

A Study on Efficiency of CSSD services (Study referring to LLH Hospital, Abu Dhabi)



HOSPITAL BACKGROUND



HIGHLIGHTS

- 24/7 Emergency Services
- 24/7 Ambulance Services
- 24/7 Pharmacy
- 24/7 GP Consultation
- Modular Operation Theatre
- State-of-the-art Diagnostic Centre
- Special Baby Care Unit
- ICU
- LDRP
- In-patient Services
- Day Care Services
- Home Nursing Services
- Free Valet Parking



FACILITIES

- Open MRI
- 64 Sliced CT Scan
- Digital X-Ray
- Panoramic X-Ray
- Cephalometry
- Ultra Sound Scan
- Fluoroscopy
- Stress ECG
- Echo Color Doppler
- EEG, ENMG & EP
- Audiogram
- Spirometry
- Gastroscopy
- Lithotripsy



SUPER SPECIALTIES

- Cardiology
- Endocrinology
- Gastroenterology
- Urology
- Neurology
- Rheumatology
- Plastic Surgery



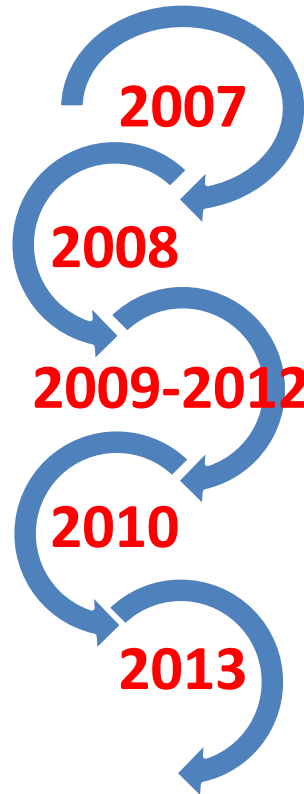
SPECIALITIES

- General Medicine
- General Surgery
- Gynecology & Obstetrics
- Pediatrics
- Orthopedics
- ENT
- Ophthalmology
- Dermatology
- Respiratory Medicine
- Dentistry
- Anesthesia
- Radiology
- Laboratory Medicine
- Physical & Rehabilitative Medicine

Achievements and Awards

- The Australian Council for Healthcare Standards Certification

- JCI Accreditation & Reaccreditation
- Sheikh Khalifa Excellence Award
- European Quality Award



- Daman Quality Award
- Awarded by the Minister of Health for our contributions to Health Education in the community

Excellence in Patient Safety at Arab Health Awards

RESEARCH PROBLEM BACKGROUND



- ❖ Adequate disinfection of the environment and provision of properly sterilized materials for all diagnostic and treatment procedures is a necessity.
- ❖ Sterilization of instruments and consumables is more effective when carried out in a separate unit, the central sterile supply department (CSSD) is an integrated place in hospitals and other health care facilities that performs sterilization and other actions on medical devices, equipment and consumables; for subsequent use by health workers in the operating theatre of the hospital and also for other aseptic procedures,

PROBLEM IDENTIFICATION

COMMON ISSUES

- High Demand Of OT .
- missing instrument and trays,
- Infection control Related issues
- lack of training, monitoring and reporting,
- Lack of error detection mechanisms .

DIRECT IMPACTS

- Rising costs
- Increasing infection risks
- Delay procedures
- Decrease productivity

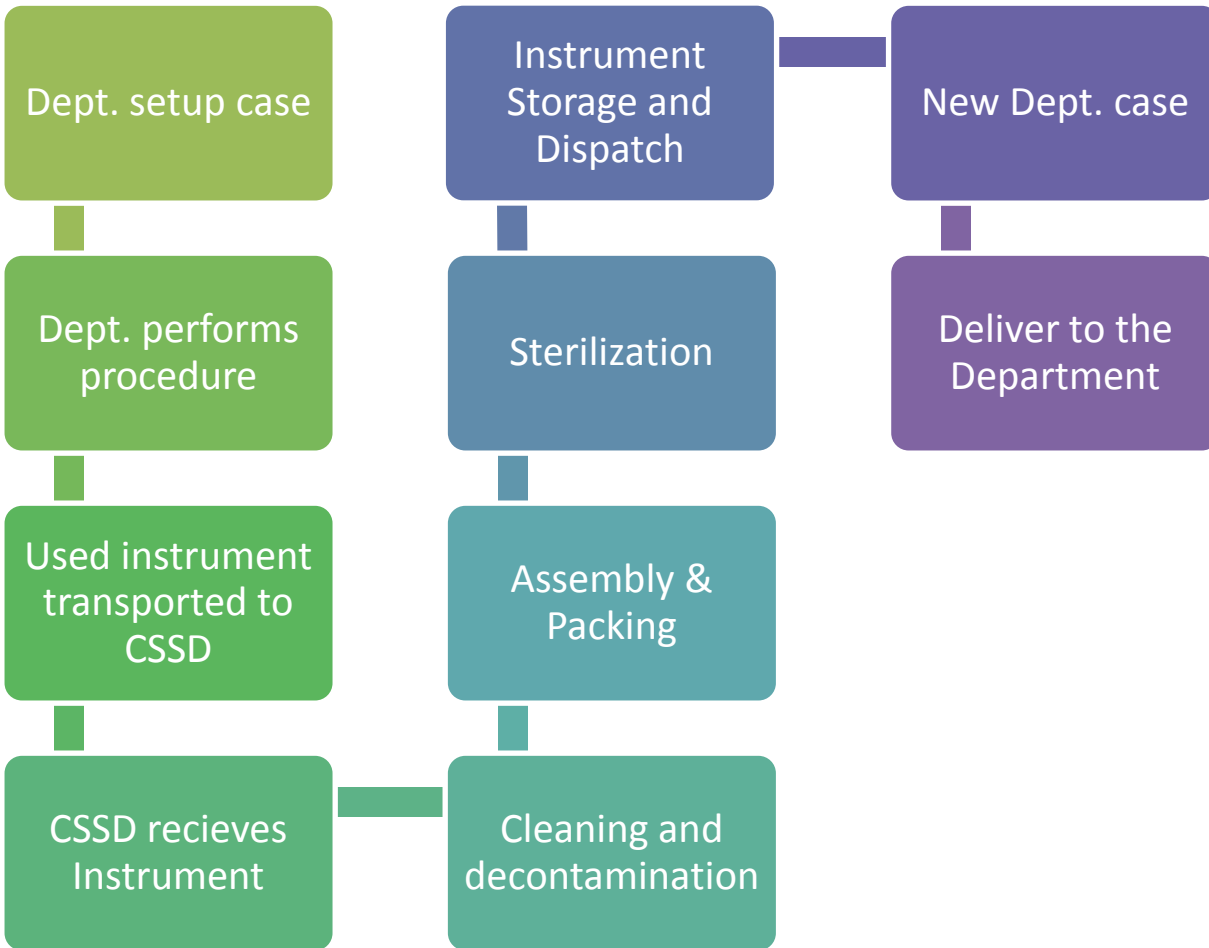
INDIRECT IMPACTS

- Man power demand increases
- Increase training Demand
- Underutilization of CSSD
- Impact of OT Utilization

CSSD DEPARTMENT BACKGROUND



CSSD FLOW CHART



Bowie Dick test



Autoclave Tape



Biological Indicator



CSSD Receiving area



Instrument Assembly



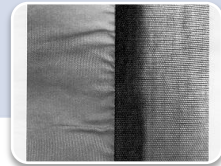
Decontamination area



Washer Disinfector



Ultrasonic Cleaner



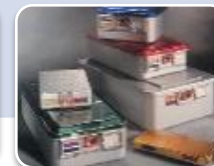
Textile



Nonwoven



Pouch



Rigid

Types of packing



Sealing Machine



Sterilizer



Plasma Sterilizer

RESEARCH SCOPE & OBJECTIVE



RESEARCH OBJECTIVE

1. To measure customer satisfaction on CSSD services and operation (CSSD staff feedback, CSSD services end user feedback)
2. Design the process map with main outputs of process and success indicators.
3. To examine and measure efficiency of the entire process.
4. To give recommendation to LLH hospital management on the areas for process improvement.

SCOPE OF STUDY

Expected Outcomes

To understand what **customer expects** and what is been delivered. Through this **survey** identify the factors/problems affecting operation of CSSD

To understand the **flow diagram of the CSSD** operation and determine non value added steps and eliminate them.

Measure efficiency of sterilization from the data collected from the user. Also, **determine steps to reduce defects** and other contributing factors which affect process.

Identify **types of waste** and take measures to reduce them.

Make **necessary comments to improve process**.

Scope of the study is limited to LLH Hospital

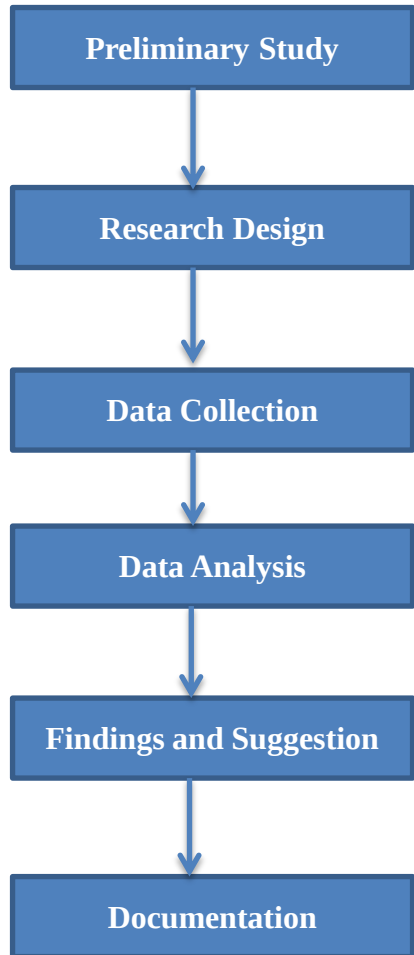
Sample selection is done selectively because each process is time consuming.

The study demands data over longer period (i.e. More than 6 months) for effective analysis.

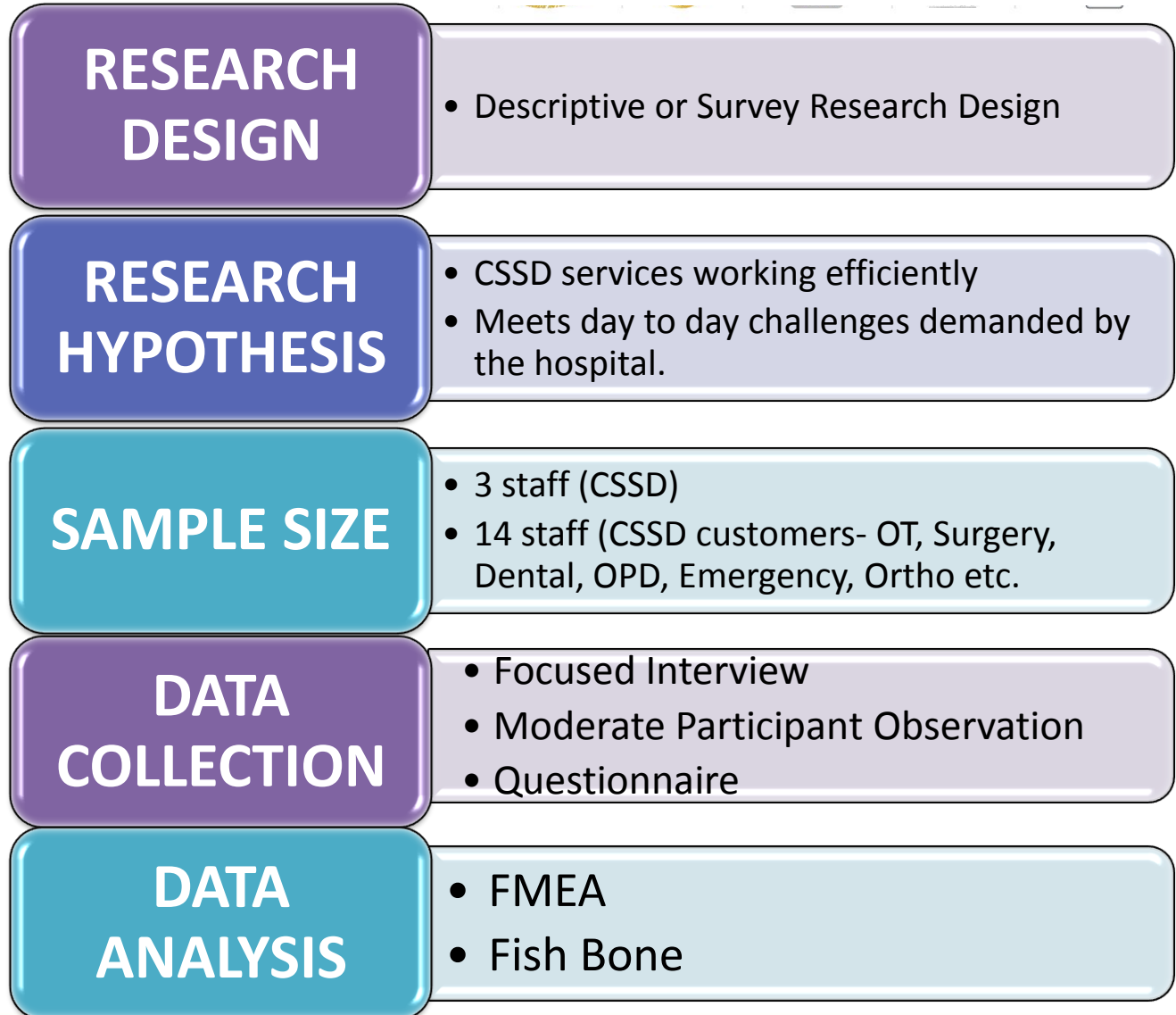
Lack of literature availability about CSSD efficiency.

Limitations

Research Methodology



Research Workflow



CSSD Operation

ACHSI
CERTIFICATION



JCI
ACCREDITATION



THE SHEIKH KHALIFA
EXCELLENCE AWARD



THE EUROPEAN
QUALITY AWARD



ARAB HEALTH
PATIENTS SAFETY AWARD



Process

Service

Process Flow chart

CSSD staff survey

CSSD customer's survey

Questionnaire

Fish bone

FMEA

Anova

Suggest
Recommendations

FMEA PROJECT: Improve Efficiency of CSSD Service

FMEA goal:	To decrease failures in CSSD processes
Project leader:	Mr. Moh'd Hamad
Team members:	Mrs.Hodan, Mrs.Julian,Mr.Faiz and Ms.Shiji
Date prepared:	15 May 2014

#	Process Function (Step)	Potential Failure Modes (process defects)	Potential Failure Effects (KPOVs)	Potential Causes of Failure (KPIVs)	S E V	O C C	Current Process Controls	D E T	R P N	Recommen d Actions	Responsi ble Person & Target Date	S E V	O C C	D E T	R P N
1	Reception	Wrong / Missing Entry	Loss of instrument tracking	Customer carelessness and lack of time	6.25	5.25	Log book Entry	4	131.25	Check during receiving and sending	CSSD head	6	4	2	50
2		Mixing	Loss of instrument tracking	More than two customers come and left instruments in hurry	5	5.25	Log book Entry	4	105	Count loud and write by the customer /introduce inventory management system	CSSD head	5	4	2	40
3		Improper Checking of defects in instrument	Customer and CSSD staff will blame on each other if any defects found after sterilization	Lack of detailed instrument checking or due to lack of time	6.75	5.25	Visual inspection	4.75	168.33	Introduce magnifying lamp for detailed instrument check	CSSD head	6.75	4	2	54
4		Receiving instrument without Personal protective equipments	Lack of staff	Possibility of staff infection from contaminated instruments	10	2.25	N/a	3.25	73.13	Strict monitoring of plastic apron and gloves	Infection Control in charge	10	2.25	3	67.5
5		Delay in receiving instrument	Delay in pre-cleaning	Stains harden due to delay	3.5	6.25	N/a	2.75	60.16	Implement time schedule	Dept. head	2	4	2.75	22
6	Pre-cleaning	Improper cleaning	Ineffective dirt removal	Improper technique/old brushes/improper brush size	6	5.75	N/a	4.25	146.63	Intend & store the required brushes	Stores & CSSD head	5	5	4.5	112.5

7	Pre-cleaning	Unavailability of reagent	Cant process	Ineffective cleaning	8	6	Stock replenish every 10 days	3.75	157.50	Intend & store before stock depletes	Stores & CSSD head	6	5	3	90
8	Pre-cleaning	Ineffective pre cleaning	Ineffective dirt removal	Not maintaining minimum time of instrument immersion in reagent/improper dilution rate	6	5.75	N/a	4.5	155.25	Strict use of measuring cup to maintain proper dilution rate	CSSD head & Infection control	5	5	3	75
9		Presence of dental cement after sterilization	Ineffective dirt removal	Staff finds difficulty removing cement because of its chemical properties.	6.25	5.75	N/a	4.75	170.70	Visual inspection and use of effective chemicals	CSSD head & Infection control	6	5	3	90
10		Scope Instrument disassembly and reassembling lag	Increases process time	Wrong reassembling /parts missing/parts damage	4	4.25	N/a	3.5	59.50	Conduct manufacturer training by the suppliers about cleaning	CSSD Head	4	3	2	24
11		Lack of air/water gun cleaning	Ineffective cleaning	Lack of air/water supply/gadget malfunction	6.5	3.5	Inform to maintenance department	2.5	56.88	Daily check before operation	CSSD Head and staff	6	3.5	2	42
12		Ultrasound cleaner not working	Ineffective cleaning	Machine error	5.75	3.5	Inform to biomedical/ supplier	2	40.25	Daily check before operation	CSSD Head and staff	5	3	2	30
13	Cleaning	Quality test failure	Can't process	Failure of tosi test	8.25	4	Inform to biomedical/ supplier	2.75	90.75	Daily monitoring / repeat test	CSSD Head	8	3	2	48
14		Cleaner disinfectant not working/leaking	Can't process	Machine error/Gasket failure	8	6	Inform to biomedical/ supplier	3.25	156.00	Perform routine checkup	CSSD Head and staff	8	5	2	80
15		Cleaner disinfector not drying	Ineffective cleaning	Improper drying	7.25	6.25	Manual drying by staff	2.5	113.28	Check instrument before proceeding to next process	CSSD Head and staff	7	5	2	70
16		Instrument missing inside	Instrument	Instrument will get trapped inside	4.75	3.5	Manual searching	4.5	74.81	Check while unloading for	CSSD Head and staff	4.5	3	3	40.5

Packing	Sharp Instrument injury without PPE	Lack of staff	Possibility of staff infection from contaminated instruments due to injury	10	2.25	N/a	3.25	73.13	Use of Heavy duty gloves	Infection Control	10	2	3	60
	Absence of Quality indicator strip in the pouch	Uncertainty about instrument status	Staff accidentally skips strip insertion	6	4	N/a	4.5	108.00	Monitoring and checking	CSSD Head and staff / Infection control	6	4	4	96
	Lack of double packing for OT instruments	Easily contaminated	Staff accidentally skips double packing	7.25	4	N/a	4	116.00	Monitoring and checking	CSSD Head and staff/ infection control	7	3	4	84
	Lack of checking instrument	Loss of instrument tracking	Small /minor Instrument may get miss after cleaning process	5	4.5	N/a	4.75	106.88	Log book comparison before packing	CSSD Head and staff	5	3	3	45
Sealing	Improper sealing	Will affect sterilization process	Machine or packing material problem	5.25	4	Inform biomedical/ supplier	4	84	Check user settings / Biomedical action	CSSD Head and staff	5	3	3	45
Sterilization	Can't process	Machine error	Gasket failure/improper vacuum/lack of water supply	7	5.25	Inform biomedical/ supplier	1.75	64.31	Check user settings / Biomedical action	CSSD head	7	4	1	28
	Improper drying	Instrument s will be wet	Sterilizer error	7	4.25	Inform biomedical/ supplier	3.75	111.56	Check user settings / Biomedical action	CSSD Head	7	4	3	84
	Quality test failure	Cant process	Failure of bowie dick or Biological indicator test	7.75	3.5	Inform biomedical/ supplier	2.25	61.03	Monitoring and checking	CSSD Head and staff/ infection control	7	3	2	42
	Packing will get opened during sterilization	Generates uncertainty about quality of instrument processed	Low quality of the pouches or improper sealing	6.5	3.5	Reprocessing	3	68.25	Inspection before transferring	CSSD Head and staff	6	3	3	54

26	Shelving	Wrong placement of instruments	Loss of instrument tracking	Staff Carelessness / lack of time	5.5	5.25	N/a	5	144.38	Proper labeling and partition should be made	CSSD Head and staff	5	5	4	100
27	Dispatching	Improper distribution	Loss of instrument tracking /delay in receiving	Lack of proper communication / lack of messenger /lack of cross checking by user as well as staff	6	5.25	N/a	5	157.50	Perform cross checking by messenger and cssd staff before dispatch	CSSD Head and staff	6	4	4	96
28	CSSD staff	Absence of staff	Process delay / reduction in efficiency	Increased number of OR cases	6.25	4.25	N/a	2	53.13	Redesign workflow to suit demand	Quality dept.	6	4	2	48
					Total				2908		Total				1718

There must be quick mechanism for purchasing and decision making process regarding CSSD.

This approach is effective during the course of research and gives valuable insight of CSSD operation.

Nearly 79% of CSSD users are satisfied with the performance of CSSD.



FINDINGS

There must be quick mechanism for purchasing and decision making process regarding CSSD.

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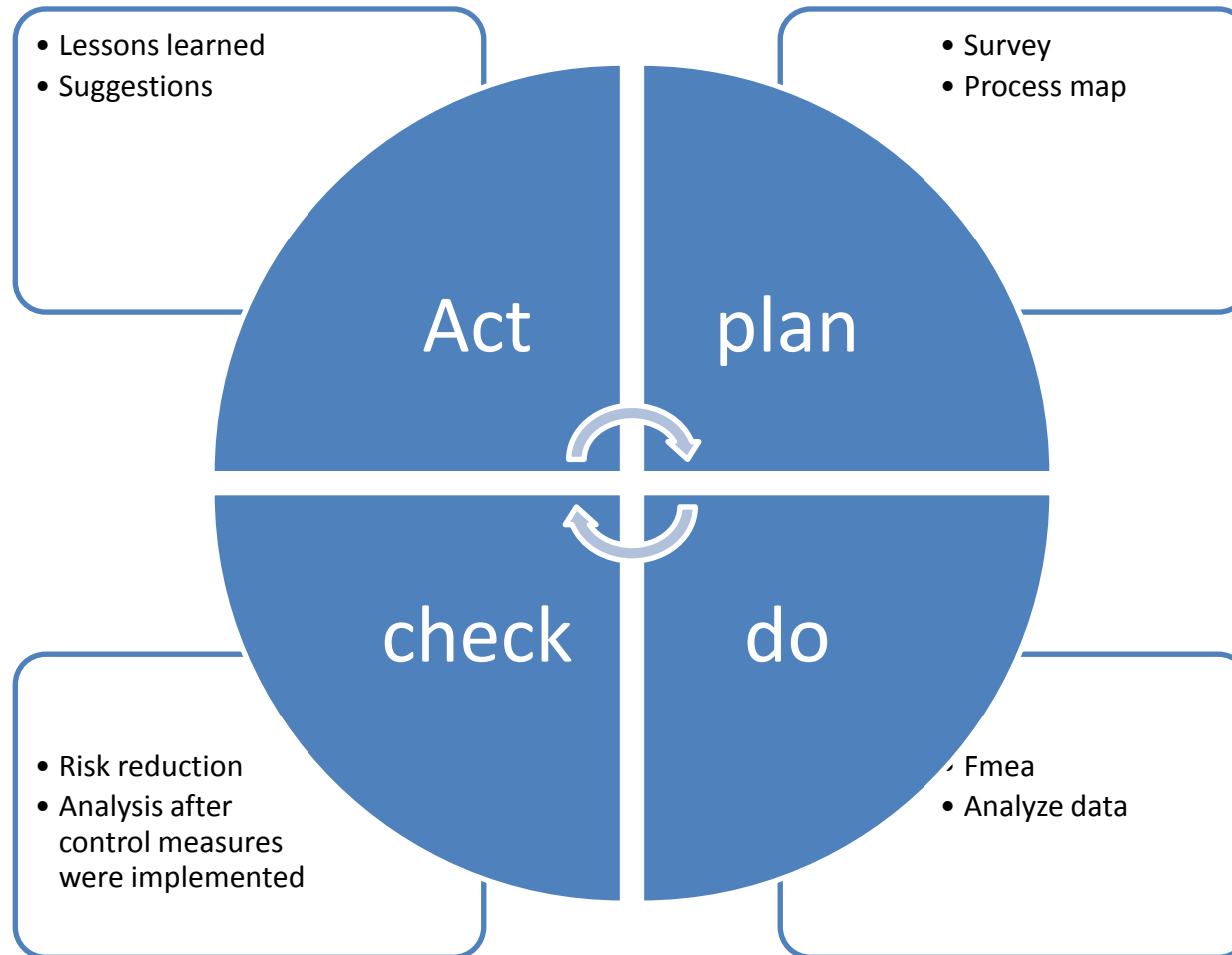
Nearly 79% of CSSD users are satisfied with the performance of CSSD.

Nearly 60% of the customers receive instrument between 2- 4 hours shows CSSD department is working efficiently. But, few customers states it takes more than 6 hours which shows there is a scope of improvement.

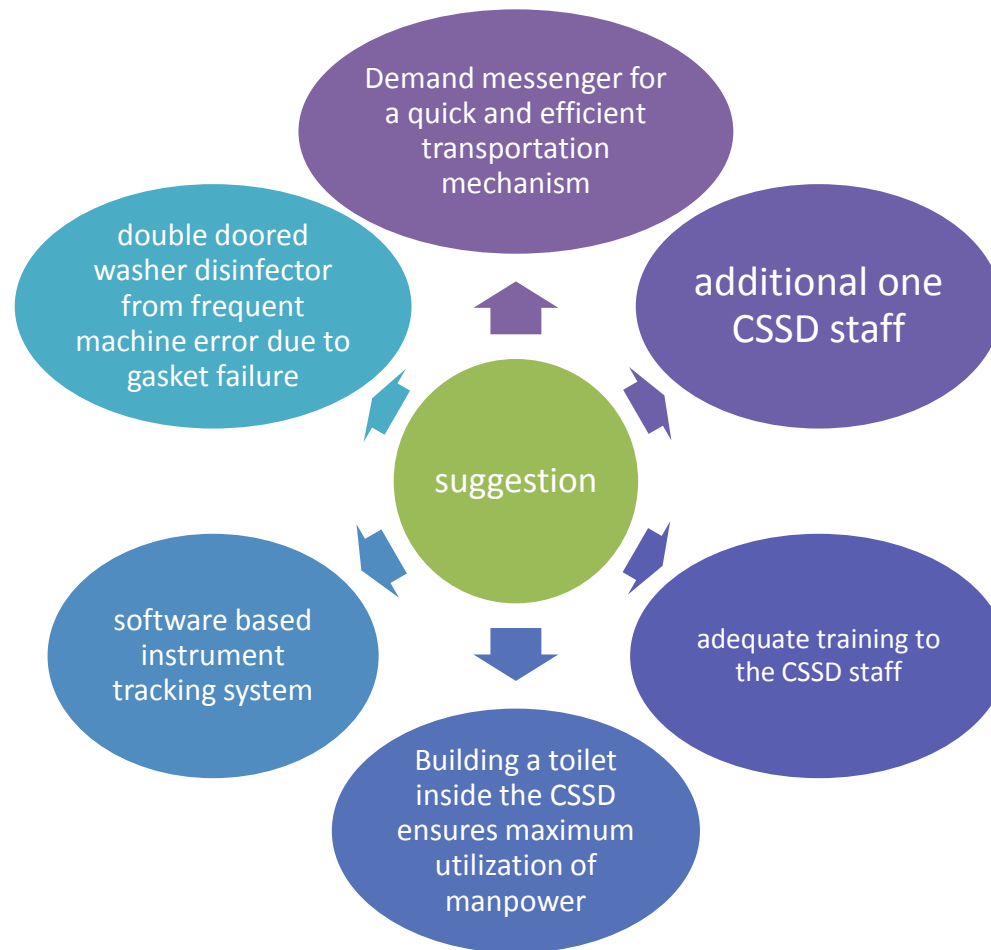
All respondents stated they lack enough staff; there is an urgent requirement for a staff with respect to the workload.

CSSD's preparedness against unfavourable condition and through the research, researcher has attempted to give an insight to various aspects of failure and recommended control action which was rated "Good "by the participants and can reduce failures by 41%.

Quality assurance methods are maintaining excellent standard, except transportation to the CSSD. This is due to delay in receiving instrument or lack of a messenger / transporter to bring contaminated instruments from the department.



SUGGESTION





THANK YOU