

# INTERNAL CUSTOMER SATISFACTION

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# External customers

- External customers are the people that pay for and use the services
- External customers are also known as “clients”
- Internal customers are the company’s employees or the stakeholders within the company who are interdependent to complete their jobs.

# Internal customers

- An internal customer is anyone who works within the organization or with whom employees or staff interact inside the organization as a part of their regular job or responsibility
- Internal customers are the employees within the organization who are interdependent to complete their jobs.
- They are also called as stakeholders

# Internal customers

Internal customers for one another

- Two peers within a team
- Two departments within the organisation
- The organisation and its employees

# Why Internal Customer satisfaction

- External customers can vote with their wallet – if they aren't satisfied, they won't purchase in the future.
- The more the employees are involved in an organization and satisfied, the better would be the external customer experience and the faster the company will reach its goal and objective.
- It is therefore critical to care about internal customer satisfaction.
- If this simple metric is ignored, every employee will be fighting internal battles just to be productive, and the overall output of company suffers.

# How to Manage Internal Customers?

- Feedback
- Taking Action
- Creating Service standard
  - Should establish a clear service standard that will give the employees clear instructions on how things are operated. Every department has to their designated work and standard operating procedure. The SOP ensures that everyone in the company knows what to do and feels valued.
- Acknowledging accomplishment and celebrating success
  - Employees are motivated if acknowledged for their hard work.

# Assessing Internal customer satisfaction

Similar methodologies that is being used for Customer satisfaction can be used

- Survey forms
- Interviews
- Email questionnaires
- Telephonic interviews
- Observational

Preferably anonymous feedback mechanism

# Examples of Internal customer satisfaction in Hospital

- Clinicians satisfaction with Lab services
- Clinicians satisfaction with Imaging services
- Ward manager/ Nurses satisfaction with Laundry services
- Ward manager/ Nurses satisfaction with CSSD services
- Department satisfaction with the EMR software
- Department satisfaction with the Maintenance Department
- Staff satisfaction Surveys
- User satisfaction with calibration services
- Clinicians satisfaction with the inter-departmental consultation service in wards



# Conducting Internal user satisfaction audit

- Identify the frequent users of the department/service
- Call for a audit team meeting comprising of
  - Quality team
  - Representatives from departments
  - Few representatives from user department
  - Decide on the methodology
    - Who need to be surveyed (respondent)
    - What sample size
    - Period of survey
    - Who will analyse and report
    - Questions
- Finalise the questions and get consensus
- Administered by third party (Quality team).

# Questionnaire

- Avoid Yes / No
- Preferably likert scale
  - 3 or 5 or 7 point scale
  - Agree: Disagree, Satisfied: Dissatisfied:, Often : Rare, Relaxed: Stressful
- 14-18 questions ideal.
- Questions to cover specific components of the service. Don't completely be technical. Include non-technical as applicable to audit
  - Response to queries, Politeness of the staff, Adherence to PPE etc
- Provision for remarks if low scoring is given.
- Final question should assess overall satisfaction
- Provision for suggestions and comments
- Respondents name and detail should be optional
- Respondents department could be mandatory

# Examples of the Questionnaire



CHRISTIAN MEDICAL COLLEGE VELLORE  
QUALITY MANAGEMENT CELL



**AUDIT ON USER SATISFACTION WITH CSSD SERVICES AT CMC**  
(Please tick appropriately)

| S. no |  | Agree | Neither agree / nor disagree | Disagree | Comments, if any |
|-------|--|-------|------------------------------|----------|------------------|
| 1     | I have adequate CSSD items for use in my ward/area   |       |                              |          |                  |
| 2     | I am comfortable with collection time of unsterile items by the CSSD attenders             |       |                              |          |                  |
| 3     | I am comfortable with the delivery time of sterile items from CSSD                         |       |                              |          |                  |
| 4     | The trolley that delivers sterile items is clean   |       |                              |          |                  |
| 5     | The trolley are smooth and noise free  |       |                              |          |                  |
| 6     | Items delivered by CSSD have   |       |                              |          |                  |
|       | • no stains  |       |                              |          |                  |
|       | • no damage  |       |                              |          |                  |
|       | • are completely sterile   |       |                              |          |                  |
| 6     | • are in working condition   |       |                              |          |                  |
|       |  |       |                              |          |                  |
| 7     | I am satisfied with the packing  |       |                              |          |                  |
| 8     | Expiry dates are available in all CSSD items   |       |                              |          |                  |
| 9     | The quantity of items present in dressing packs is adequate and are not wasted once opened |       |                              |          |                  |
| 10    | Items are not missing in the packs   |       |                              |          |                  |
| 11    | The exact number of items sent for sterilization are received back from CSSD (No due)      |       |                              |          |                  |
| 12    | CSSD attenders wear gloves and masks while handling un-sterile items in my ward/area       |       |                              |          |                  |
| 13    | CSSD attenders are polite and approachable   |       |                              |          |                  |

| S. no |  | Agree | Neither agree / nor disagree | Disagree | Comments, if any |
|-------|--|-------|------------------------------|----------|------------------|
| 14    | Office staff in CSSD respond to queries promptly                   |       |                              |          |                  |
| 15    | CSSD is innovative and updates to latest technologies/techniques   |       |                              |          |                  |
| 16    | CSSD provides regular updates on handling items, pre cleaning etc. |       |                              |          |                  |
| 17    | I am aware of CSSD practices that are being followed in CMC        |       |                              |          |                  |
| 18    | I am fully satisfied with the service provided by CSSD             |       |                              |          |                  |

**19. Additional Feedback**

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Name (Optional).....

Designation (Mandatory).....

Ward / ICU / OPD / Others (Mandatory).....



CHRISTIAN MEDICAL COLLEGE VELLORE  
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Audit on User Satisfaction of Laundry Services in CMC - 2021

| S. No | Criteria   | <i>(Please tick appropriately)</i>   |                            |          |                |
|-------|--|--|----------------------------|----------|----------------|
|       |  | Agree  | Neither agree nor disagree | Disagree | Not Applicable |
| 1     | I am comfortable with the collection time of dirty linen by the Laundry attenders                  |  |                            |          |                |
| 2     | I am comfortable with the delivery time of washed linen from Laundry                               |  |                            |          |                |
| 3     | The trolleys that deliver the washed linen are clean   |  |                            |          |                |
| 4     | The trolleys are smooth and noise free   |  |                            |          |                |
| 5     | Laundry attenders wear gloves and masks while handling dirty linen in my ward/ area                |  |                            |          |                |
| 6     | Laundry attenders are polite and approachable  |  |                            |          |                |
| 7     | Office staff in Laundry respond to queries promptly  |  |                            |          |                |
| 8     | Laundry provides regular updates (e.g. on pre-washing, sharps in linen, motion stained linen etc.) |  |                            |          |                |
| 9     | I am fully satisfied with the service provided by Laundry  |  |                            |          |                |
|       |  | Always   | Often                      | Never    |                |
| 10    | Linen delivered by Laundry   | a) Are stain free  |                            |          |                |
|       |  | b) Are clean   |                            |          |                |
|       |  | c) Are completely dry  |                            |          |                |
|       |  | d) Are not damaged/torn  |                            |          |                |
|       |  | e) Have all the ties of gowns intact   |                            |          |                |
|       |  | f) Are not mixed-up  |                            |          |                |
|       |  | g) Are folded properly   |                            |          |                |
| 11    | Linen dues from Laundry  | a) Exact number sent for washing are received back from Laundry (i.e. no dues pending) |                            |          |                |
|       |  | b) Dues, if any, are replaced the very next day  |                            |          |                |

Suggestions/ Comments:

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Name : .....

Ward / Department\* : .....

Designation : .....

Signature : .....



CHRISTIAN MEDICAL COLLEGE VELLORE  
QUALITY MANAGEMENT CELL



**Audit on User Satisfaction of Radiology Department in CMC - 2021**

| QUESTIONNAIRE                       |   | Agree | Neutral | Disagree | Comments (If any) |
|-------------------------------------|---|-------|---------|----------|-------------------|
| <b>OFFICE STAFF/TECHNICAL STAFF</b> |   |       |         |          |                   |
| 1                                   | Staff answer telephone enquiries promptly   |       |         |          |                   |
|                                     | Staff are polite and helpful  |       |         |          |                   |
| <b>SERVICES</b>                     |   |       |         |          |                   |
| 2                                   | Appointment are available within the acceptable time for routine cases                        |       |         |          |                   |
|                                     | a. X-ray  |       |         |          |                   |
|                                     | b. CT scan  |       |         |          |                   |
|                                     | c. MRI  |       |         |          |                   |
|                                     | d. Ultrasound   |       |         |          |                   |
|                                     | e. Colour Doppler   |       |         |          |                   |
|                                     | f. IVU  |       |         |          |                   |
| 3                                   | Emergency services are available on time  |       |         |          |                   |
| 4                                   | Reports are available on time (TAT) for routine cases   |       |         |          |                   |
|                                     | a. X-ray (if requested, within 48 hours)  |       |         |          |                   |
|                                     | b. CT scan (6-48 hours)   |       |         |          |                   |
|                                     | c. MRI (6-48 hours)   |       |         |          |                   |
|                                     | d. Ultrasound (6-24 hours)  |       |         |          |                   |
|                                     | e. Colour Doppler (6-24 hours)  |       |         |          |                   |
|                                     | f. IVU (6-24 hours)   |       |         |          |                   |
| 5                                   | Reports are available on time (TAT) for emergency cases (30 min – 2 hours) preliminary report |       |         |          |                   |
| 6                                   | The image intensifier services in theatre are satisfactory                                    |       |         |          |                   |
| 7                                   | The portable radiographers are done on time   |       |         |          |                   |
| <b>RESULTS/REPORT</b>               |   |       |         |          |                   |
| 8                                   | Critical results are informed to the ward/unit promptly                                       |       |         |          |                   |

| QUESTIONNAIRE                |  | Agree | Neutral | Disagree | Comments (If any) |
|------------------------------|--|-------|---------|----------|-------------------|
| 9                            | Images provided are of good quality  |       |         |          |                   |
| 10                           | Reports are reliable   |       |         |          |                   |
| 11                           | The radiologists,  |       |         |          |                   |
|                              | a. Are always available for consultation / queries                                 |       |         |          |                   |
|                              | b. Responds to the queries politely  |       |         |          |                   |
|                              | c. Able to give help us in interpreting unusual reports                            |       |         |          |                   |
|                              | d. Significant amendments in the finalized reports are informed                    |       |         |          |                   |
| <b>COST AND SATISFACTION</b> |  |       |         |          |                   |
| 12                           | The cost of the radiology procedures is reasonable                                 |       |         |          |                   |
| 13                           | Radiology department is innovative and updates to latest technologies / techniques |       |         |          |                   |
| 14                           | I am satisfied with the services provided by radiology department                  |       |         |          |                   |

Suggestions:

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Name : .....

Unit / Department : .....

Designation : .....

Signature : .....



**Clinicians Satisfaction with Clinical Virology Services at CMC**

(Please tick appropriately)

| Description   | Agree | Neither agree nor disagree | Disagree |
|---|-------|----------------------------|----------|
| Primary sample collection manual is easily accessible   |       |                            |          |
| Content of the primary sample collection manual is comprehensive  |       |                            |          |
| Primary sample collection manual requires modification  |       |                            |          |
| Scope of tests fulfill patient care   |       |                            |          |
| Online test selection is easy and convenient  |       |                            |          |
| Test requisition forms are always available at the ward   |       |                            |          |
| Test requisition forms requires modification  |       |                            |          |
| Periodic assessment of sample volume is required for testing  |       |                            |          |
| Appropriate sample collection containers are available at the ward  |       |                            |          |
| Special containers for CD4 testing, molecular tests and viral culture are issued from the department for special tests is convenient for patients |       |                            |          |
| Sample collection facility at the department for special tests is convenient for patients   |       |                            |          |
| Sample transportation containers are always available   |       |                            |          |
| Sample transportation is easy and convenient  |       |                            |          |
| Uncertainty of measurement of quantitative test results commensurate with clinical need   |       |                            |          |
| Result are consistent with patient symptoms   |       |                            |          |
| Results fulfill the intended clinical purpose of testing  |       |                            |          |
| Aware of quality control procedures and quality assurance program of virology   |       |                            |          |
| <b>Results</b>  |       |                            |          |
| Results are reported without delay  |       |                            |          |
| Results are reported accurately and clearly   |       |                            |          |
| Report attributes are adequate and communicated effectively   |       |                            |          |
| Report content is clear and adequate  |       |                            |          |
| Cautionary/explanatory notes commensurate with test significance  |       |                            |          |

|  |  |  |  |
|--|--|--|--|
| Interpretative comments are adequate to clinical need            |  |  |  |
| Advisory services commensurate with clinical need                |  |  |  |
| Turnaround time of the assays are adequate                       |  |  |  |
| Periodicity of the tests are optimum                             |  |  |  |
| Revised reports are not amended without informing the clinicians |  |  |  |
| Record of revised reports are maintained well                    |  |  |  |
| <b>Laboratory information system</b>                             |  |  |  |
| Report/data retrieval is effective                               |  |  |  |
| Storage of data is safe against tempering or loss                |  |  |  |
| Integrity of data/information is adequate                        |  |  |  |
| <b>Staff</b>   |  |  |  |
| Courteous  |  |  |  |
| Communication is clear   |  |  |  |
| Responsiveness(willingness to resolve problems)                  |  |  |  |
| Confidentiality of test results are maintained well              |  |  |  |
| <b>Costing</b>   |  |  |  |
| The price of laboratory tests is reasonable                      |  |  |  |

**Additional Feedback**

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Name (Optional) : .....

Designation : .....

Unit\* : .....

# Internal customer satisfaction as QIP

- Initial audit- Baseline data
- Identify the areas requiring improvement
  - Use Quality tools
- Implement changes- can be done in phases
- Ensure periodical re-audit.
- Make it an Indicator and see the trend



# **ACHIEVING CONTINUOUS IMPROVEMENT IN CSSD MANAGEMENT THROUGH PERFORMANCE MEASUREMENTS USING USER SATISFACTION SURVEYS AND INTERVENTIONS**

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**CHRISTIAN MEDICAL COLLEGE VELLORE**



# Christian Medical College Vellore



*"Not to be ministered unto but to minister"*

| CMC Statistics     |      |
|--------------------|------|
| Outpatients        | 9250 |
| Operations         | 185  |
| Births             | 55   |
| Radiological Tests | 2405 |
| Number of Beds     | 2999 |
| Bed Occupancy      | 78%  |

# Introduction

- CSSD started in 1972 for supplying sterile items to 7 wards.
- Currently 151 destinations.
- 2018- CSSD processed 60,38,370 items with daily average of 16,543 packs.

# Problem Definition

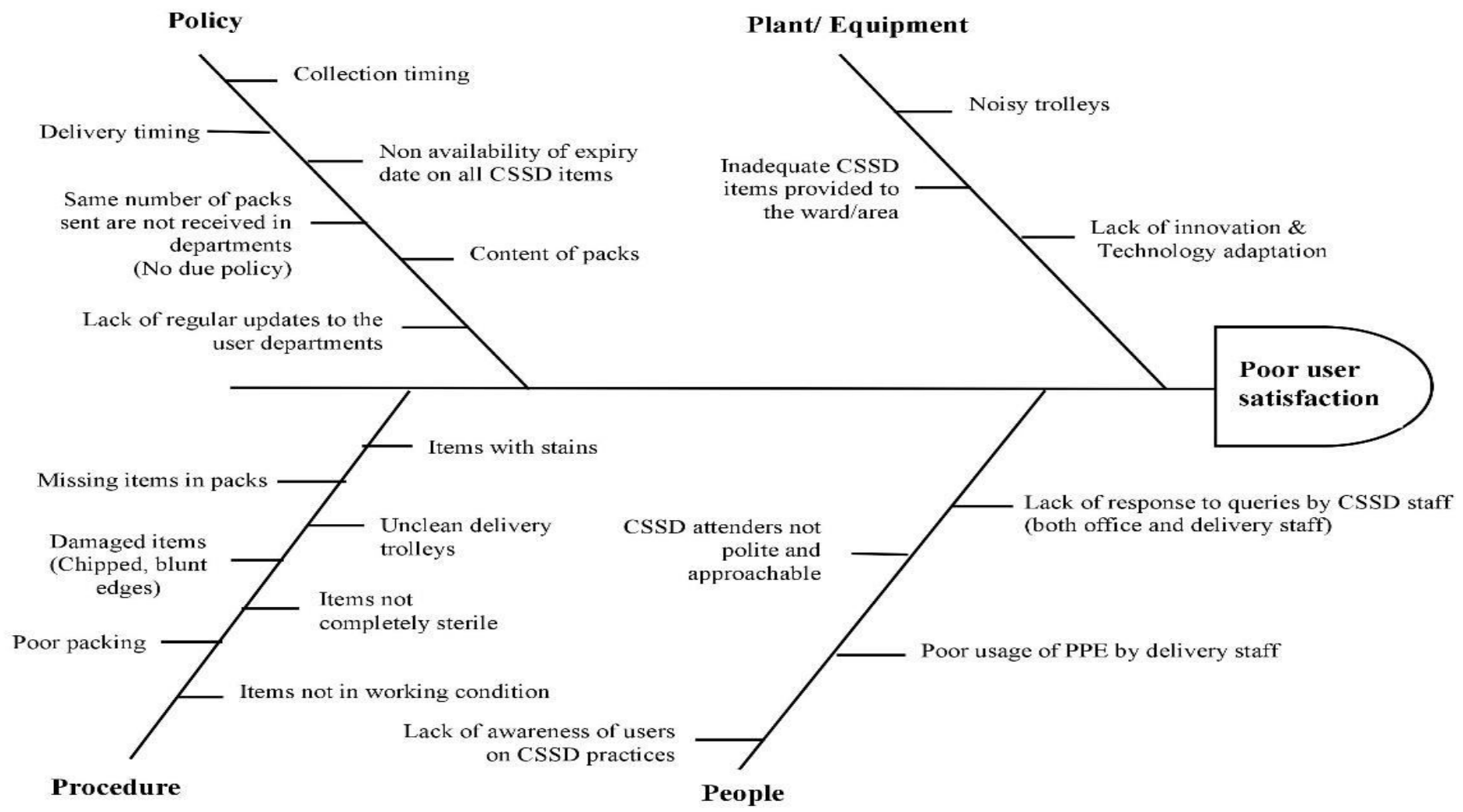
- NABH pre-assessment in 2010 and also the final assessment in 2011- many non-conformances on CSSD practices in CMC.
- Complaints from patients in the patient feedback surveys.
- Poor attitude of CSSD Attendants - Complaints from nursing.

64.HIC 7a System for sterilisation needs to be strengthened based on the surgical load. At certain points (entrance to main CSSD) there is crisscross of sterile & unsterile items. Dust layers were seen in the clean area of CSSD. Plastic drums with empty bottles for recycling contained used syringes, capped needles, masks etc.

65. HIC.7.c. No recall procedure exists in the CSSD. The details of where a particular batch of sterilised items has been distributed in the OT complex cannot be tracked. Batch No is not put on any of the sterilised packs in CSSD. Date of sterilisation, date of expiry is not mentioned in many of the sterilised packs in CSSD.

# Problem Diagnosis

- Multidisciplinary group formed in 2012
- Brainstorming session - doctors, nurses, administrators, quality team and engineers



# Problem Diagnosis

- Baseline user satisfaction survey on CSSD initiated by the group in 2012
- The questionnaire had 20 statements in a 5-point scale ranging from strongly agree to strongly disagree
- Respondents- Charge nurses of the wards (About 117 in 2012)

|    |  |    |
|----|--|----|
| 1  | I have adequate CSSD items for use in my ward/ area                | 91 |
| 2  | I am comfortable with collection time of unsterile items           | 83 |
| 3  | I am comfortable with the delivery time of sterile items from CSSD | 90 |
| 4  | The trolley that delivers sterile items is clean                   | 93 |
| 5  | The trolley are smooth and noise free                              | 28 |
| 6  | Items delivered by CSSD have no stains                             | 78 |
| 7  | Items delivered by CSSD have no damage                             | 61 |
| 8  | Items delivered by CSSD have are completely sterile                | 80 |
| 9  | Items delivered by CSSD have are in working condition              | 52 |
| 10 | I am satisfied with the packing                                    | 77 |

|    |  |    |
|----|--|----|
| 11 | Expiry dates are available in all CSSD items                       | 92 |
| 12 | The quantity of items present is adequate and are not wasted       | 73 |
| 13 | Items are not missing in the packs                                 | 40 |
| 14 | The exact number of items sent for sterilization are received back | 20 |
| 15 | CSSD attenders wear PPE while handling unsterile items             | 9  |
| 16 | CSSD attenders are polite and approachable                         | 52 |
| 17 | Office staff in CSSD respond to queries promptly                   | 78 |
| 18 | CSSD is innovative and updates to latest technologies/techniques   | 60 |
| 19 | CSSD provides regular updates on handling items, pre cleaning etc. | 47 |
| 20 | I am aware of CSSD practices that are being followed in CMC        | 95 |

**21. I am fully satisfied with the service provided by CSSD – 54%**

### Vital (<50%)

- **Noisy trolleys**
- **Missing items**
- **No dues**
- **PPE by attendants**
- **Regular update from CSSD**

### Essential (50- 80%)

- **Stains**
- **Damages**
- **Items not in working condition**
- **Packaging**
- **Adequate items without wastage**
- **Polite & approachable attendants**
- **CSSD response to queries**
- **Updating & Innovation in CSSD**

### Desirable (>80%)

- **Adequate items**
- **Clean trolleys**
- **Collection time**
- **Sterile items**
- **Delivery time**
- **Expiry date on packs**
- **Awareness**

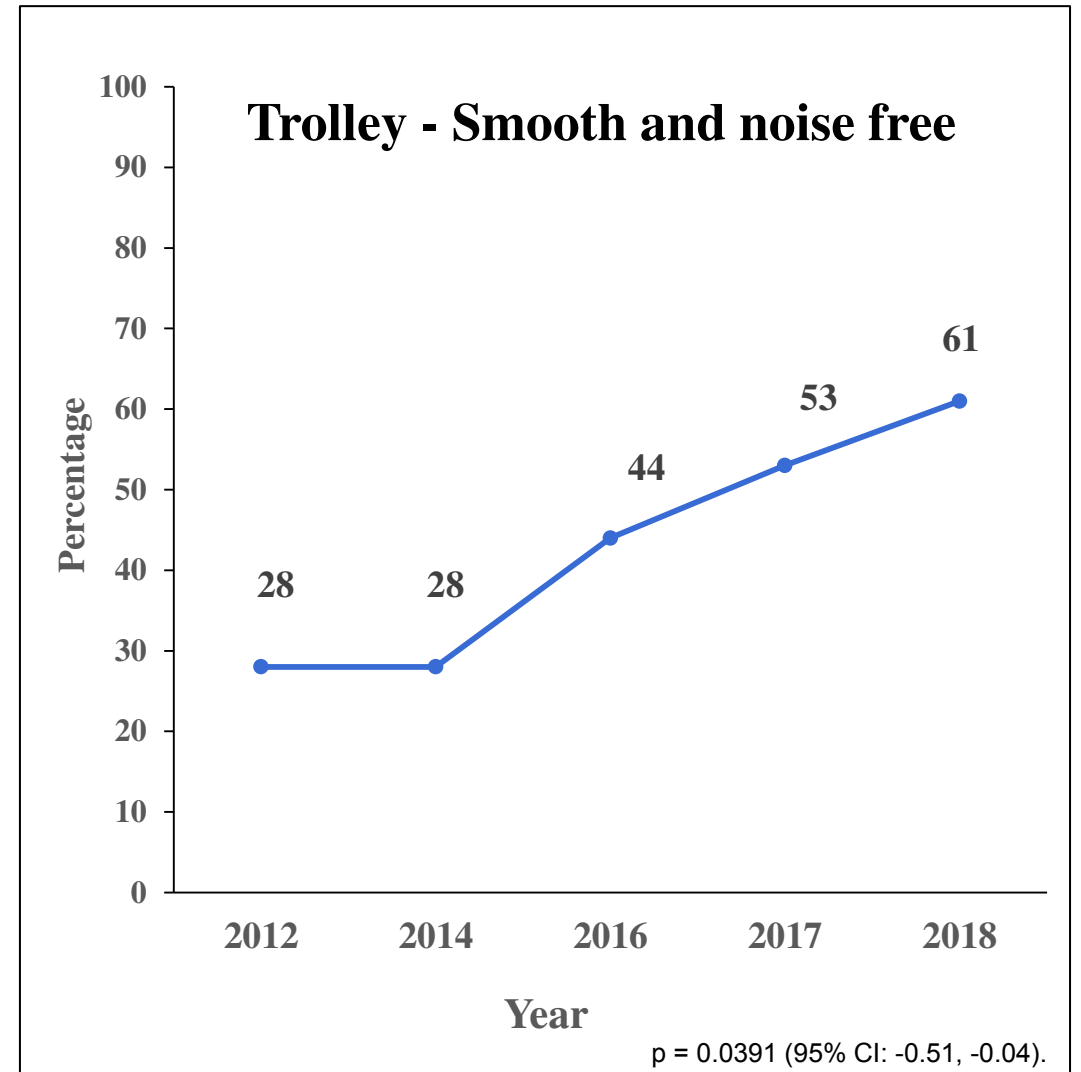


# Continuous Monitoring

- QMC kept track of all the changes and modifications done as per the recommendations
- Similar surveys in 2012, 2014, 2016, 2017 and 2018.

# Problem Remedy 1: Noisy Trolleys

- Joint meeting with MED.
- Proposed to change wheels from nylon to heavy duty polyethylene in 2012. Gradually completed in 2014.
- Stainless steel body to corrosion free aluminum alloy folded body. Central rib structure to reduce vibration
- Trial trolley- gradually all trolleys refabricated- 2016 and 2018
- 2018- Bearings provided between the wheels to provide floor protection and facilitate smooth movement



# Problem Remedy 2&3: Missing items & no dues

Instruments found missing in packs.

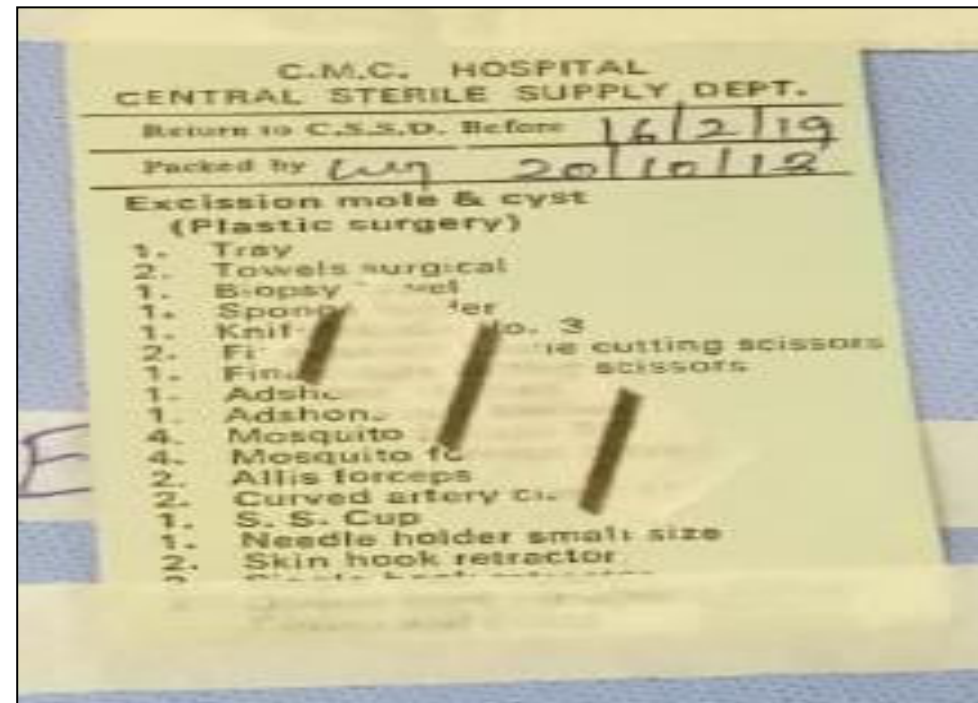
Exact number of packs sent for sterilization not received back.

## Root cause analysis

- No proper checking of instruments before packing.
- Not enough instruments to manage increase of load.
- Improper handling resulting in damages.
- Too many items in the pack which were not customized to the procedure

Reflected on three essential parameters - damages, items not in working condition and adequate items without wastage

- Double-checking introduced at the packing area. Checklist, with items names for each pack
- User feedback on items not missing improved from 40% in 2012 to 52% in 2018.



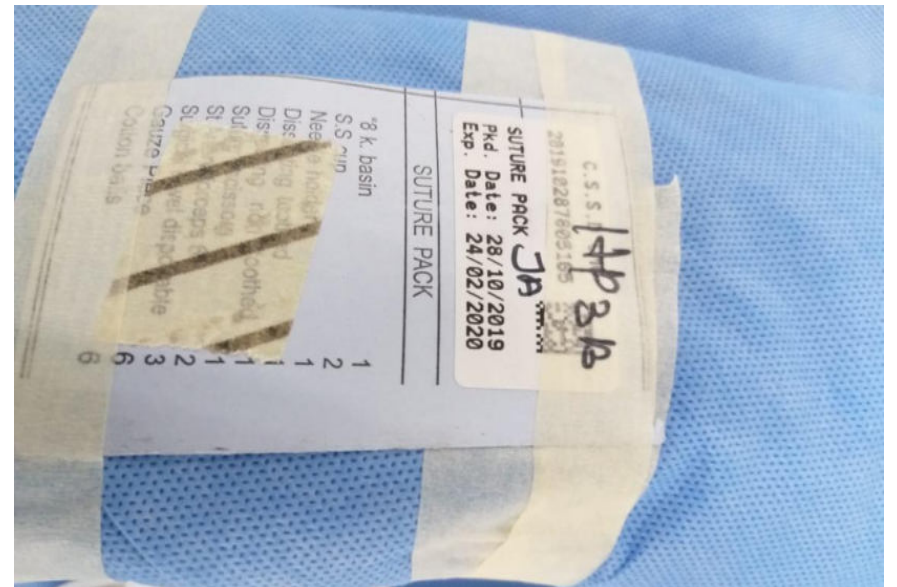
- Buffer stock in wards and in CSSD were increased
- The number of dues was made as an indicator for CSSD and continuously monitored

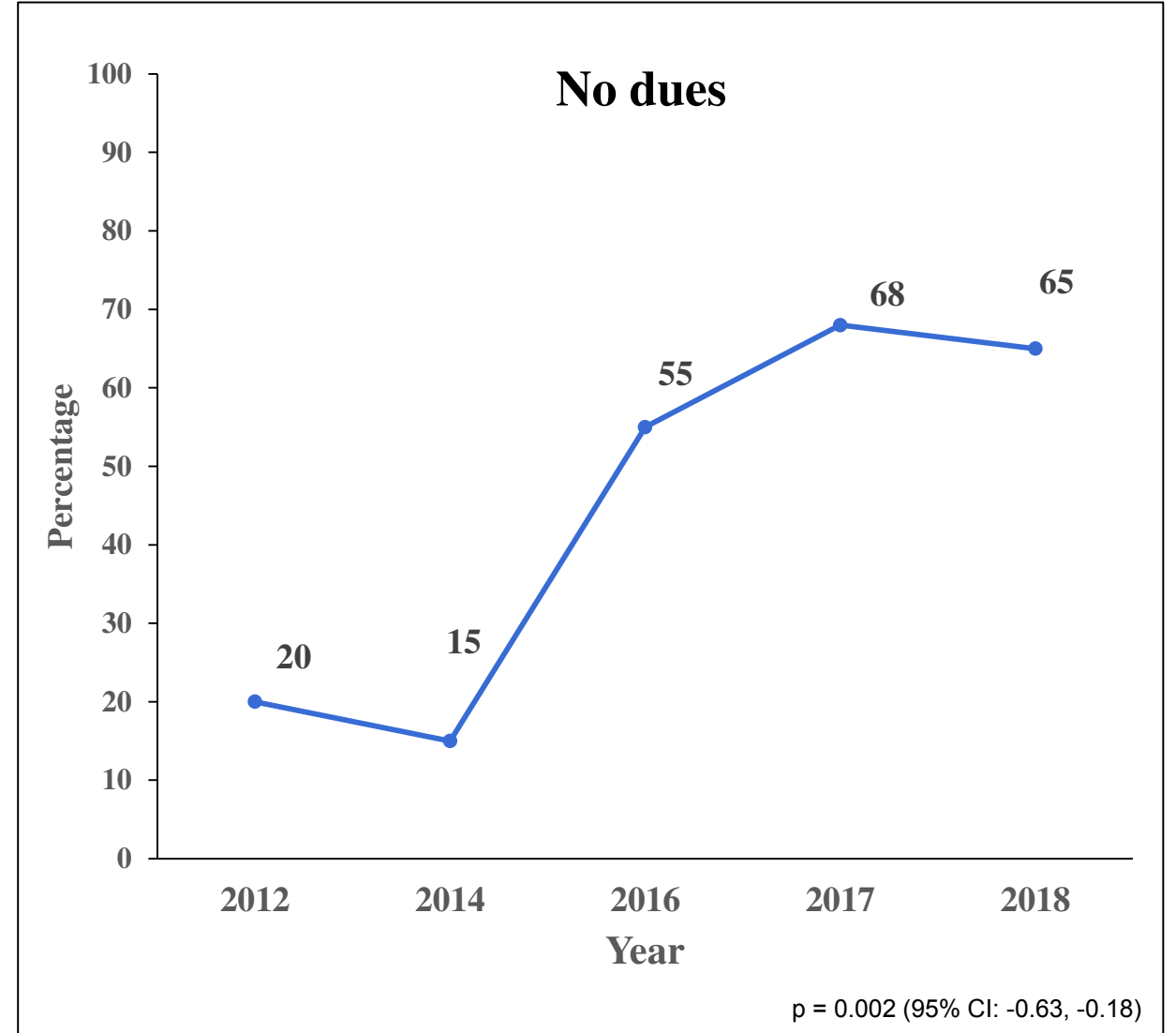
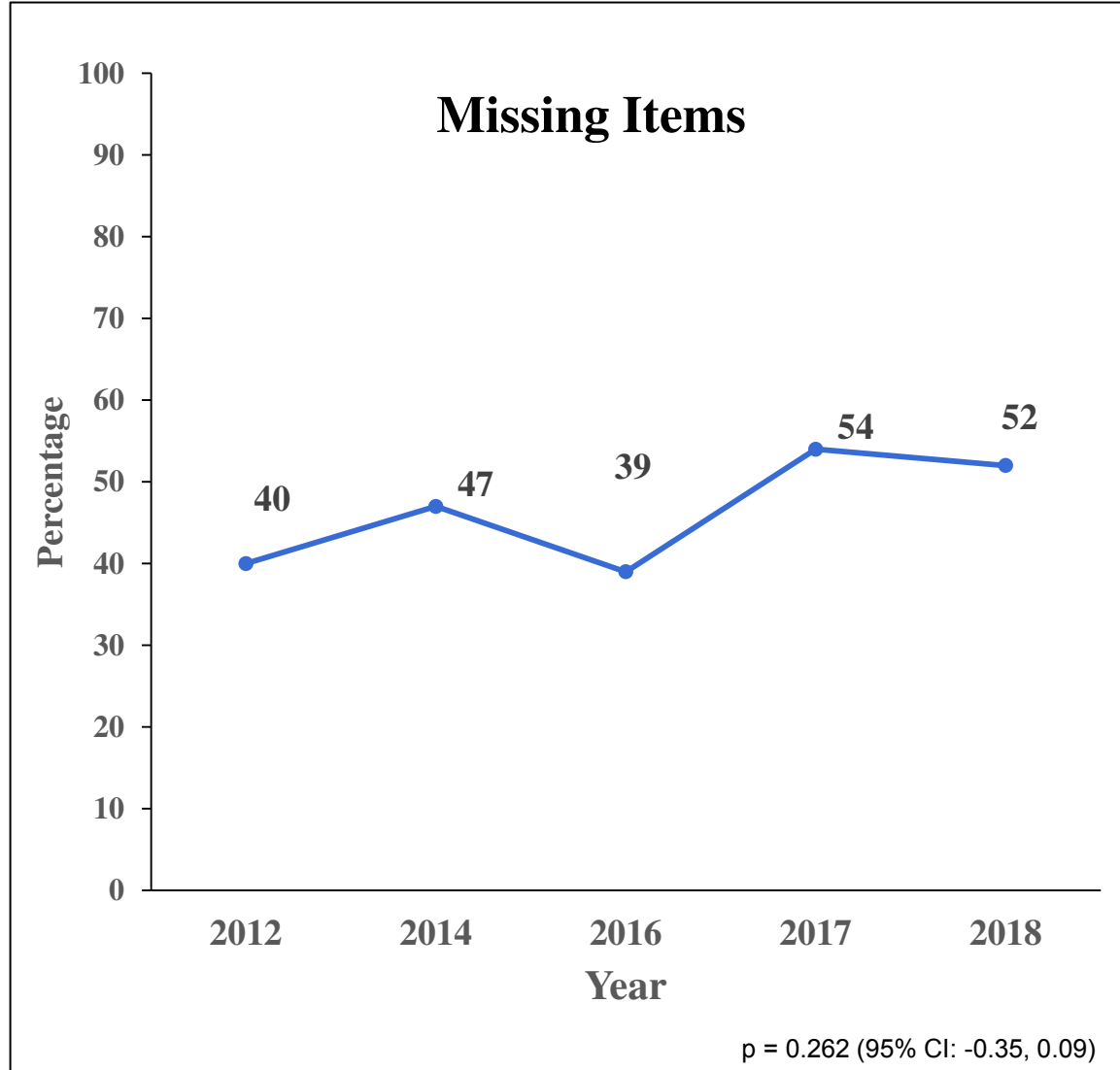
| <b>S.NO</b> | <b>ITEMS</b> | <b>2015</b> | <b>2016</b> | <b>2017</b> | <b>2018</b> |
|-------------|--------------|-------------|-------------|-------------|-------------|
| <b>1.</b>   | PER MONTH    | 143         | 61          | 14          | 6           |
| <b>2.</b>   | PER YEAR     | 1716        | 732         | 168         | 72          |

- Inspection table at the packing area, physical check on working condition of each item introduced.
- Scissors are checked by cutting threads, sharp items are protected with tip protectors.
- New protocol- end users to send damaged items separately labelled as not working.

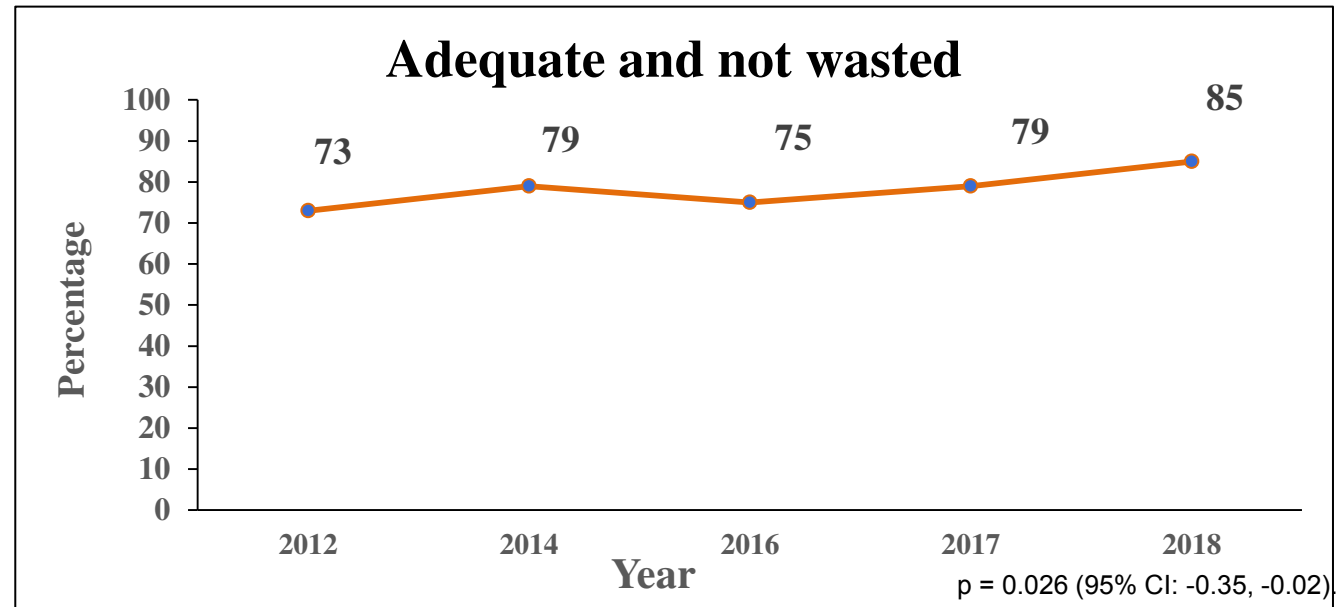
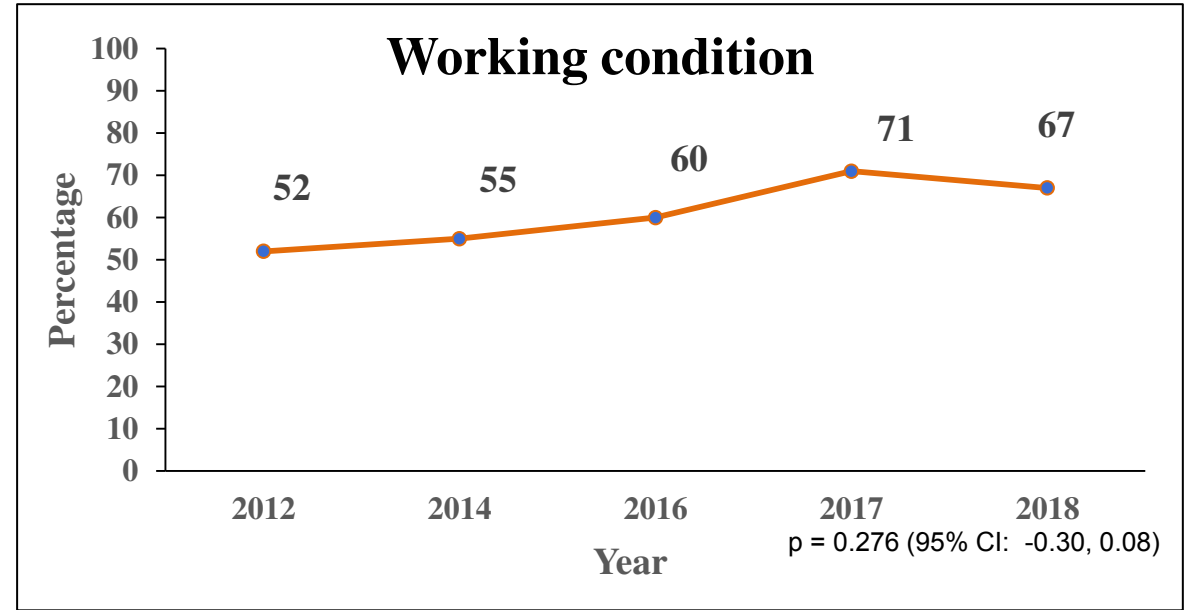
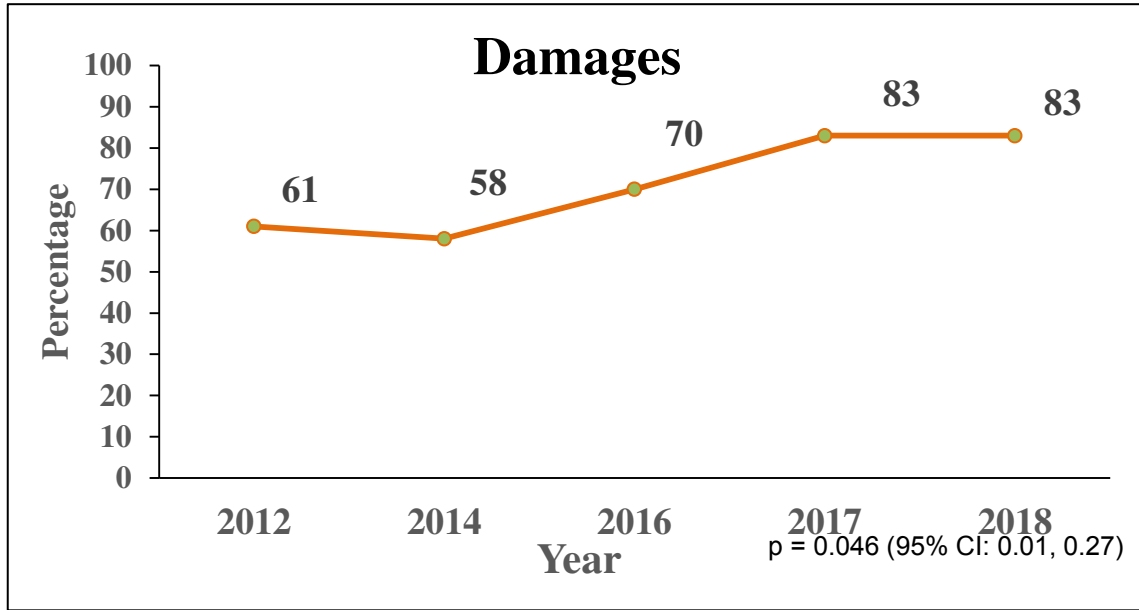


- Wastage of items due to usage of drums.
- Single use disposable packs for consumables like cotton balls, dressing pads.
- Custom made sets in discussion with users- Small suture pack, catheter insertion set for dialysis etc.







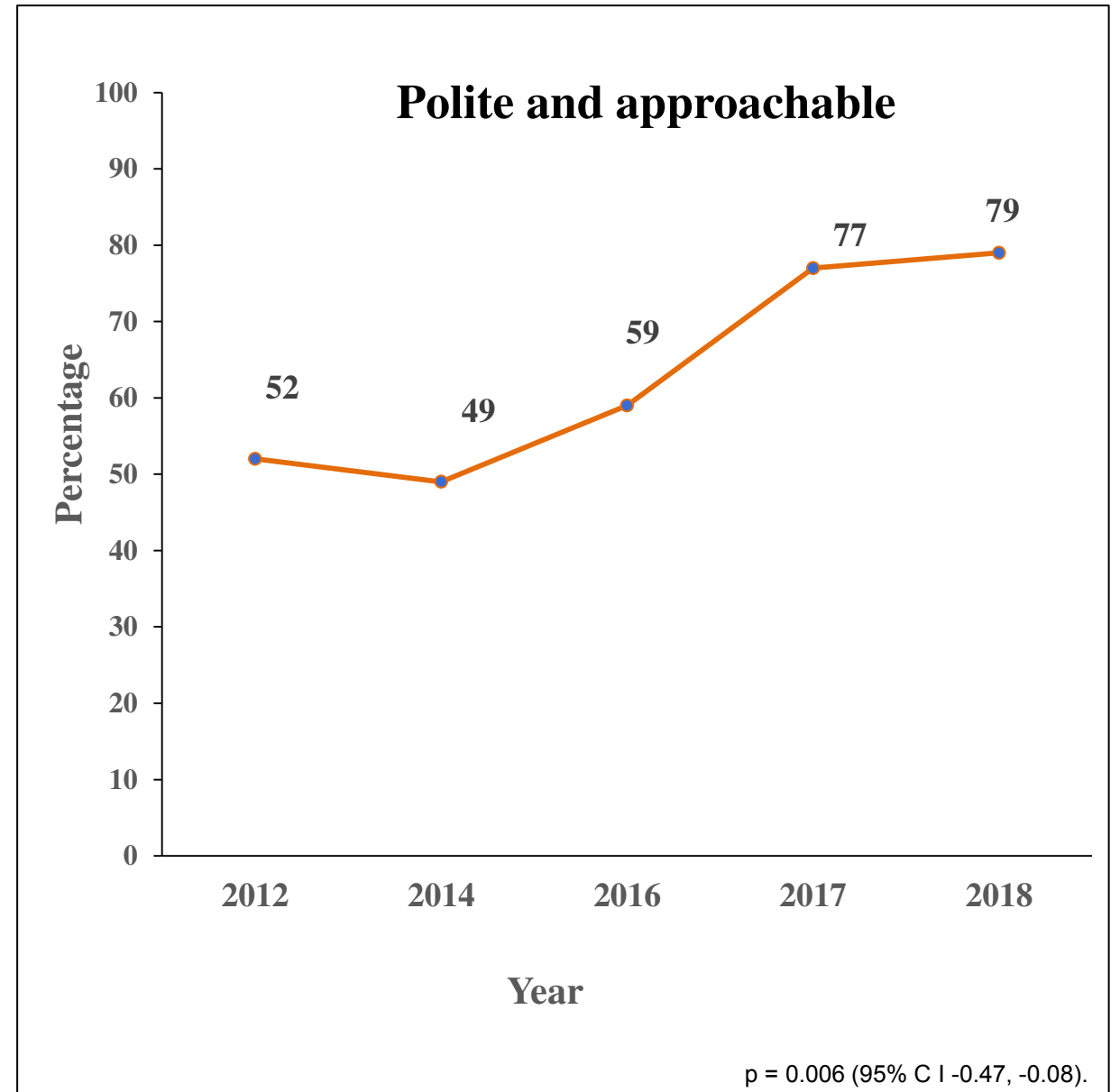
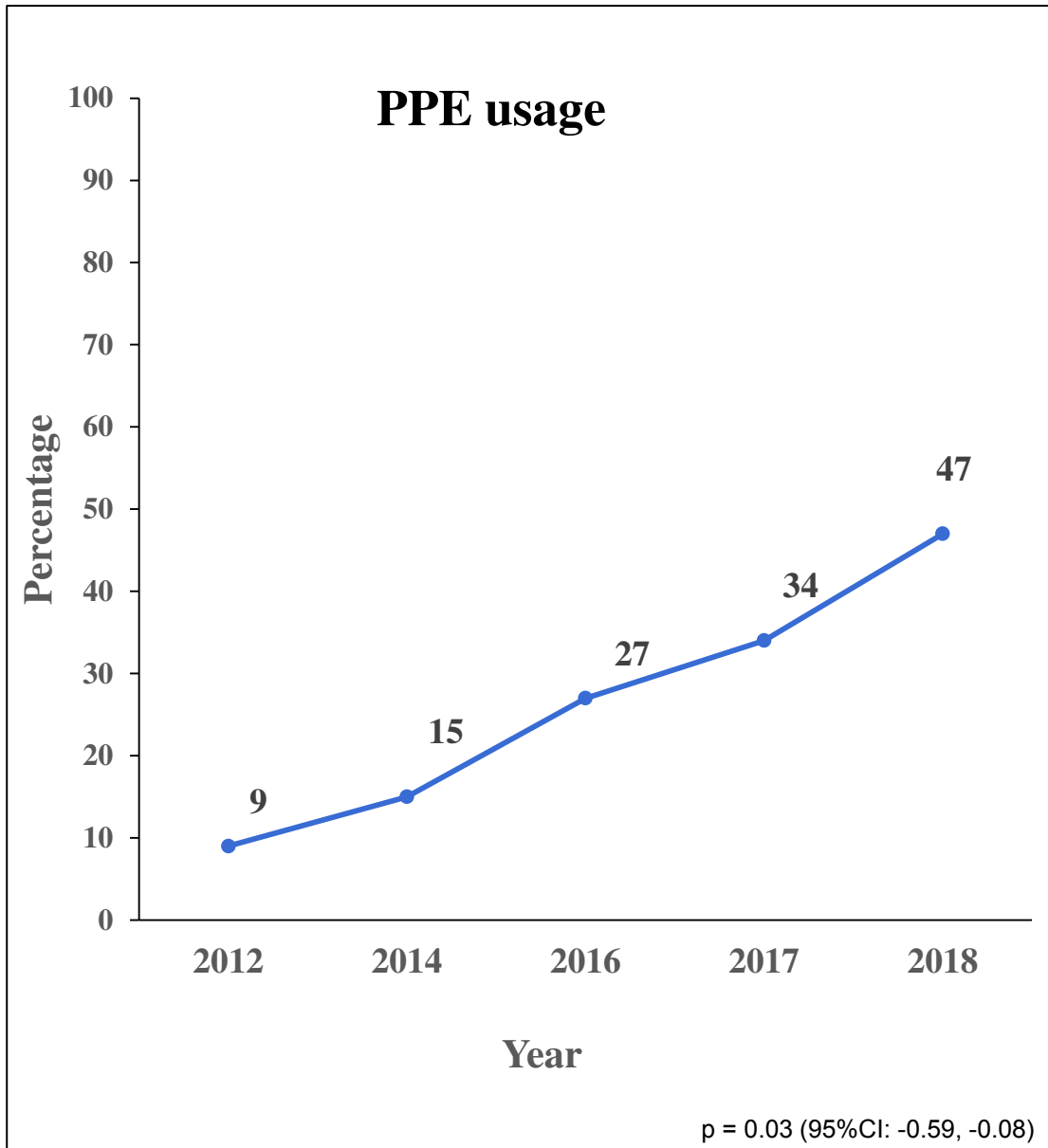


# Problem Remedy 4: Usage of PPE by Attenders

Reflected on one essential parameter – attitude and behaviour of attenders

- Continuous training- occupational hazards, infection control practices
- Trolleys fabricated with slots for gloves, hand rub for easy access
- Soft skill training and professional etiquettes
- Attenders encouraged to speak out in department meeting.





# Problem Remedy 5: Regular updates from CSSD

Reflected on two essential parameters – responding to queries and updating to latest techniques and technology

- CSSD nurse in charge addresses the charge nurses periodically and updates them
- Became a forum for addressing concerns, issues
- CSSD practices included as part of in-service training for nurses
- Procedure manual of CSSD made available in intranet

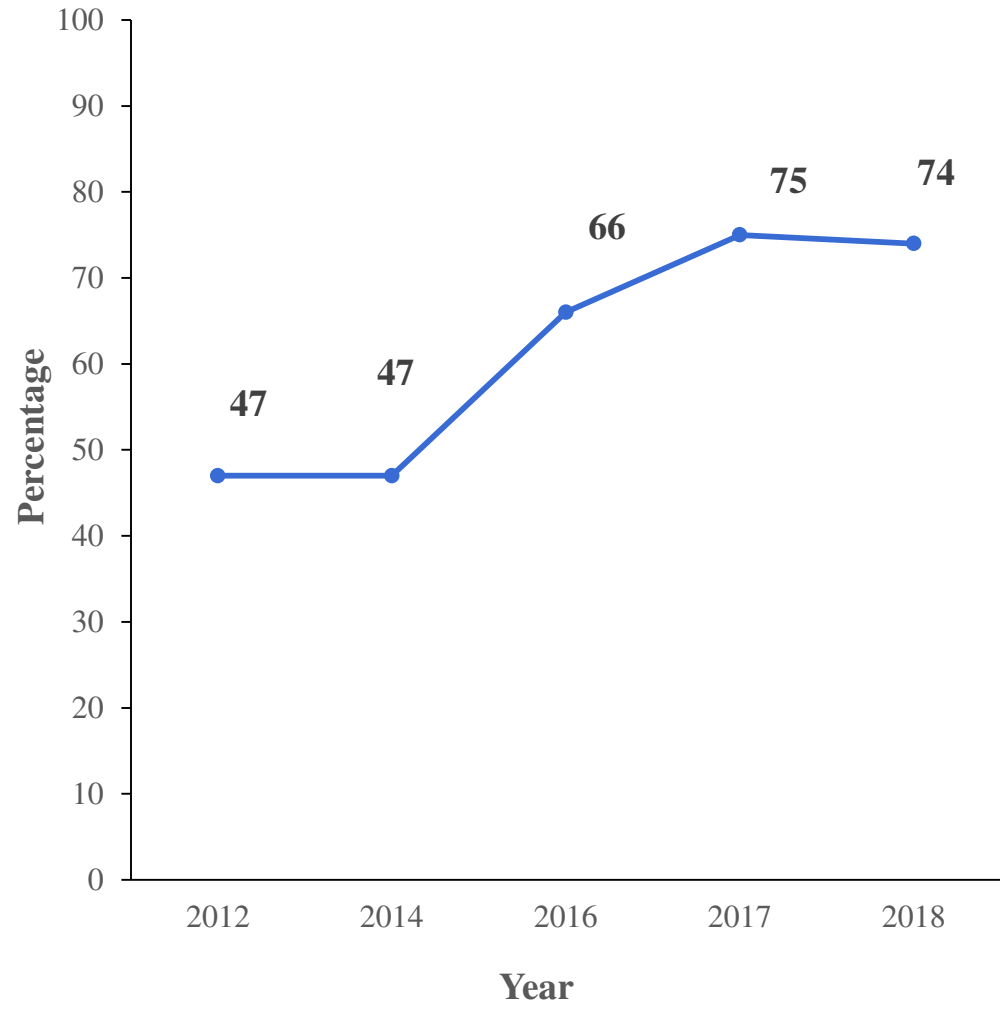


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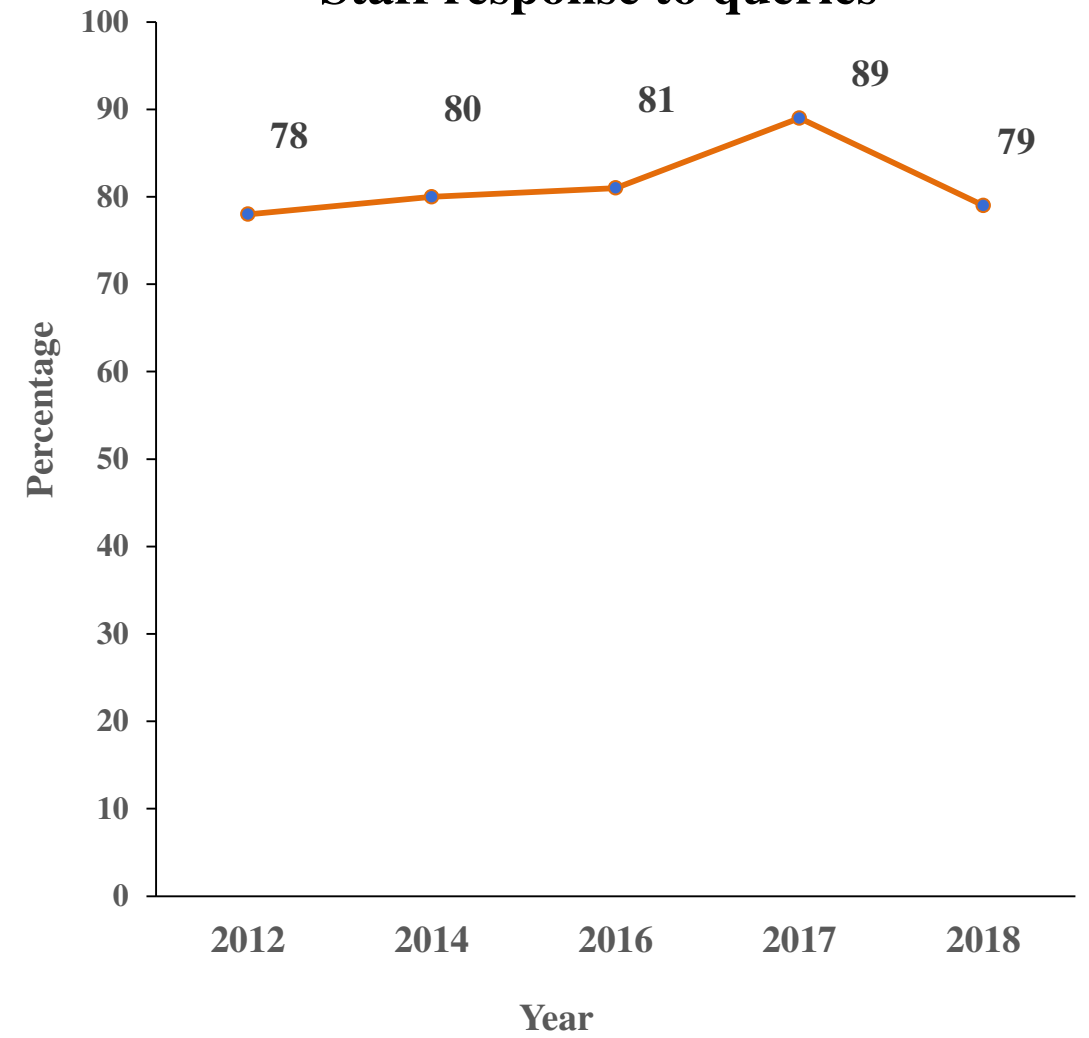
| PROCEDURE MANUALS & MISCELLANEOUS REPORTS |                                   |
|---|-----------------------------------|
| 30-SEP-2019                               | A WARD FACILITATION               |
| 07-OCT-2019                               | ACCOUNTS                          |
| 30-SEP-2019                               | AIR CONDITIONING DEPARTMENT       |
| 08-OCT-2019                               | ANAESTHESIA                       |
| 07-OCT-2019                               | BIOMEDICAL ENGINEERING            |
| 30-SEP-2019                               | CARDIO THORACIC SURGERY           |
| 08-OCT-2019                               | CARDIOLOGY                        |
| 30-SEP-2019                               | CENTRAL RESPIRATORY SECTION       |
| 07-OCT-2019                               | CENTRAL STERILE SUPPLY DEPARTMENT |
| 07-OCT-2019                               | CHIPS                             |
| 07-OCT-2019                               | CIVIL ENGINEERING                 |
| 07-OCT-2019                               | CLINICAL BIOCHEMISTRY             |
| 30-SEP-2019                               | CLINICAL GENETICS                 |
| 30-SEP-2019                               | CLINICAL MICROBIOLOGY             |
| 30-SEP-2019                               | CLINICAL PHARMACOLOGY             |
| 30-SEP-2019                               | CLINICAL VIROLOGY                 |
| 08-OCT-2019                               | CLINICAL GUIDELINESS BOOKLET      |
| 30-SEP-2019                               | COLLEGE MAINTENANCE               |
| 07-OCT-2019                               | COMMUNICATIONS                    |

### Regular updates from CSSD

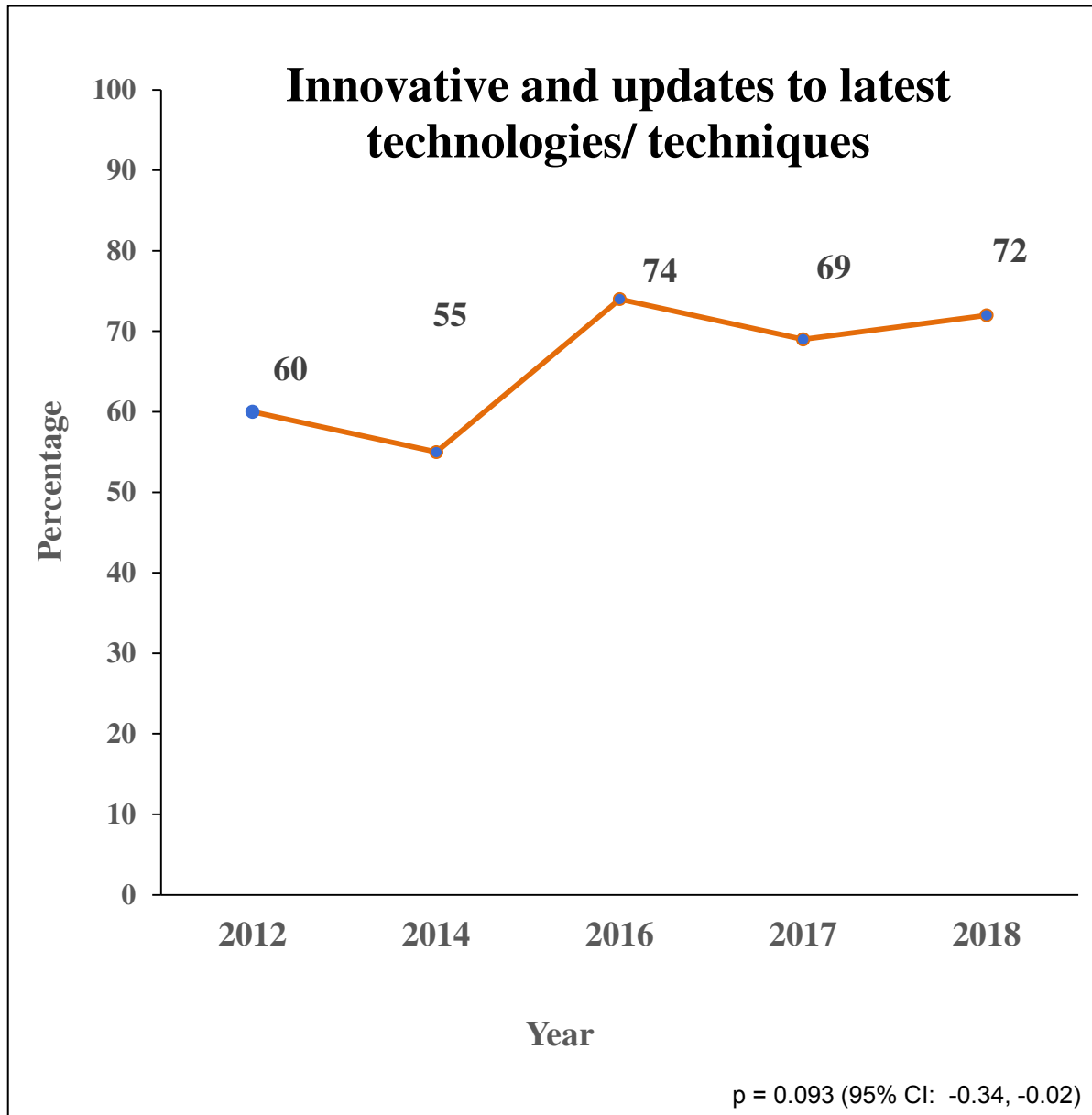


p = 0.007 (95% CI: -0.48, -0.07)

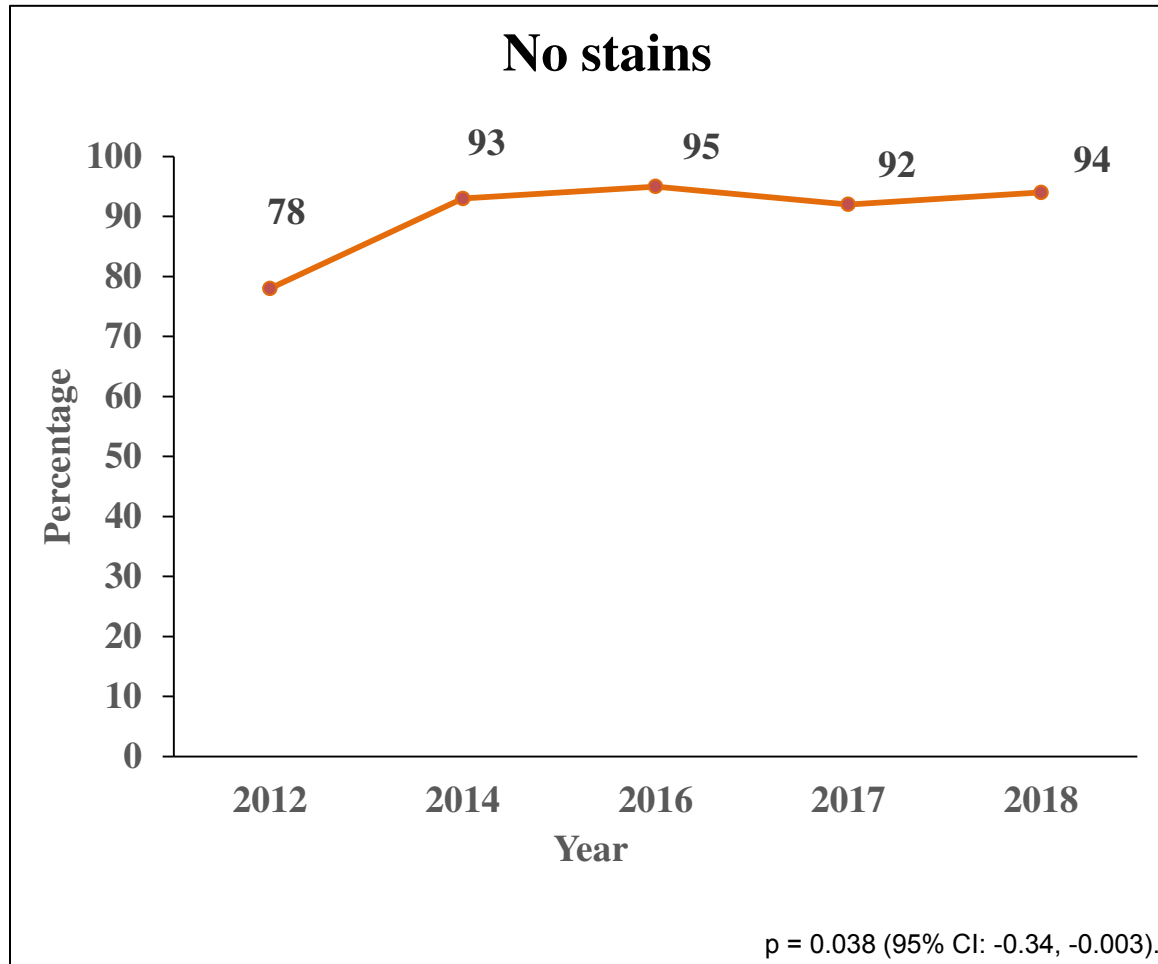
### Staff response to queries



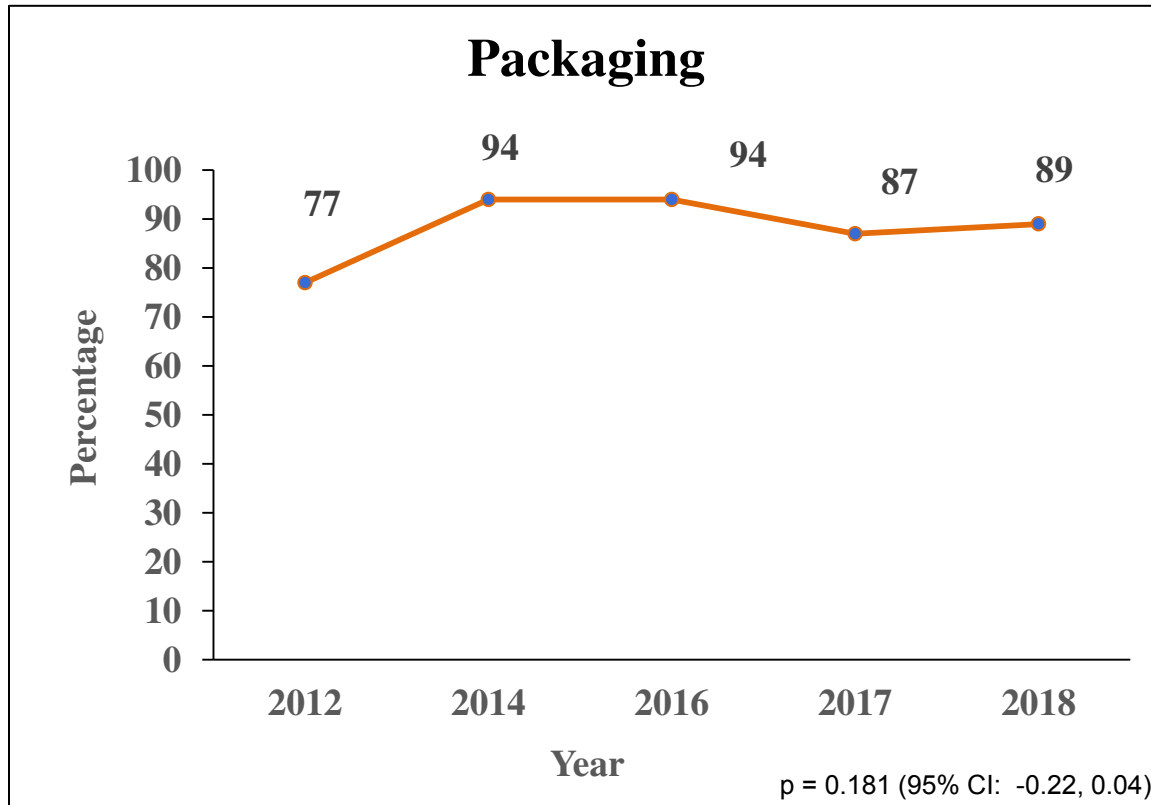
p = 0.793 (95% CI: -0.169, 0.129)



# Essential 1: No stains

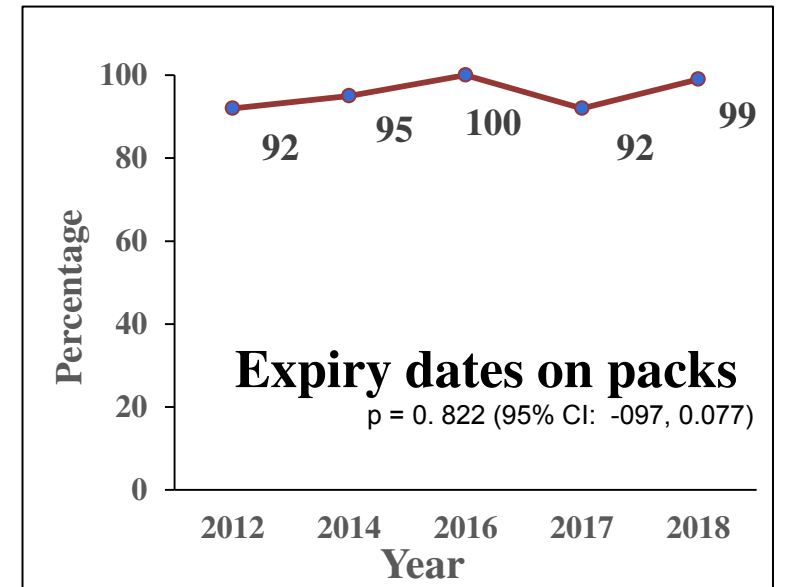
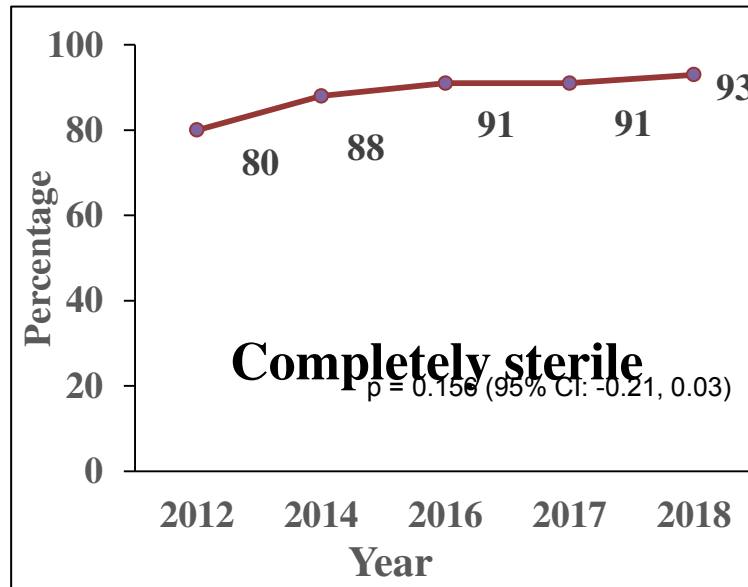
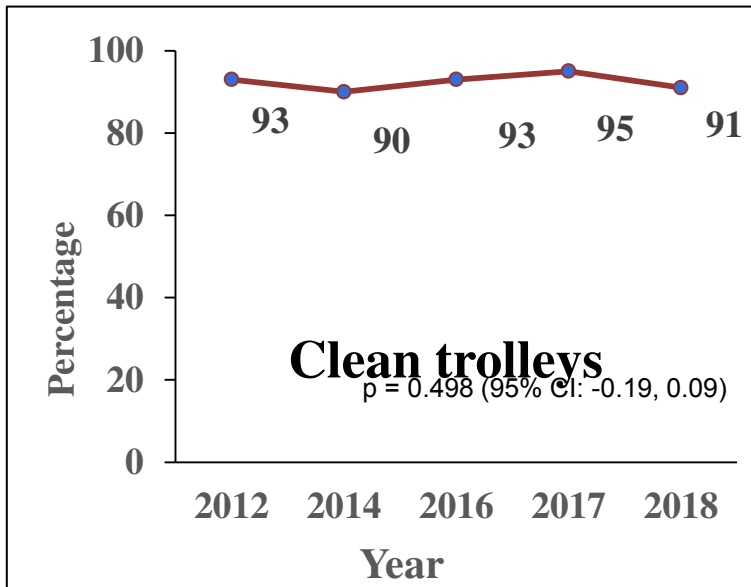
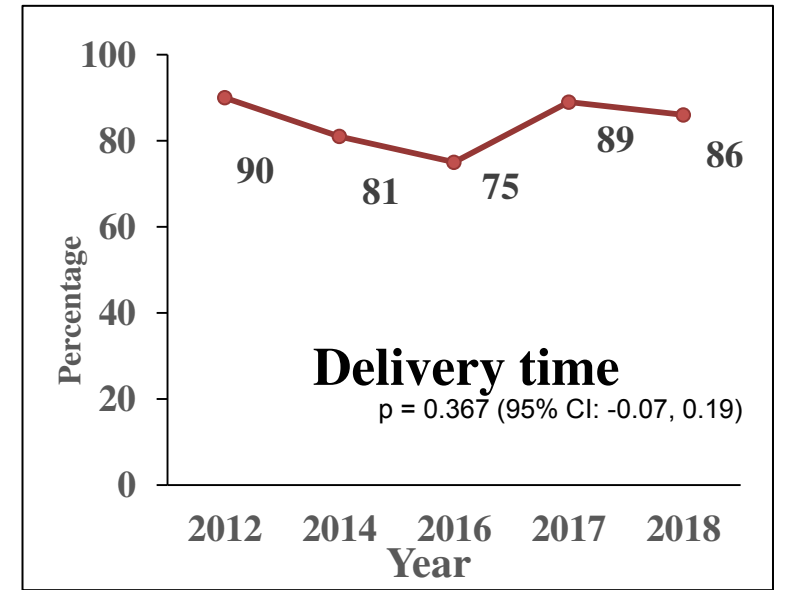
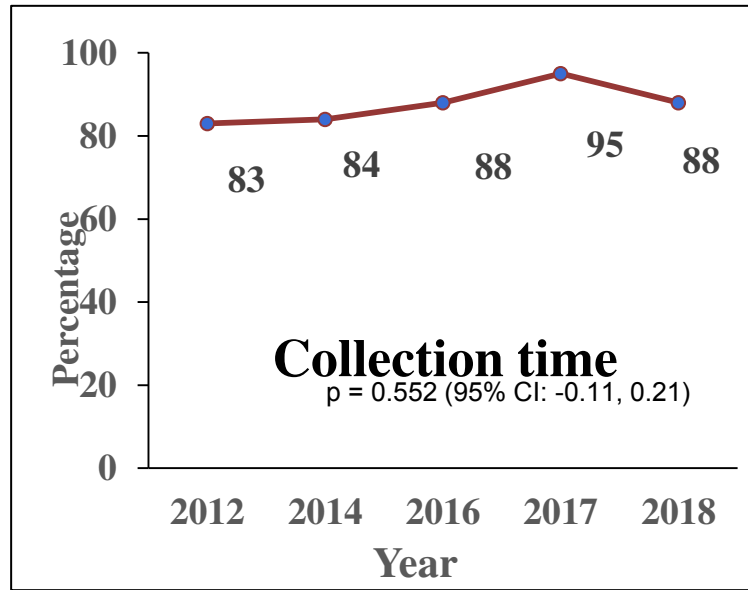
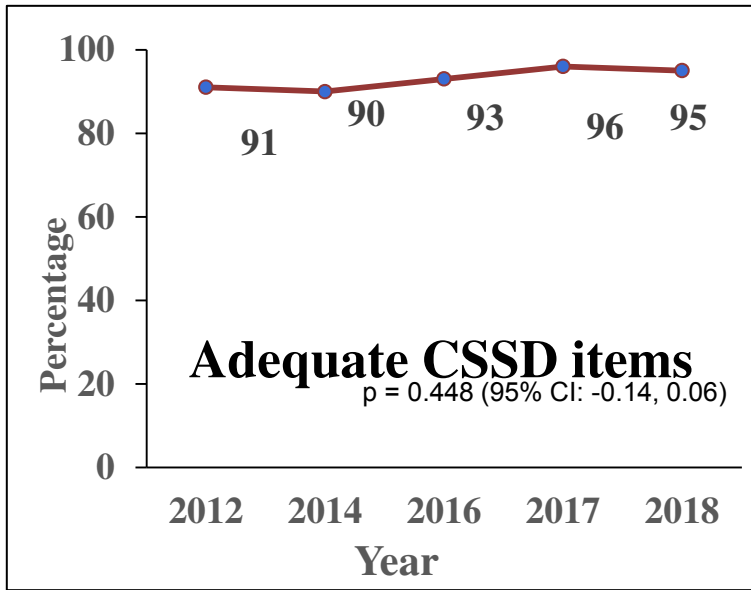


# Essential 4: Packaging

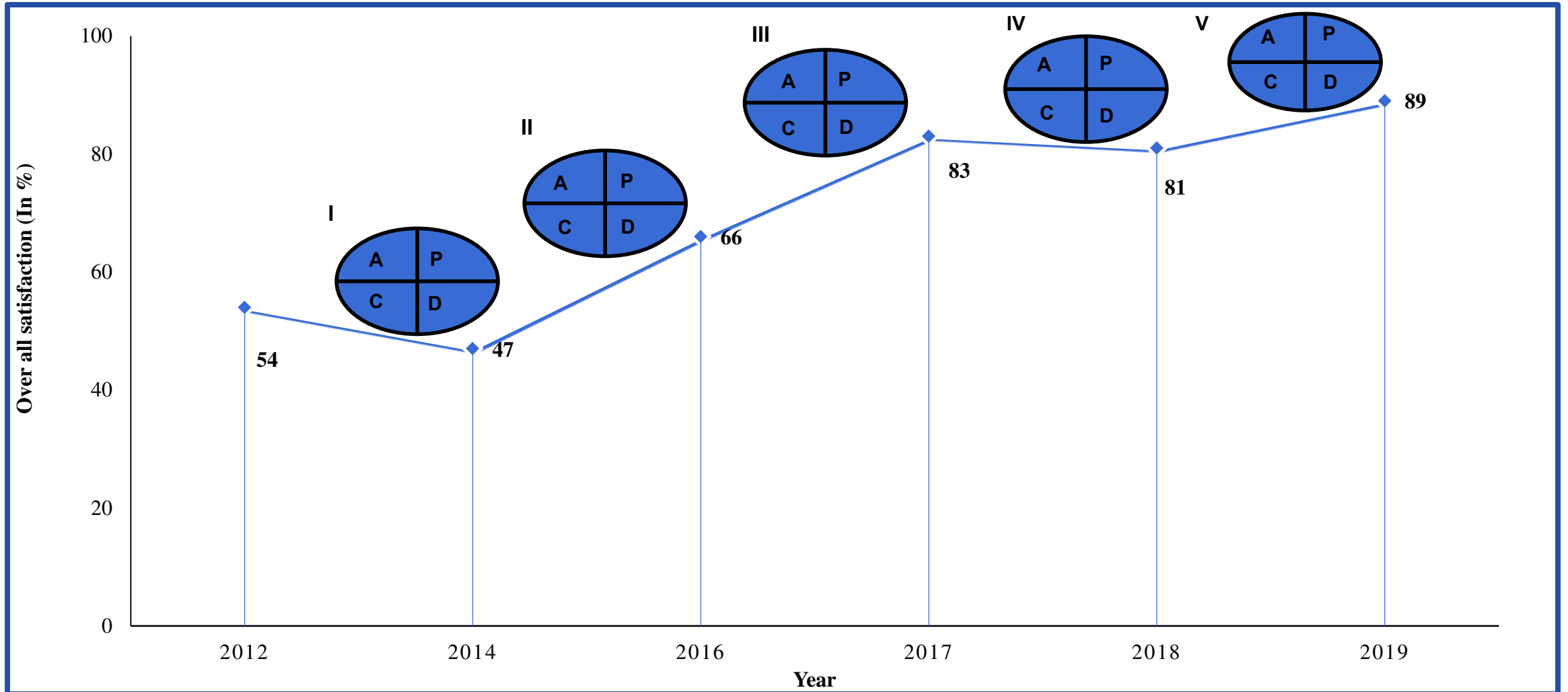


Linen packaging Vs Disposable wrapper (Poly propylene) - Better shelf life, lesser reprocessing.





# Tangible benefits



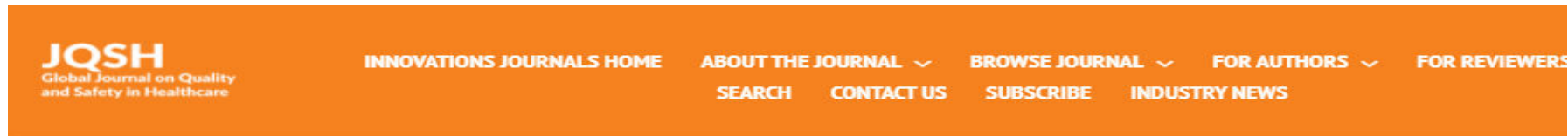
# Tangible Results

- Better work management - CSSD surrendered 6 Hospital attendants and 3 nurses (CTC – Rs.51,06,000 per year)
- In-house gauze: Rs.2.44 per piece, ready made gauze: Rs.0.77 per piece.
- Staff exposure to occupational respiratory diseases – lint and cut gauze particles minimized.

# Intangible Results

- Building a strong team
- Culture of openness in CSSD.
- Improvement measures data driven
- Other departments are motivated to understand their user perceptions and improve.

# Global Journal on Quality and Safety in Healthcare (JQSH)



Volume 4, Issue 4  
November 2021



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## Article Contents

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RESEARCH ARTICLE | JULY 12 2021

## Achieving Continuous Improvement in CSSD Management through Performance Measurements using User Satisfaction Surveys and Interventions

Lallu Joseph ; B. Rabindranath; Florence Ponnie; Premila Lee

*Global Journal on Quality and Safety in Healthcare* (2021) 4 (4): 123–130.

<https://doi.org/10.36401/JQSH-20-43> [Article history](#) 



## ABSTRACT

### Introduction

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.

### Methods

A brainstorming session was conducted with the multidisciplinary process improvement team in 2012 on the reasons for dissatisfaction with CSSD services. A baseline survey questionnaire was prepared to assess levels of dissatisfaction for key indicators and to establish target benchmarks for improvement. Charge nurses in the wards were chosen as respondents. The report was presented by the Quality Management Cell (QMC) to the steering committee in the presence of the CSSD managers. Solutions and support were offered to the team for improvement. Similar surveys were

|  |   |   |
|--|---|---|
| <p><b>PDCA - I</b><br/><b>2012- 2014</b></p>   | <ul style="list-style-type: none"> <li>• Call system to provide extra items beyond regular supplies.</li> <li>• Buffer stock enhanced in CSSD.</li> <li>• Change of route for collection of unsterile items</li> <li>• Change of delivery timing of sterile items</li> <li>• Rewash of prewashed items</li> </ul>   | <ul style="list-style-type: none"> <li>• Usage of stain remover for persistent stains</li> <li>• Strengthened process controls and additional indicators</li> <li>• Cloth packs changed to poly propylene packaging</li> <li>• Manual cutting replaced with mechanized cutter</li> <li>• Additional phone</li> </ul>  |
| <p><b>PDCA - II</b><br/><b>2014- 2016</b></p>  | <ul style="list-style-type: none"> <li>• Separate stock for mass casualty and emergencies</li> <li>• Study on pattern of need and stock of instruments increased.</li> <li>• Collection trolley numbers increased</li> <li>• Strict cleaning protocols for trolley</li> <li>• Wheels changed from nylon to heavy duty poly propylene</li> <li>• Trial trolley of aluminium alloy folded body and central rib</li> </ul> | <ul style="list-style-type: none"> <li>• Strengthened inspection of items for damages</li> <li>• Tip protectors for sharp items</li> <li>• 3D bar-coded sticker with packing date, expiry date, staff details.</li> <li>• Single use disposable packs</li> <li>• Double-checking introduced at the packing area</li> <li>• Number of dues made as a quality indicator</li> <li>• Reallocation of duties of clerical staff to address queries</li> </ul> |
| <p><b>PDCA - III</b><br/><b>2016- 2017</b></p> | <ul style="list-style-type: none"> <li>• Frequency of collection increased</li> <li>• Trolleys converted to aluminium alloy folded body with central rib</li> <li>• Reduced size of trolleys</li> <li>• Protocol for users to send damaged items separately</li> <li>• Checking of items for identity stickers before dispatch</li> </ul>   | <ul style="list-style-type: none"> <li>• Custom made sets in discussion with users</li> <li>• Checklist with items for each pack</li> <li>• Continuous training of staff on occupational health</li> <li>• In-service programs on soft skills and professional etiquettes</li> <li>• Large pre-vacuum autoclave with double door</li> <li>• Centralized compressed air for cleaning cannulised items</li> </ul>   |
| <p><b>PDCA - IV</b><br/><b>2017- 2018</b></p>  | <ul style="list-style-type: none"> <li>• Additional bearings provided to the trolleys</li> <li>• Discussion of incidents with frequent department meetings</li> <li>• Call logs for accountability and follow up</li> </ul>   | <ul style="list-style-type: none"> <li>• Elbow level heat resistant gloves, and knee level boots for staff</li> <li>• Press type sealing machines changed to automatic roll sealing</li> </ul>  |
| <p><b>PDCA - V</b><br/><b>2018- 2019</b></p>   | <ul style="list-style-type: none"> <li>• Trolleys fabricated with slots for having gloves, hand-rub</li> <li>• Yearly audiometry for all staff</li> </ul>   | <ul style="list-style-type: none"> <li>• Better quality ear muffs for staff</li> <li>• Eye wash station in CSSD</li> </ul>  |



**TEAM - Together Everyone Achieves More**