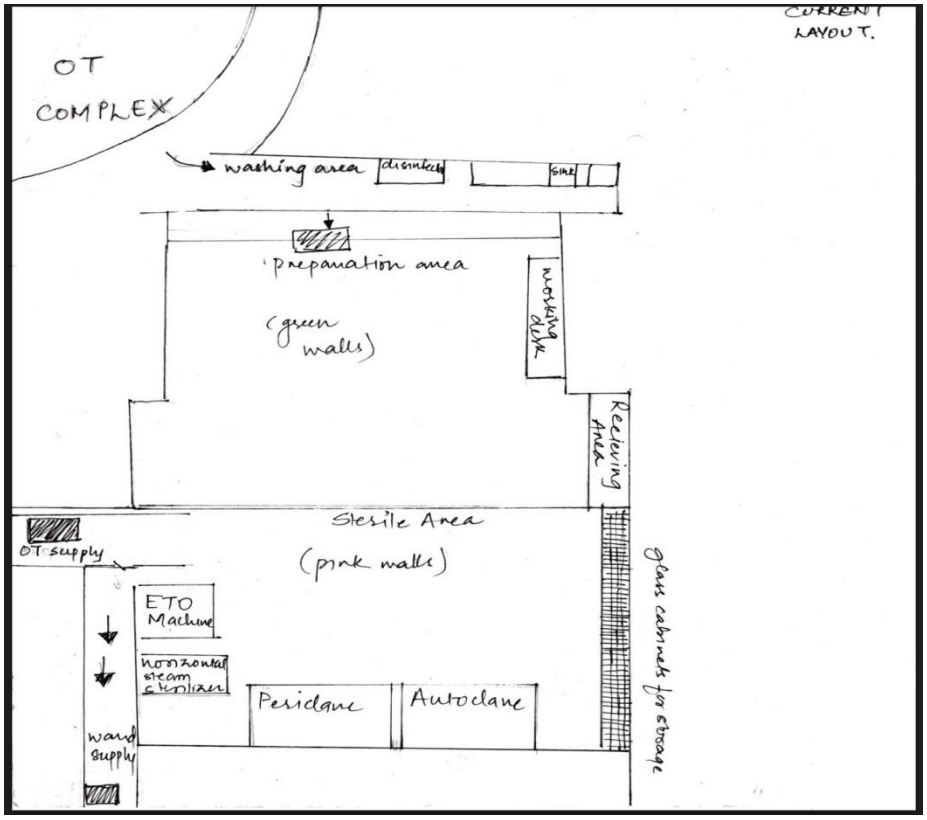
All clean supplies are sterilised in the sterile zone, which also stores and distributes them.

A) Sterilizers B) Sterile stores C) Issue area

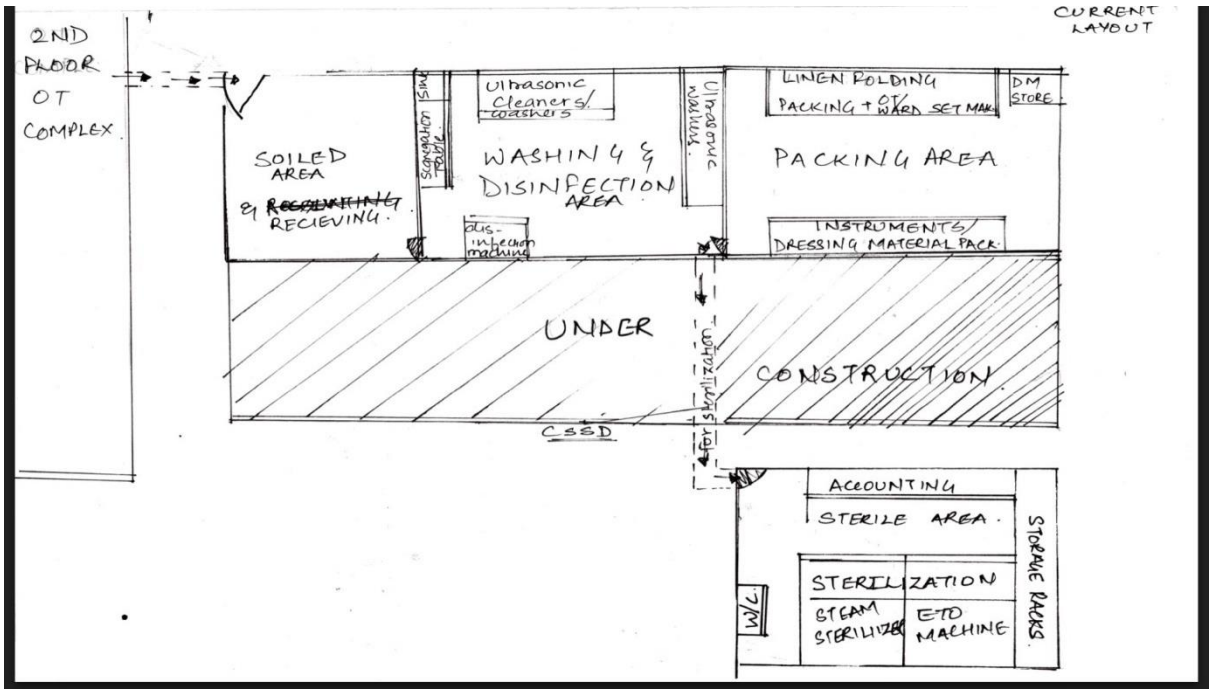
CSSD LAYOUT: The CSSD is designed to provide a unidirectional flow of supplies from the dirty area to the sterile region, to control the temperature and humidity in the sterile areas that house steam sterilizers, and to maintain a positive airflow in from the clean to the dirty areas.

The following sections make up the CSSD department of Damas Medical Center, a hospital in Sharjah:

A washing and decontamination space, a packing area for linens, a packing area for instruments, a room for gas or steam sterilizing, a room for sterile storage, a room for clean storage, and a room for the executive or manager.

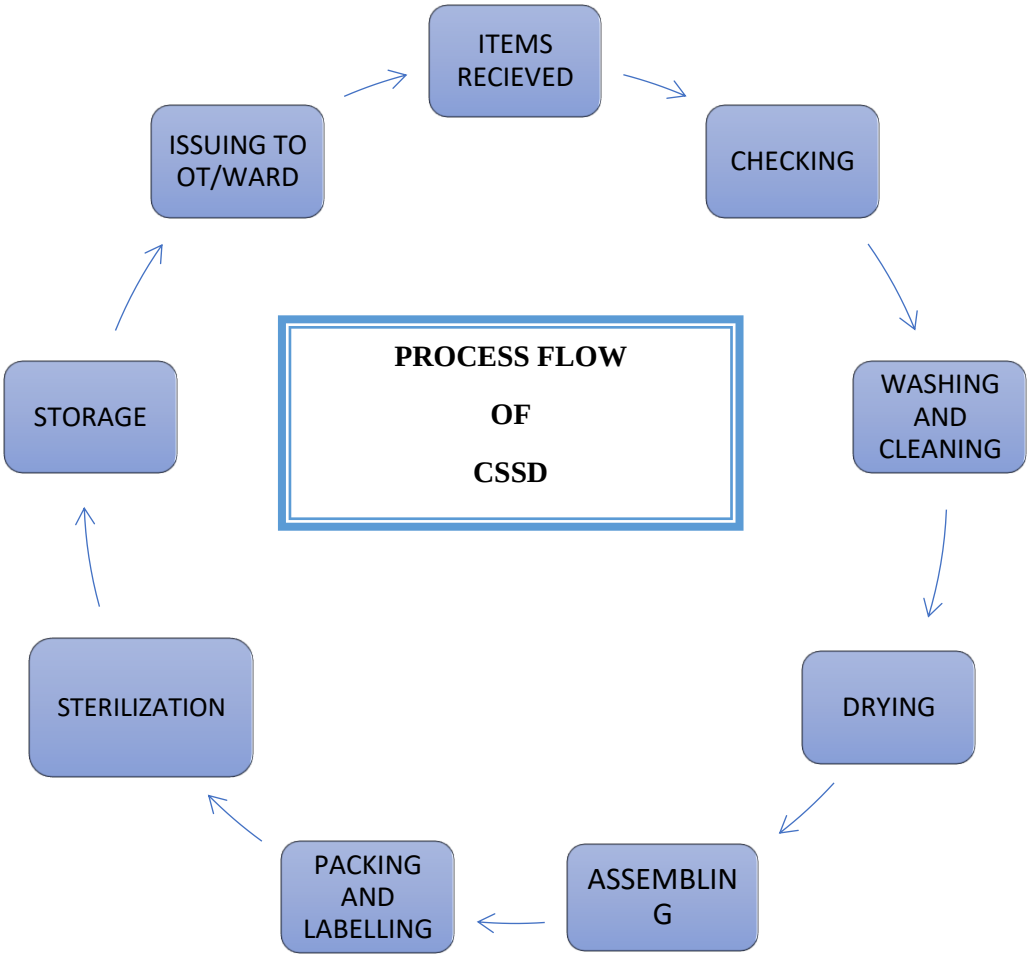


THE ABOVE LAYOUT IS NEW LAYOUT



THIS IS THE LAYOUT OF CSSD BEFORE RENOVATION.

PROCESS FLOW OF CSSD:



Process flow of CSSD

It is a constant cycle that begins with the distribution of sterile goods and concludes with the receipt of contaminated supplies, therefore the CSSD operates around-the-clock to make sure the hospital has a supply of sterile materials available at all times.

Commonly, a unidirectional flow is maintained to keep sterile and non-sterile supplies apart.

The steps of the procedure are as follows:

Rinsing: Articles must be rinsed immediately at the source, by a trained staff member, such as a nurse or cleaning staff, in the washroom adjacent to the patient's room or outside the operating room.

Cleaning: Before being disinfected and sterilised, all reusable medical equipment and linen are carefully cleaned. Instruments are cleaned at the source, while linen is washed in the laundry.
Drying: All items should be dried correctly; if an instrument is damp or partially wet, there is a chance that it won't be sterilised effectively and could grow bacteria or become infected. After a second CSSD wash, the instrument is dried.

Inspection and assembly: Each item is examined for functional flaws and breaks before being properly put together into sets or packs.

Packaging: Items should be adequately packed in polythene bags, paper envelopes, or other porous materials.

Labelling: Each pack has a label on the packing cover that lists the contents, the issue date, the expiration date, the signature, and the department's stamp.

Sterilization involves loading packed and labelled sets or single instruments into sterilisers, then removing them once the sterilisation cycle is through.

Storage: Sterilized packs are kept in sterile storage until needed by the departments, when they are distributed.

Documentation: A record or register that includes the date, time, duration, controls, and their outcomes is kept, and it also aids in yearly maintenance.

Storage space: A separate sterile storage area is kept for sterile materials as well as a non-sterile storage area.

Distribution: For further processing, clean and filthy supplies are separated and sorted.

EQUIPMENTS USED IN CSSD OF DAMAS ORCHID MEDICAL CENTER, SHARJAH:

The various tools used in CSSD (Washers, cleaners, sterilisers, and autoclaves) are given below along with what they do.

1. THE WASHING AREA
a) Hand washing

All instruments should ideally be mechanically cleaned using ultrasonic washers, although hand cleaning is advised for fragile or complex instruments that have been used and polluted, or because of the usage of lenses or just for non-immersible equipment.
Prior to mechanical cleaning, manual cleaning is also carried out to remove stains and grime with the use of a disinfectant.
In the metal sinks, the instruments are typically brushed under lukewarm or gently warm water.
Additionally, a jet spray tap is deployed.
b) Machine cleaning
The CSSD uses mechanical cleaning tools including automated disinfectors and ultrasonic washers. The ultrasonic washers include cleaning cycles that include rinsing and disinfection.
Ultrasonic cleaning is desirable because it thoroughly cleans medical equipment and is particularly effective at eliminating grime and blood that has become lodged in joints and crevices.
High frequency sound waves that vibrate the water assist in cleaning.
Every time a shift changes, a disinfectant solution (a protein enzyme dissolver) needs to be added to the water.
It usually takes five to ten minutes to clean. It is modifiable.
The water supplied would be between 200 and 400 degrees.
The ultrasonic cleaner vibrates approximately 20000 and 40000 times per minute.

c) Washer disinfector: This gadget is used to clean and disinfect anaesthesia tubing, kidney trays, and instrument sets.
Before use, instruments and sets are decontaminated.

2) PREPARATION AREA: There are workbenches and linen packing desks in the preparation area, although no instruments are present.
Workbenches with stainless steel tops in option A; linen foldable tables in option B
c) Tables for storing dressing supplies

3) THE STERILIZATION AREA
For emergency scenarios, we have three high temperature sterilisers, one ETO machine, and one flash steriliser in the operating theatre complex on the second level. There are two methods of heat sterilisation: wet heat and dry heat, albeit the latter is extremely rare, particularly in India. Additionally, moisture is more efficient than dry heat because it may kill microorganisms at lower temperatures because it contains saturated steam.

a) Sun Sterifaab makes a horizontal steam steriliser that relies on a vacuum air source, vacuum pump, or ejector to function. It can hold 185 litres at 15 PSI for 15 minutes at 1210°C.
b) Combination loads are often placed in a bulk rectangular autoclave. Instruments and linen are both included in combination loads. Here, the sterilisation process is carried out for the longest possible time to guarantee the sterilisation of both wrapped and unwrapped objects. The top shelves are used to store linens, and the bottom racks are used to store instruments.
c) The Periclave by Siemens is a desktop autoclave with two functions: one for sterilising and one for auxiliary drying. It employs steam as the sterilising agent and has three automated programmes depending on the materials. For Periclave, the humidity must be between 80 and 50 percent for temperatures up to 310°C.
d) Flash autoclave.
e) ETO is used for sterilizing Items that cannot be autoclaved or that cannot be treated are included in this procedure of sterilisation. It comprises products containing lumen, such as ambu bags, oxygen masks, and other goods. Dichlorofluoromethane and ethylene oxide make up the majority of the sterilant combination. The chamber's temperature is 1300C, its humidity is 45–75%, the time is between 2 and 4 hours, and the pressure employed is between 8 and 10 PSI.

Name of machine	Time per cycle/temperature	Capacity	Mfg. Company
Ultrasonic washer	**5mins at 90'**		**Trans-o-sonic**
Steris auto disinfector	**27 min per cycle**		**Steris**
Eto machine	**37 degrees**		**Steris**
Autoclave	**15 mins at 121 degrees or 3 mins at 134 degrees.**	**498 litres**	**Sun sterifaab**
Periclave			**Siemens**
Horizontal steam sterilizer	**134 to 137 degrees for 3-5 mins**	**248 litres**	**Sun sterifaab**

List equipment used in cssd of Damas medical centre

WASHING AREA

- Ultrasonic washer: 2 units of trans-o-nic washers
- Automatic washer and disinfector: 1 unit by steris
- High pressure water jets
- Soaking sinks

PREPARATION AREA

- Work benches with stainless steel tops
- Linen folding and dressing material packing table

STERILE AREA

- Horizontal steam sterilizer by sun sterifaab
- Periclave by Siemens
- Autoclave sterilizer by sun sterifaab
- Ethylene dioxide sterilizer
- Storage cupboards and racks

PACKING AND LABELLING OF CLEAN SUPPLIES:

PACKING:

Everything that needs to be packed and sterile on the same day must be wrapped in one layer of fabric and one layer of disposable sterilisation wrapper (crepe paper).

The fabric must be thoroughly checked for holes and tears before and after each use, and it must be washed after each usage.

Use porous lids when placing the items in metal containers for autoclaving so that the steam can enter the entire container.

Dressing supplies are packaged in paper envelopes and suture materials are packaged in paper envelopes, sorted by dressing material size.

Surgical tools and blades are sterilised separately or kept in instrument sets rather than inside linen packs or gown sets.

Instruments are instantly cleaned after usage.

To prevent contagious cuts and injuries, gloves must be worn when handling instruments and sets as well as during packing.

Each instrument is packaged in sets or assembled in groups of related instruments before being assembled into sets.

Since rubber latex tools and supplies are typically disposable, they are not sanitised.

The supplies are packaged in accordance with the contents, and the manner a tool or medical dressing is wrapped in paper has a shelf life of storage following sterilisation of these packs.

For steam sterilisation, two double-thickness wraps of muslin must be utilised.

Paper: For steam sterilisation, double wrapping in two layers is advised.

Medical-grade paper must be sealed without folding.

This table provides the post-sterilization shelf life for all the packaged supplies.

Type of wrapper	**Expiry**
Linen (double packing)	7 days
Paper envelopes	1 month
Poly pouch (single packing)	4 months in steam
	2 years in ETO
Poly pouch (double packing)	8 Months in steam
	4 years in ETO
Double polythene bags	5 years
Crepe paper	3 months

If a linen wrapper is torn or broken, it must be relaundered even if it hasn't been used, and a dust cover must be used to preserve the packs.

LABELLING

The goods are first packed into paper or polythene bags, which are then labelled appropriately, stamped, and signed. On the date when the packets were sterilised, only the date column and the CSSD supervisor's signature are required.

Anywhere it applies, the expiration date must be written on the outside of the packaging or affixed to them with a label that describes the event.

A chemical indication tape must be placed on top of all trays and sets.

Transport, Handling, and Storage

All sterile products and supplies should remain intact due to the environmental conditions in the locations specified for storage and distribution.

All sterile items should be handled, stored, cleaned, and inspected by a person who has received training in that area.

Sterile items must be kept 10" above the ground, 8” off the ceiling, and 2” away from exterior walls.

After a comprehensive inspection, the out-of-date supplies must be taken out of the stock and either discarded or re-sterilized.

Food and drink must not be permitted in the sterile or even spotless store area.

The temperature should always be kept between 5 and 300.

It must have effective airflow and sufficient ventilation.

Sterile materials will be delivered into buildings off-site on covered carts, and within the facility, only carts will be used for transport.

RECALL APPROACH

The batch number is used to identify each load and the items that were sterilised in it.

When an indicator yields an undesirable result, one of the following must happen: 1. The sterilization in question must be halted and not utilised.

2. A biomedical engineer will receive notification.

3. Based on the load and batch number, any products that have left the department will be tracked and the sterilisation log will be examined.

4. Items supplied will be returned.

5. The machine can be used once more for operation following repairs and testing.

ROUTINE AND PRECAUTIONARY MAINTENANCE:

1. A day is set out every month, at the conclusion of each month, for the routine and preventative maintenance of all sterilisers.

2. A gentle soap and a brush are required to clean the sterilizer's outlet screen or pin trap, which is found at the bottom of the steriliser.

3. The sterilisers' chambers must be cleaned each day with a soft cloth or, for larger sterilisers, a long-handled mop.

4. Every day, all door gaskets will be wiped with a lint-free cloth, inspected for flaws, and any that are found will be replaced.

5. The sterilizer's interior needs to be cleansed with a mild detergent and thoroughly rinsed with tap water.

6. A log containing details of each CSSD cleaning activity is required.

7. Preventive maintenance must be carried out by qualified repair staff.

8. A logbook must keep a database of all repairs and maintenance performed on the equipment.

9. Before sterilization equipment is put back into service after any significant repairs or adjustments, a chart graph result must be acquired.

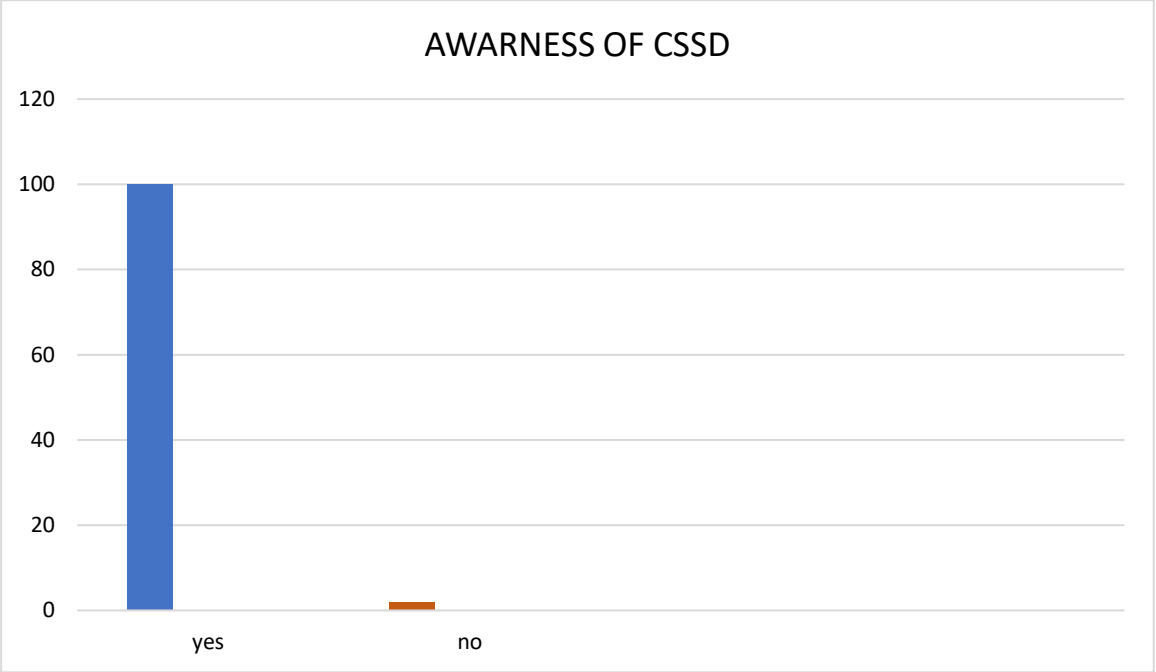
10. The infection control committee must be notified if there are any questions about the sterility of the goods sent through the autoclave.

CHAPTER 6:

DISCUSSION(SUGGESTIONS) AND RECOMMENDATIONS

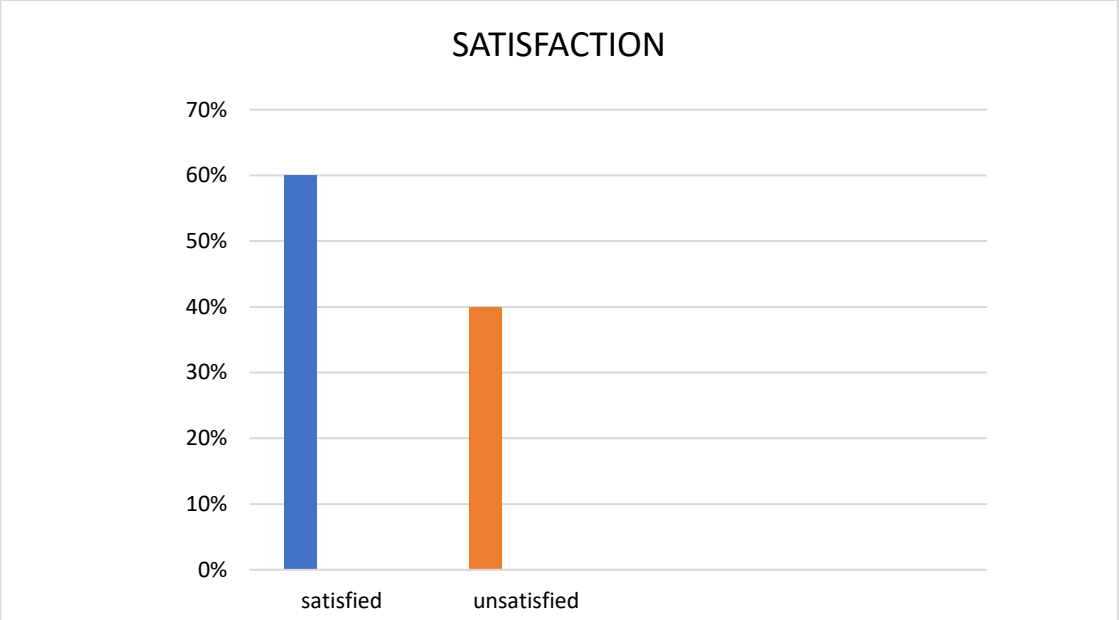
DATA ANALYSIS AND INTERPRETATION

Figure.6.1 Response regarding the awareness about hospital central sterile supply department



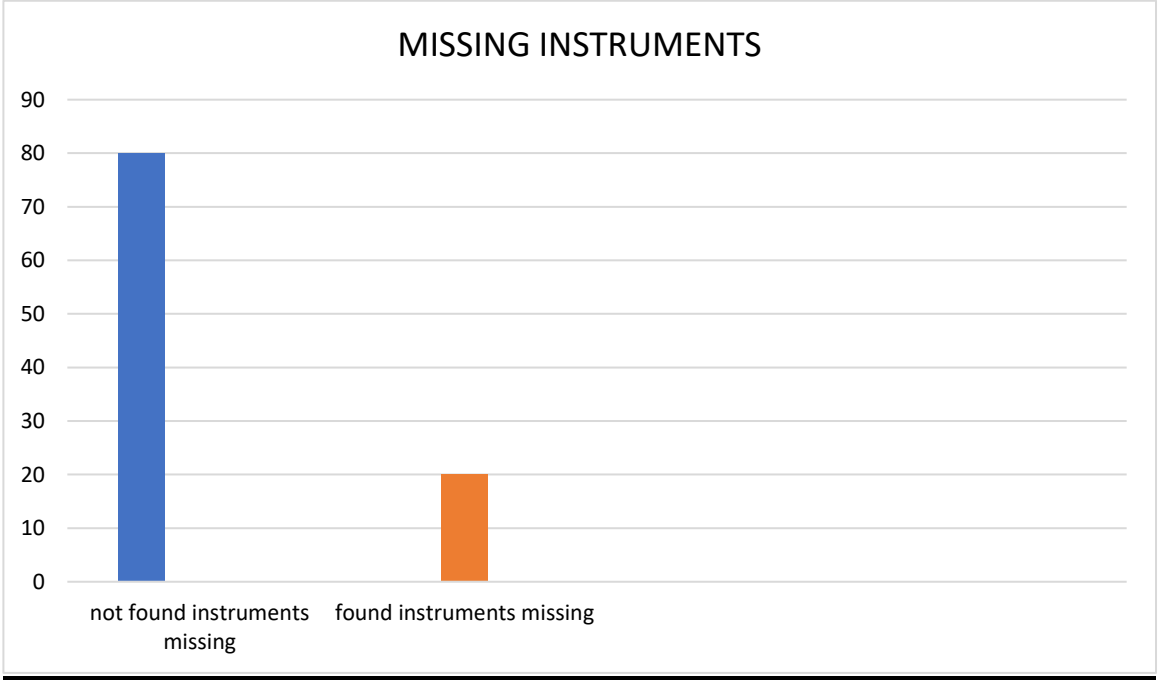
Interference: The above table and figure shows that 100% of the management staffs are aware about CSSD Department in Damas Orchid Medical Center, Sharjah.

Figure -6.2 Responses regarding the satisfaction with the present work efficiency of the staff of CSSD department



Inference: The above table and figure shows that 60% of staffs are satisfied with the present work efficiency of the staff of CSSD department, 40% of staffs are not satisfied in Damas Orchid Medical Center.

Figure -6.3 Responses regarding the cases of missing instruments in CSSD



Inference:

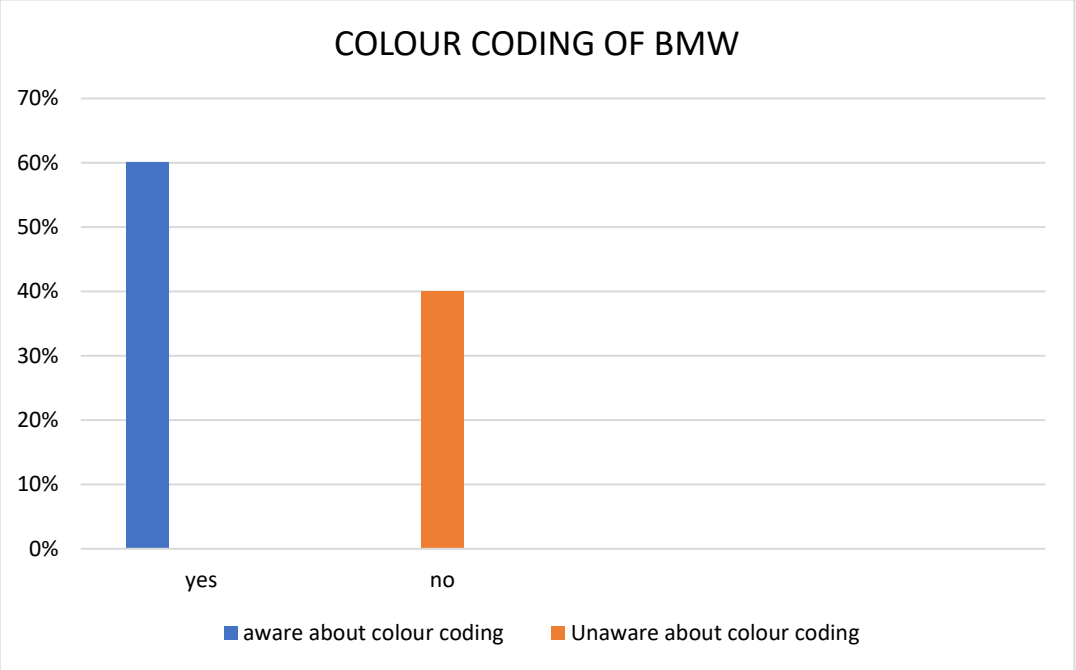
The above table and figure shows that, 80% of staff responded that, there are are none of missing case instruments where as 20% responded that there are several cases of missing of instruments missing cases in CSSD.

Figure -6.4 Responses regarding the Inspection of CSSD department

Inference:

The above table and figure shows that, only 20% of management staffs conduct an inspection of CSSD and 80% of staffs are not conduct any inspection to the department in Damas Orchid Medical Center

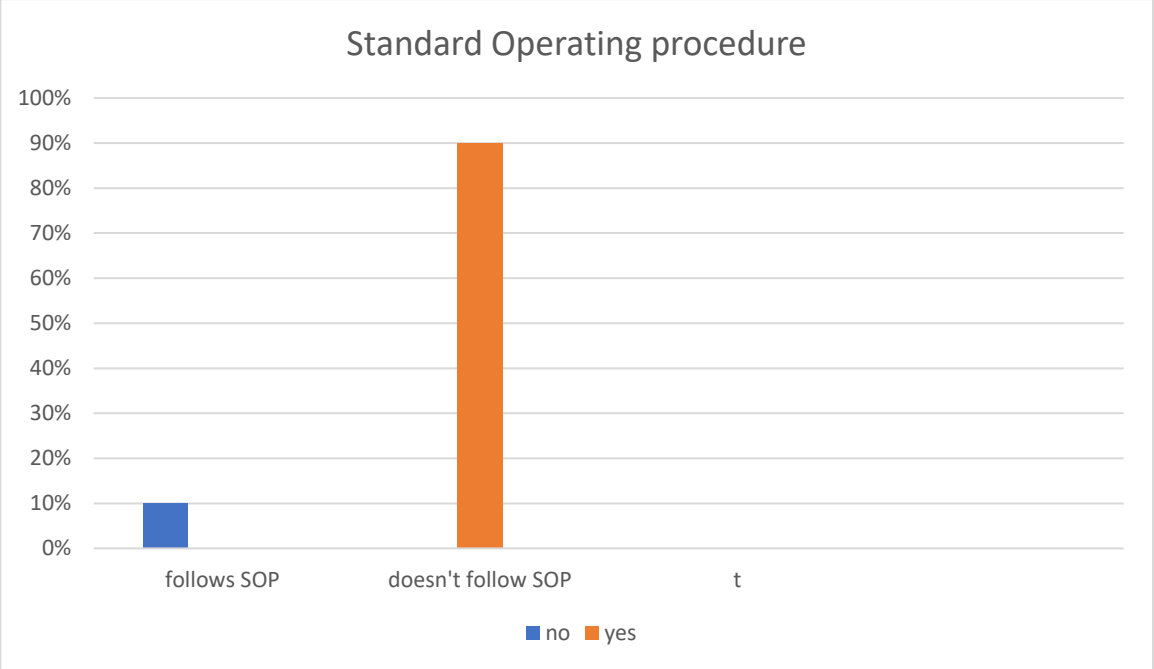
Figure -6.6 Responses regarding the employees following the color coding and Zones.



Inference:

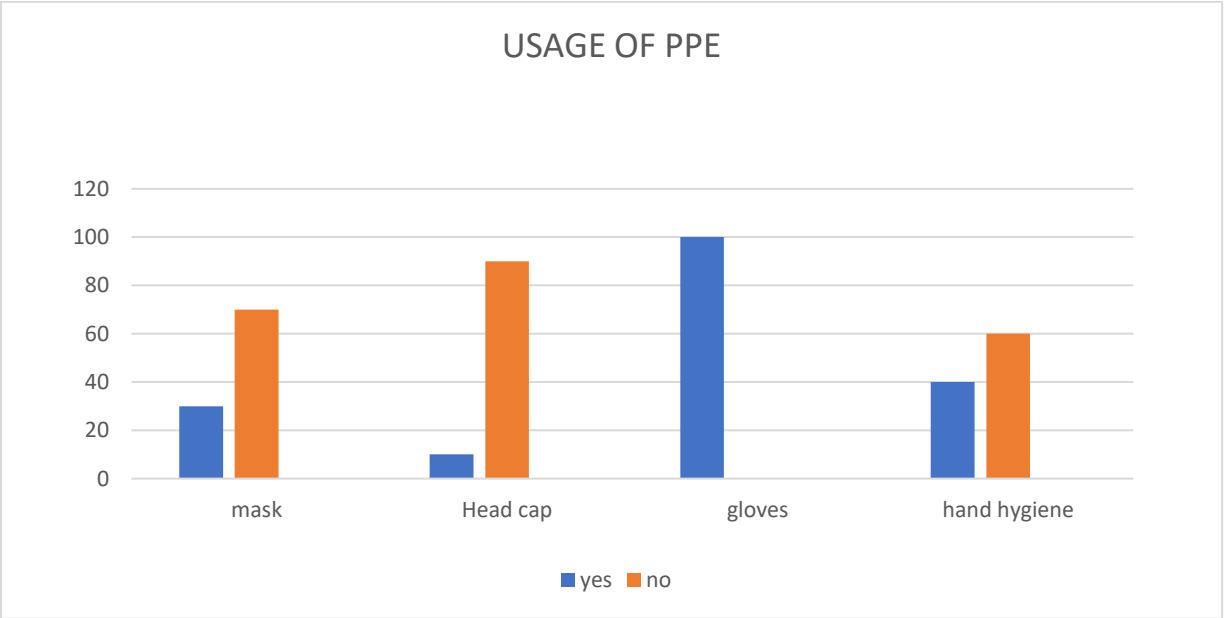
The above table and figure shows that, 60% of employees have responded that they are following the colour coding and Zoning. 40% of staff are responded that they are not following the colour coding and Zoning.

Figure -6.9 Responses regarding the documentation maintained in hospital for CSSD standard



Inference: The above table and figure 90% result shows that, Damas orchid medical centre has very limited documents of standard operating procedure for CSSD.

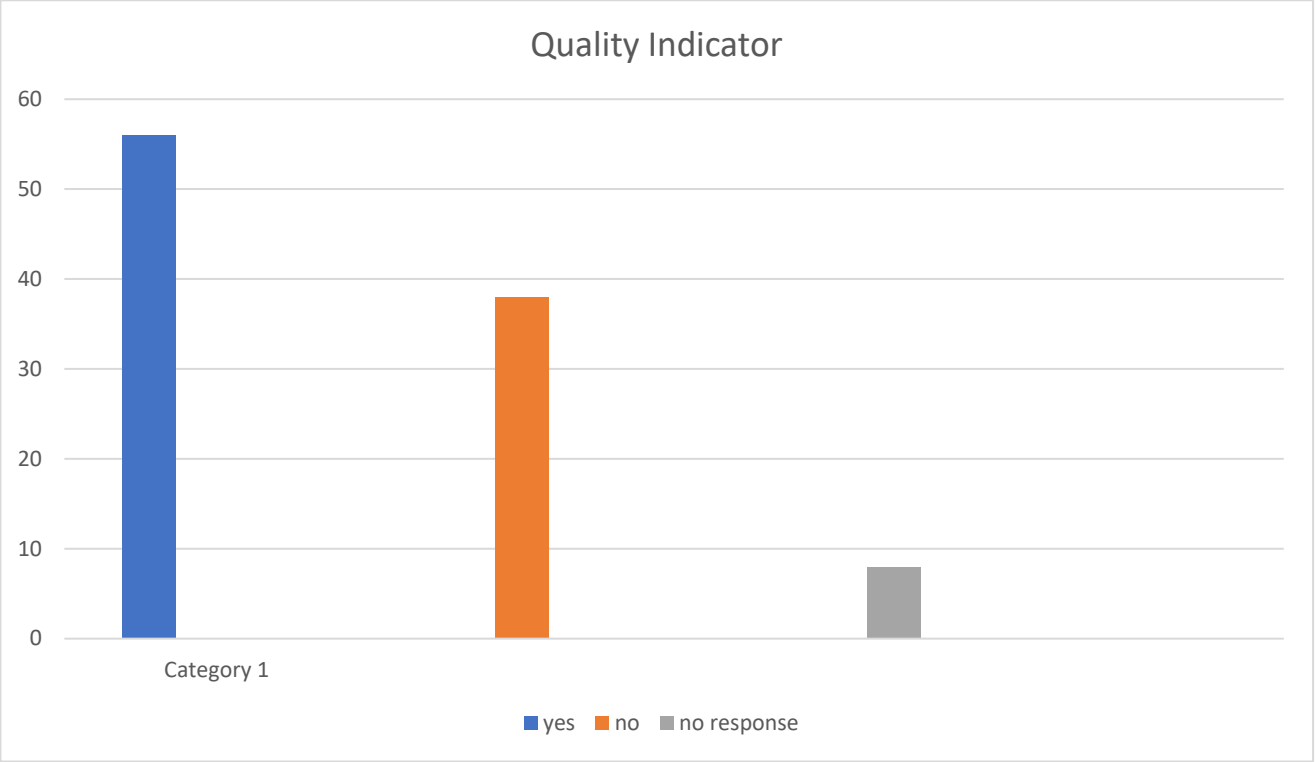
Figure -6.12 Responses regarding the staff using personal safety measures while performing the duty



Inference:

The above table and figure 100% result shows that, entire staff uses the gloves while performing the duty. Only 20% of staffs use Mask and 10% of staffs use Head cap while performing the duty at Damas medical center. And 30% of Hand-hygiene procedures are followed in CSSD of the Damas medical center

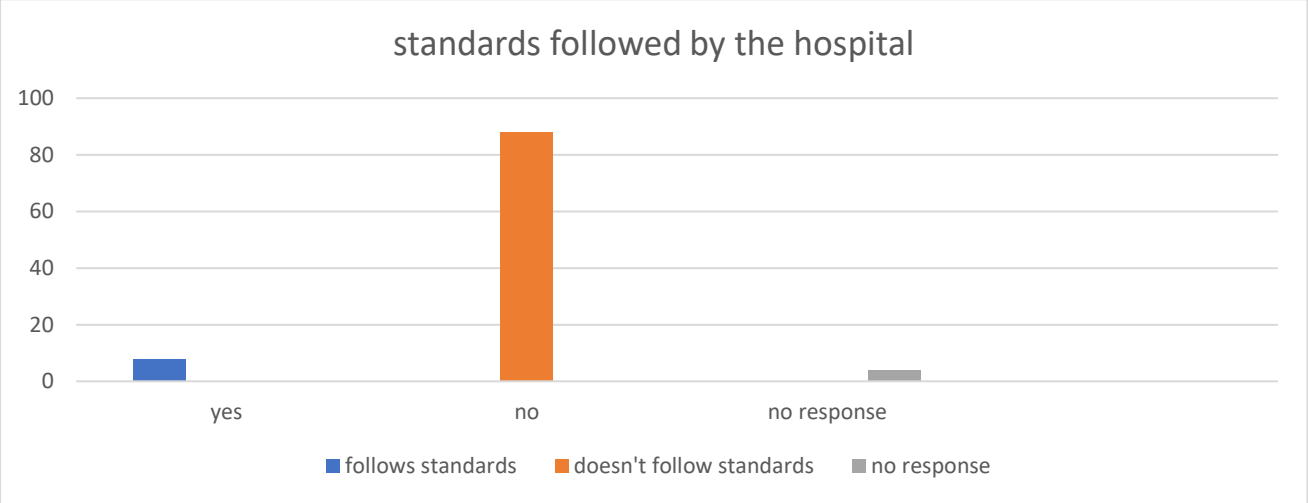
Figure -6.15 Responses regarding staff follow the quality indicator in CSSD department



Inference:

The above table and figure shows that, 56% of staffs responded that, they follow the quality indicator in CSSD, 38% of staffs responded that, they doesn't follow the quality indicator in CSSD, and 8% of staffs have not responded in Damas medical center.

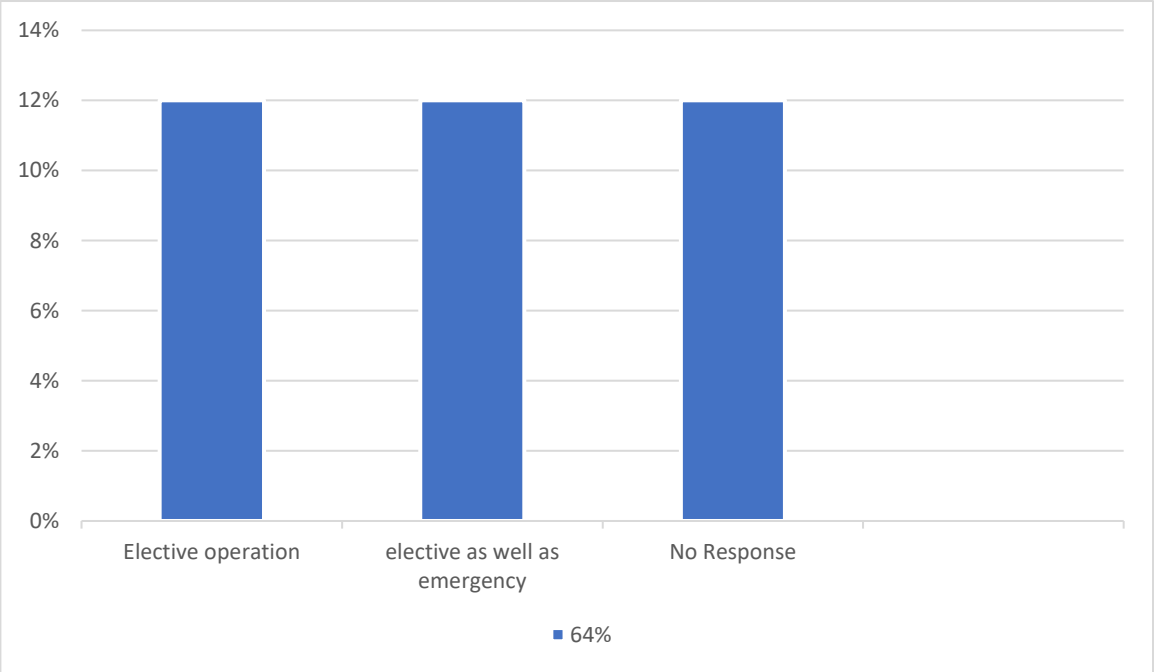
Figure -6.16 Responses regarding standards followed by the hospital



Inference:

The above table and figure shows that, 8% of staffs responded that, they follow the standards in CSSD, 88% of staffs responded that, they doesn't follow the standards in CSSD, and 4% of staff have not responded in Damas Medical Centre.

Figure -6.17 Responses regarding problem noticed by staff during work hours.



Inference:

The above table and figure shows that, Damas Orchid Medical Center 64% staffs responded that emergency time they noticed the problems like missing, damaged instruments etc. 12% staffs responded that during the elective operation/procedure they noticed the problems. 12% staffs responded that during both emergency and elective operations they noticed the problems. And 12% staffs have not responded in Damas Orchid Medical Center.

CHAPTER 6:

CONCLUSION

In order to increase the effectiveness of CSSD approaches, it is advised that various alterations be taken into consideration based on the study's findings and analysis.

RECOMMENDATIONS FOR DAMAS ORCHID MEDICAL CENTER

1. When handling infectious items, all healthcare professionals handling non-sterile instruments should use the relevant safety measures and general precautions.

2. Training programmes need to be strengthened to ensure that all healthcare workers have a solid understanding of and practise infection control.

3. The management can offer established policies and procedures for the CSSD's smooth operation.

4. For Damas Medical Center, new CSSD planning and designing with a minimum of three CSSD divisions is required to offer an efficient functioning.

5.For documentation purposes, CSSD should keep thorough records of cleaning, disinfection, and sterilisation as well as all indicator results, etc.

6. The staff of the central sterilisation supply department (nurses, technicians, and labourers) should receive regular educational interventions and training in order to maintain and develop their knowledge and skills in the sterilisation of medical and surgical equipment.

7. CSSD must have fire safety equipment, such as a fire extinguisher and a smoke detector.

8. During the sterilisation process, indicators such as mechanical, chemical, and biological should be used.

9. For CSSD to operate efficiently, at least 1 CSSD technician should be hired.

10. The way that CSSD currently operates needs to be changed; functions including receiving, cleaning, packing & labelling, sterilising, storing, and distribution should all happen at once.

11. The process must be fixed, and advanced technology must be used to identify the process in accordance with the planning and design that are built into the computer system.

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