# "Study of Housekeeping Services in Tertiary Care, Government Hospital"

**A Dissertation Summary Report for**

**Post Graduate Diploma in Health and Hospital Management**

**By**


## Nidhi Bisht

**Roll No.PG/08/034**


Under the guidance of


**Dr. Col.Sajal Sen.**
**General Manager and program leader healthcare**
**ICRA Management Consulting Services.**
**(IMaCS)**

**Dr.Nitish.K. Dogra**
**Assistant Professor (Public Health)**
**IIHMR**






**International Institute of Health Management Research**
**New Delhi -11007**

**MAY, 2010**

# "Study of Housekeeping Services in Tertiary Care Government Hospital"

**A dissertation submitted in partial fulfillment of the requirements for the award of**

**Post-Graduate Diploma in Health and Hospital Management**

**By**


**Nidhi Bisht**

**under the guidance of**

**Dr. Col.Sajal Sen.**

**General Manager and program leader healthcare**

**ICRA Management Consulting Services.**

**(IMaCS)**

**Dr.Nitish.K. Dogra**

**Assistant Professor (Public Health)**

**IIHMR**






**International Institute of Health Management Research**

**New Delhi -11007**

**MAY, 2010**

# Certificate of Internship Completion

**Date……..**

**TO WHOM IT MAY CONCERN**

This is to certify that Ms. Nidhi Bisht has successfully completed her 3 months internship in our organization from February 1, 2010 to April 30, 2010. During this intern she has worked on project "**Study of Housekeeping Services in the Tertiary Care, Government Hospital"**
Under the guidance of me and my team at Doon Hospital,Dehradun..

We wish him/her good luck for his/her future assignments



(DR SAJAL SEN)

**General Manager and program leader healthcare**

**ICRA Management Consulting Services.**

**(IMaCS)**

# Certificate of Approval

The following dissertation titled "**Study of Housekeeping Services in Tertiary Care, Government Hospital**" is hereby approved as a certified study in management carried out and presented in a manner satisfactory to warrant its acceptance as a prerequisite for the award of **Post- Graduate Diploma in Health and Hospital Management** for which it has been submitted. It is understood that by this approval the undersigned do not necessarily endorse or approve any statement made, opinion expressed or conclusion drawn therein but approve the dissertation only for the purpose it is submitted.

Dissertation Examination Committee for evaluation of dissertation

| Name | Signature |
| --- | --- |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |

# Certificate from Dissertation Advisory Committee

This is to certify that **Ms. Nidhi Bisht**, a participant of the **Post- Graduate Diploma in Health and Hospital Management**, has worked under our guidance and supervision. She is submitting this dissertation titled "Study of Housekeeping Services in Tertiary Care, Government Hospital.**,** in partial fulfillment of the requirements for the award of the **Post- Graduate Diploma in Health and Hospital Management**.

This dissertation has the requisite standard and to the best of our knowledge no part of it has been reproduced from any other dissertation, monograph, report or book.

(DR SAJAL SEN)

**Dr. Col.Sajal Sen.**
**General Manager and program leader healthcare**
**ICRA Management Consulting Services.**
**(IMaCS)**

**Dr.Nitish.K. Dogra**
**Assistant Professor (Public Health)**
**IIHMR**

# ABSTRACT

A time motion study was conducted in the tertiary care hospital. Before this a patient satisfaction survey was done among the service providers and recipient's .A Sample size of 60 was taken. The sample was asked 10 questions regarding the level of satisfaction and cleanliness in regards to the work done by the housekeeping staff. the data interpreted showed that the satisfaction level was satisfactory among the service providers and recepients.To track the unsatisfactory percentage it was decided to carry on time motion study .The systematic observation was done before the study to understand the activities been done by each worker. The process chart was made to note the activities preceding the day respective of the work the housekeeping staff in a day. Total 1 activities were identified of each worker. The sample of 16 people was taken and observed for three days on the processes been already observed. The start time and end time of each worker was noted respectively. After the data collection,the standard time for each activity was taken .The standard time was taken to analyse and the activities were divided into core and non-core activities. The core activities accounted for the activities which are important to carry the daily work proceeses and the non-core activities account for the activities which contributes in time wastage and inefficiency in work. The non-core activities were then taken and critical analysis of the same was done and recommendations and plan of action to reduce the time and making the work process efficient is suggested in the study. From the above study, it was derived that out of the 20 elemental activity processes, 6 were the core activities that take maximum of the time of the workers. The Non- core activities are the activities are also 6 out of which the three specific activities, of which alternative options if followed could help in reducing /eliminating the extra time taken. This would fulfill the objective of the study by eliminate the waste and increasing the efficiency of the workers. Further, after the implementation of the alternatives or recommendations, again a time study would be conducted to note the changes in the work processes.

# ACKNOWLEDGEMENT

It gives me pleasure to remember the moments when my teachers and batch mates were extending their support and guidance to me. I feel highly fortunate too. I express my deep sense of gratitude and appreciation to all of them at this moment.

At the outset I feel great pleasure to express my regards to Dr.Nitish Dogra, Associate professor in IIHMR, New Delhi for his incessant boosting, inspiring encouragement, patience and ever readiness to help. It is my privilege to work under his dynamic Supervision.

I am sincerely thank full to Dr. Col. Sajal Sen, General Manager and Program Leader Healthcare,IMaCS my external guide who provided me a caring and supporting and throughout my training period.

I am thank full to the IIHMR,, New Delhi for having provided me with the invaluable learning experience..

I acknowledge the moral support and encouragement provided by my friends at the every stage of my study.

# TABLE OF CONTENTS

**Cover page……1**

**Cover page 2 ……..2**

**Internship Certificates……3-5**

**Abstract…….....6**

**Acknowledgement…….7**

**PART -1 INTERNSHIP REPORT……11**

**1.1 Introduction……13-30**

**1.2 Tasks……31-35**

**PART-2 Dissertation Report……36**

**CHAPTER -1 INTRODUCTION**

**1.1 Background of study……38**

**1.2 Problem Statement……..39**

**1.3 Research Statement…….39**

**1.4 Objective of study……40**

**1.5 Scope of study……..40**

**1.6 Benefits from this study……..40**

**1.7 Literature Review……....41**

**CHAPTER 2**

**RESEARCH METHODOLOGY…….41-45**

**2.1 Methodology Framework…….....46**

**2.2 Research Design…….46**

**2.3 Study tools :…….....47**

**2.4 Basic Procedure for Research……47**

**2.5 Data Collection…….48**

**2.6 Data Collection Time-……..48**

**2.7 Data Collection Equipment-……48**

**2.8 Statistical Tool used-……48**

**2.9 Steps for Time Study……49**

**2.10 Symbols for activities…….....50**

**2.11 Calculation Formulae……50**

**CHAPTER 3……51**

**RESULTS AND FINDINGS**

**3. Data Analysis**

**3.1 Satisfaction Survey ……..**

***Figure 3.1(A - Are you satisfied by the hospital environment …….....52***

***Figure 3.1(B ) Grading level of cleanliness in hospital…….....53***

***Figure 3.1(C) Satisfaction level regarding the cleanliness and sanitation of toilets....54***

***Figure 3.1 (D) Ward looks clean and tidy ……...55***

***Figure 3.1( E )Are all the bins cleaned and emptied regularly……...56***

***Figure 3.1 F Does the staff remain on call every time during the shift…….....57***

***Figure 3.1 G Depicting the number of times they carry the cleaning process in a particulararea…….....58***

***Figure 3.1( H) Satisfaction by the response time of housekeeping people on call duty……...59***

***Figure 3.1 (I) Satisfaction with the behavior of the housekeeping staff…….....60***

***Figure 3.1(J) Satisfaction level regarding the overall cleaning practices and attitude of the housekeeping people in the hospital……..……61***

**3.2 Process flow chart……..62**

**3.3 Time Motion study…….....63**

***Table 3.3 Depicting the standard time calculated for each process activity. …….64***

***Figure 3.3 (A ) Depicting the calculated standard time for the activities recorded...65***

***Figure 3.3 (B) Depicting the process i.e. Attendance in morning ……....66***

***Figure 3.3 (C) Depicting the process of duty assigned by the supervisor……67***

***Figure 3.3 (D) Depicting the time taken to collect their respective broom and mop from the janitor's Room ……..68***

***Figure 3.3( E )Depicts time taken by each worker to go to their respective work area.. ……..69***

***Figure 3.3( F) Depicts the time taken for sweeping the floor of the area……....70***

***Figure 3.3 (G) Depicts the time taken to collect the mop and washes it…….....71***

***Figure 3.3 (H) Depicts the time taken to mop the floor of the work area……....72***

***Figure 3.3 (I) Depicts the time taken to clean the toilets in the hospital……73***

***Figure 3.3(J) Depicts the time taken by worker to have tea……..74***

***Figure 3.3 (K) depicts the waiting time for the bio-medical in-charge for getting the register signed……75***

***Figure 3.3 (L) Depicts the time taken for mopping the floor before the CMS round76***

***Figure 3.3 (M) Depicts the time taken for cleaning of toilets……..77***

***Figure 3.3 (N) Depicts the time taken for moping the floor……78***

***Figure 3.3 (O) Depicts the time taken by the housekeeping staff to go to the house keeping office……79***

***Figure 3.3 (P) Depicts that the time taken by the housekeeping staff to keep the broom/ mop in janitor room at the end of shift……80***

**CHAPTER -4**

**CONCLUSION AND RECOMMENDATIONS……81**

***TABLE 4.1 Depicts the core and non-core activities in the whole process evaluation of the services……82***

**4.2 CRITICAL ANALYSIS –……..82**

**4.1.2. Duties assigned by the supervisor-……83**

**3. Bio-Medical Waste collection time-…….....83**

**CHAPTER 5 REFERENCES……..85**

**CHAPTER 6 ANNEXURES……...88**

# *PART -1*

# *INTERNSHIP REPORT*

# *Government Doon Male Hospital*



# Hospital Fact Sheet

| | | | |
|---|---|---|---|
| 1 | Name of the Institution | : | Government Doon Hospital (Male) |
| | | | |
| 2 | Date of establishment | : | 1854 |
| | | | |
| 3 | Size of hospital (no. of inpatient beds) | : | 252 (sanctioned) |
| | | | |
| 4 | Scope of services | : | Large size general hospital |
| | | | |
| 5 | Name of owner entity | : | State Government of Uttarakhand |
| | | | |
| 6 | Status of owner entity | : | State Government |
| | | | |
| 7 | Chief Medical Superintendent | : | Dr. R K Pant |
| | | | |
| 8 | Registered office / address | : | Government Doon Hospital, Dehradun, Uttarakhand |

## Background of the hospital

The Doon Hospital began as a small dispensary in 1854, but soon, because of the increased demand for in-patient care, a few hospital beds began to be added to it. In 1890, the first major extension of wards was achieved, and in 1910 an operation room was established in the complex.

The decision to have an improved hospital in place came from the recommendations made by the then Chairman of the District Board, Major Shamsher B. Singh. The task of preparing the blue print for the new hospital complex fell upon Lt. Col. C H Barber, DSO and IMS who had come to Dehradun as Civil Surgeon. Lt. Col. C H Barber made a rough plan on the basis of which he estimated the cost of the new hospital at Rs. 3.50 lac. As the District Board was unable to undertake such a heavy expenditure, it decided to sell the existing building and utilize the sale proceeds for constructing the new hospital.

Official and private estimates were made and Rs. 1.00 lac was determined as a fair and proper values for the then existing building. This was by no means sufficient and a request was made to its Chairman for help. The Chairman, Municipal Board realized the urgent necessity of the hospital, but owing to the Baldi Nadi Water Supply Scheme, for which the Municipal Board was committed, he was unable to offer any financial help.

As the need was a genuine one and it was the public that suffered most for want of a well equipped Hospital, it was thought advisable to approach the general public through an appropriate forum. Lt. Col. Barber then met Mr. G. Flowers, ICS, and the then Superintendent of Doon, who very kindly agreed to support the scheme.

A public meeting was called at the A.P. Mission School Hall on 27th March, 1926. Lt. Col. Barber explained the scheme and Mr. Flowers appealed for funds for the Hospital and also very kindly promised to recommend the scheme to the Government on the condition that at least Rs. 1.00 lac was realized by public donations. The public, beyond all expectations, realizing the urgent need of the Hospital, promised to subscribe Rs. 1,19,000/- and it was hoped that by the time the list closed, the amount realized and placed to the credit of the New Hospital amounted to Rs. 1,10,000/-. Mr. Flowers in his letter No. 548/14-2-1927 recommended to the Commissioner, Meerut Division to approach the Government for a grant of Rs. 1.50 lac for the

Hospital building, presently identified as the Old Building was completed in 1932 in Art Deco Style

Swami Vivekananda had got Akandananda who was a accompanying him treated in Doon Hospital for three weeks when he fell ill with Bronchitis. Swami Vivekananda described that the Doon Hospital looks from a distance as a Bungalow of a residence of the English

Uttarakhand the 27th State of the Republic of India was formed on 9th Nov. 2000

Dehradun District has a population of 12 Lakhs and Dehradun City is functioning as the State Capital. This City has a rich Heritage of Buildings and huge Campuses

Due to unplanned additions during the course of time the Doon Hospital acquired a crowded unattractive appearance. Some of the buildings had become dilapidated. There was dissatisfying conditions in the Hospital. Drug addicts and pimps used to invade in to the Hospital Campus

The erstwhile Health Development Project of the undivided Uttar Pradesh after the formation of Uttaranchal, the Uttaranchal Health Systems Development Project was launched in the month of July 2001. With this the World Bank Funding came to this State.

Being the Main Hospital of the newly formed State with its State Capital in Dehradun a decision was taken to upgrade this Hospital and to make this the Premier Hospital of this State. Hon'ble Chief Minister laid the Foundation Stone on 11th May 2003.

For improving the functioning, performance, efficiency and quality of services in the Hospitals, Govt. of Uttarakhand granted Autonomy to 33 Hospitals including Doon Hospital vide a G.O. in March 2003. This innovative orders were issued under the able guidance of Shri Alok Kumar Jain (IAS), the then Secretary of Health to the Govt. Uttaranchal. Government kept the Strategic Control, allowing the Operational and Managerial aspects to be handled at the facility level.

Under the guidance of Shri Alok Kumar Jain GO's were issued for.

- Collection of Users Charges- Facility retaining 100% of the collection.
- One Line Budget.

- Outsourcing of
    - Hospital Cleanliness.
    - Laundry.
    - Food for Patients.

The Outsourcing has brought increased efficiency and Autonomy has given the stake holders to take independent decisions about its finances and day to day administration and not being tied down by bureaucratic and hierarchical constraints that are usually typical of Govt. organization

Dr. Rakesh Kumar a Post Graduate in Medicine from AIIMS and an IAS officer who also had a tenure in Unicef used his rich experience as the Project Director of UAHSDP and was instrumental in planning this up gradation

1. A New three Storey Building.
    - Ground floor 24 OPD Rooms with toilets and waiting halls.
    - First & Second floors the wing on the right side 54 private rooms with attached bath and toilet.
    - First & Second floors the wing on the left side Two General Wards 44 additional beds created.

2. A New Two Storey Administrative Block.

3. A New Building for Reception & Registration

4. A New Building for Kitchen

5. A New Building for Mortuary

6. The Old Building Renovated
    - Two New Operation Theatres made.
    - An ICU with 8 beds.
    - An ICCU with 8 beds.

- An Air Conditioned Burn Ward with 14 beds.
- Emergency OPD with a Trauma Unit.
- All Old General Wards, Bathrooms and Circulation Areas Completely renovated

7. Landscaping--A new two storey building constructed as a Regional Dagnostic Centre.

The execution of the construction was the most difficult phase of the up gradation. The construction and renovation was being under taken in a functioning hospital with the Out Patients and In Patients continuing to be treated. There was a cap on the funds for construction activity from the World Bank. It is during this phase that Shri S.K. Das IAS appeared in the scene as a Visionary in the form of Principal Secretary of Health. The one universal statement made by the Politicians, Senior Administrators, Professionals, National and International and the Public is that the transformation which has happened in the Doon Govt. Hospital is unimaginable. If one person is to be given the credit for the turn around it will be Shri S.K. Das

Some of the small buildings constructed earlier had to be removed for the smooth flow of patients and patient carrying vehicles inside the hospital. Here the importance of political will in a development played its big role. Hon'ble Shri B.C. Khanduri when requested though being then in the opposition party magnanimously gave permission for two such buildings to be removed for which he had laid the foundation and done the inauguration. His benevolence brought ambience to the hospital.

The Inauguration of the New Building and the Renovated Old Building was done on 9th Sept. 2005 by the Hon'ble Chief Minister who dedicated this to the public.

The Union Health Minister and the Union Health Secretary visited the hospital and commended the progress that could be achieved in a Govt. hospital. The Central Govt detailed the Medical Superintendents of RML Hospital, Safdurjung Hospital and Lady Hardinge College on 7th April 2006 to visit Doon Hospital to appreciate this progress. The Additional Secretary of Health from the Centre accompanied them

With this up gradation of the hospital it has become possible to increase the bed strength to 312.In certain department's treatment right up to tertiary care has become possible. There was a Quantum jump in the quality & quantity of the service provided.

When the proposal was received from National Rural Health Mission (NRHM) Mrs. Manisha Panwar, IAS, then secretary Medical &Health took the opportunity to propose Doon Hospital for getting the ISO 9001:2000 Certification. With this systems could be placed to ISO requirements, increasing the patient satisfaction and further improve Doon Hospital for which there is an urgent need and scope.

.

**Key Strengths**

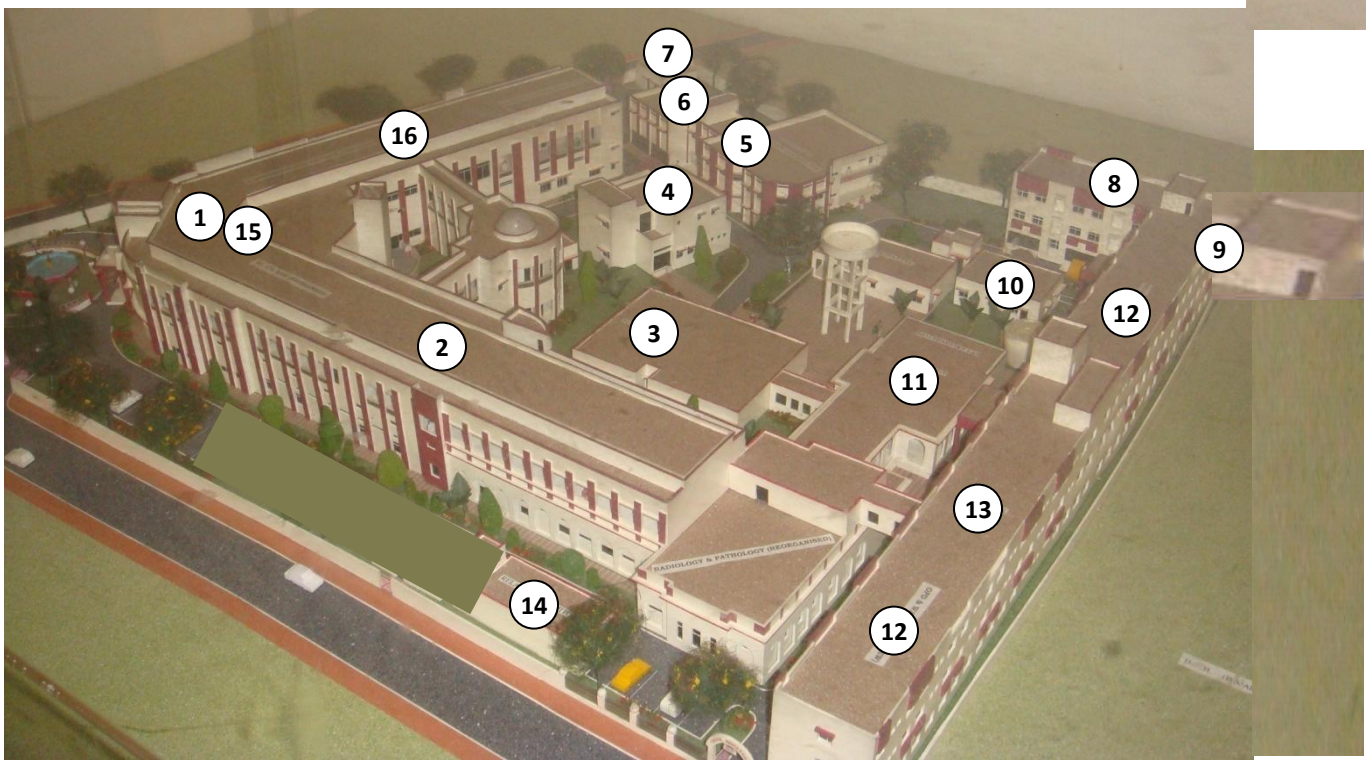
- Strong political will appreciable in governance
- Pleasing hospital environment
- High patient satisfaction levels
- Approachable and proactive Senior Management of hospital
- The "will" to improvise service delivery
- Well known, highly experienced and trusted group of doctors
- Growing operational statistics

**Key Opportunities**

- Initiatives towards public private partnership – proposed utilization of the MRI after office hours of hospital by private players in the city to ensure optimal utilization of high cost equipment
- Role of the Chikitsa Prabandhan Samiti (CPS) in the generation of funds for the hospital
- Newly formed State of Uttarakhand – thus more opportunity to improvise

## Hospital Layout

The hospital is a Y-shaped building that is zonally laid out to ensure optimality of function. The overall layout presented below the key areas in this block and their functional relation with others.




| | |
|---|---|
| 1 | Reception and Enquiry and main entrance to hospital |
| 2 | Old Block—wards |
| 3 | Blood Bank |
| 4 | Eye Block |
| 5 | Administration Block and Main Store |
| 6 | Ambulance Parking |

| | |
|---|---|
| 7 | Mortuary |
| 8 | Dispensary |
| 9 | Radio diagnostics and Dialysis |
| 10 | Kitchen |
| 11 | Pathology |
| 12 | OPD and Ward Block (new) |
| 13 | New Block |
| 14 | Registration area |
| 15 | Operation Theatre |
| 16 | Emergency and Orthopaedic OPD |

## Patient Care Services at the hospital

The hospital offers preventive, promotive, curative services through its secondary care facilities in the clinical, support and utility areas as has been detailed below.

| | Clinical Services | Clinical Sub-Services | Support Services | Utility Services |
|---|---|---|---|---|
| **In House** | General medicine | Nephrology<br>Cardiology | Laboratory | Theatre Sterile Supply unit |
| | | Neurology | Medical records | Medical Gases |
| | | | Medical Stores | |

| | | | | |
|---|---|---|---|---|
| | | | and Pharmacy | |
| | General surgery | Neurosurgery | Imaging | |
| | | Urology | Transfusion Medicine | |
| | | Plastic Surgery | | |
| | | | | |
| | Dermatology | | | |
| | Psychiatry | | | |
| | Pediatrics | | | |
| | Ophthalmology | | | |
| | ENT surgery | | | |
| | Orthopedic | | | |
| | Dentistry | | | |
| | Anesthesiology | | | |
| **Out sourced** | | | | Dietary |
| | | | | Laundry |
| | | | | Housekeeping |
| | | | | Security |

However, the hospital does not offer Radio-therapy services as defined in the IPHS standards for 300-500 bedded facility. This has been attributed to service relocation plan of the government to unify the services of the three government facilities in city of Dehradun including GDH. With this unification there is a plan to shift the super-specialties to the Coronation Hospital and retain the General Specialties in GDH, thereby increasing the bed utilisation at GDH for broad

specialties. Additional land adjoining to the Doon Hospital has now been transferred from PWD. New Building that is in the planning stage would be used to increase the bed strength, add new specialties, and upgrade existing specialties.

| Imaging | Cardiology |
|---|---|
| **Digital X ray** | ECG |
| **X Ray-300mA, 500mA, 100mA** | ECHO cardiography |
| **Ultrasound** | TMT |
| **OPG** | |
| **CT scan** | |
| **Mammography** | |
| **Color Doppler** | |
| **MRI** | |

## Health Programmes

The Government Doon Hospital supports various National Health Programs such as:

| | |
|---|---|
| National IDD Control Programme | National Blindness Control Programme |
| National AIDS Control Programme | National Family Welfare Programme |
| Birth Death Registration Programme | Immunization Programme |
| Integrated Disease Surveillance Project | Information Education Communication |
| National Cancer Control Program | |

In addition, the Latika Roy Memorial Foundation present at the Government Doon Hospital provides education and therapy for children with disabilities, supports their families, and creates awareness and advocates for the disabled in the community. At the Government Doon Hospital, the Foundation looks after dissemination of information related to disabilities, and provides guidance to eligible persons on procedures to receive disability certificate.




The SmileTrain project is also in operation at the Government Doon Hospital. This initiative focuses on offering free reconstructive surgical services to children with cleft lip and palate defects who are unable to afford such care. At the Government Doon Hospital, a "Muskaan" ward (ward 10) has been designated for the SmileTrain project patients to ensure maximum and comfortable coverage of most patients with similar defects.

The hospital also has designated beds to treat the destitute and unattended patients, who are neglected by the community, who are nursed by a voluntary worker under the guidance of the doctors.

## Out-Patient (OP) Services

All OP clinics at the Government Doon Hospital are on the ground floor of the OPD Block. The OP department operates in one shift from morning till afternoon, for six days in a week. Patients who are advised investigations by consultants are required to submit samples at the laboratory

(lab), or get imaging tests done at the imaging centre during OPD hours. The lab as well as the imaging centre is situated within the hospital premises. In general, the space available at the Government Doon Hospital in the OP waiting area is insufficient for the daily attendance of patients. The absence of an appointment scheduling system, absence of Class IV staff outside consultation rooms and the lack of displays on health topics to hold the attention of waiting patients lead to overcrowding in the consultation rooms and the corridors. Most of the specialists handle more than 150 patients every day. A patient visiting the OP for consultation currently has to wait somewhere between 2.5-3.5 hours from the time of registration to the receipt of consultation. However, most patients are ready to bear with the waiting time as they understand that clinicians are overcrowded and trust the care offered in the hospital.

## In Patient (IP) Service

In line with the State Government's policies, Doon hospital is typically basic in terms of internal furnishing but fully functional. The general cleanliness within the wards at the GDH is adequate.



The wards are open type with beds are placed next to each other. It is likely that the relatively high Average Length of Stay (ALOS) at the Government Doon Hospital is in part linked to the hospital's open ward designs, besides the typically low hygiene levels of patients visiting the hospital. Also, most wards remain overcrowded with

attendants. There is also no data available on the hospital acquired infection (HAI) rate in the GDH ward areas, and neither does the GDH conduct environment surveys to capture HAI rates in other patient care areas. The distribution of beds in the various wards of GDH is as below:

| Ward No. | Name of the Ward | No. of Beds |
|---|---|---|
| **1** | Trauma Ward | 14 |
| **2** | Emergency Ward I & II | 29 |
| **3** | Female Orthopedic Ward | 11 |
| **4** | Male Orthopedic Ward | 39 |
| **5** | Children Ward | 16 |
| **6** | Paying Ward | 6 |
| **7** | Burn Ward | 13 |
| **8** | Male Surgical Ward | 29 |
| **9** | Intensive Coronary care unit (ICCU) | 8 |
| **10** | Muskaan Ward (cleft lip) | 8 |
| **11** | Female Surgical Ward | 22 |
| **12** | Female Medicine Ward | 30 |
| **13** | Private Ward (1$^{st}$ floor) | 10 |
| **14** | Male Medicine Ward | 30 |
| **15** | Private Ward (2$^{nd}$ Floor) | 10 |

| | | |
|---|---|---|
| **16** | Eye Ward | 20 |
| **17** | VIP Ward | 2 |
| | **Total** | **297** |

It is evident from the above table that while there are 252 sanctioned beds, the hospital has beds more than the scheduled sanction. GDH has separate wards for males and females as is required for open wards and is culturally acceptable among the population that visits the hospital. There are semi-private and private wards for the patients who can afford to pay, but even these are subsidised. Unlike the OP, the wards at the GDH are spacious.

GDH as per its mandate has to admit all patients that require admission, which has contributed to the addition of beds in the wards; however, waiting period for surgical inpatients depends on the availability of operation theatre (OT) and beds in the wards.

Once a patient is adviced admission by the doctor, the patient is assigned a new IP number different from the OP number at the emergency and admits the patient with the right ward based on the illness and the availability of beds in that ward. Similar is the case when a patient comes to the hospital directly to the emergency. Once assigned a bed, the patient reports to the nurse on duty in the ward concerned and a patient Bed Head Ticket (BHT) is prepared in the ward for further treatment.

## Operation Theatre

GDH has a single OT complex with 5 operation rooms, of which only two are currently functioning, leading to a waiting period of 6 months for an elective procedure. The OTs have not been designed on the principles of zonalisation (clean and protective areas are not well segregated) and there are no separate recovery and pre-anaesthetic areas, as depicted in the picture below. Moreover, the OTs do not have a proper ventilation system (which lets untreated

outside air inside the sterile areas), and there is no system to ensure partial zonalisation in the OTs. Further, the OT tables are old, the scrub area has regular taps, and can lead to hand contamination – sensor or foot taps would be ideal. Also, the OT design is such that there is no separate corridor for disposals to be taken out. However, even as GDH's OTs has structural and systemic shortcomings, the hospital's post-surgical mortality rate is estimated by the specialists to be relatively low level at around 2%.

## Emergency

The GDH operates a 24-hour Type-II emergency service and receives around 100 emergencies a day. The GDH Emergency block is easily accessible from the hospital entrance, wherein the patients are stabilised, treated and shifted to the relevant wards depending on the availability of beds if long-term treatment is required. If a bed is not available, the patient is admitted in the emergency ward itself. The Government Doon Hospital has five ambulances manned with five drivers.

## Intensive Care unit

While GDH operates a 294 bedded large general hospital, there is no infrastructural and human resource support to operate an Intensive Care unit (ICU) to handle various kinds of medical emergencies, excepting an ICCU that operates under the guidance of Cardiologist for handling cardiac emergencies.

## Transfusion Medicine

The GDH operates an in-house blood bank that collects annually around 4,618 units (CY 2007) of blood and issues 4,584 units of whole blood. While, the blood bank has the license of an in-house service, it operates as a regional Blood Transfusion Centre organising camps and supplying to the entire region, including private facilities. In 2007, 13 blood donation camps were organized, and 312 units of blood were collected through the same.

The Government Doon Hospital's blood bank follows the protocols laid down by the National and State Blood Transfusion Councils for the selection of donors, and for the collection, processing, storage and issue of blood to ensure blood safety. Despite having a transfusion committee, GDH's blood bank has not been able to enforce rational use of blood owing to the lack of component separation unit and relatively reduced awareness among clinical staff on the

same. The department also undertakes CD4 testing for the HIV positive patients as a part of the VCTC programme.

## Laboratory Services

The GDH has an in-house laboratory service that caters to OP as well as IP in the wards. The lab operates from 8am to 2pm, and sample collection is done in the morning hours. Since there is no centralized billing system at the GDH, owing to which test charges are collected by the technicians within the lab before they move on to putting the tests, which is a misuse of the skilled resources. While the lab does not have documented protocols to ensure internal quality control systems, it participates with CMC, Vellore in the external QC program on a regular basis.

## Imaging Services

The radio-diagnostic centre at the GDH .The hospital has recently acquired a MRI machine and has plans to move ahead offering this service on a public private partnership (PPP) mode to ensure optimal utilisation of the machine. The cardiac testing facilities available at the Government Doon Hospital include ECG, ECHO and TMT.

## Engineering Service

The GDH's engineering services are maintained by the Public Works Department (PWD) of the State Government of Uttarakhand.

Currently, most equipment at GDH are utilised at 60%. However, the hospital has plans to operate the same on a PPP mode to improve utilisation to 80% and generate revenues to fund the growing needs of the hospital.

## Medical Store Supply Services

Medical supplies value chain at GDH involves the pharmacy, the sub-store and the main store. Supplies at GDH are procured from the rate contracts available with the State govt, ESIC, Central govt or public sector undertakings. There is also provision to make stock available through local purchases for urgent and not readily available items, on the rates fixed by the govts.

## Governance

The organisation structure at is typical to that in a District hospital.

The Chief Medical Superintendent (CMS) serves as the medical and administrative head of GDH and is supported by a Hospital Administrator on deputation. The nursing function is headed by a Chief Matron, who is supported by Grade II matrons.

Resource planning at GDH is largely guided by the policies of the State government. For instance, recruitment at various levels has to be in line with the number of sanctioned posts and other guidelines. Similarly, material procurement is mostly through rate contracts of the govt. Thus, the management's role in resource planning is mostly limited to sending requests to the next level of authority and follow-up, managing purchases within its control, and managing the hospital's operations with the resources available, which is not a small challenge.(12)

## 1.2 Tasks/Duties performed

As a contractual consultant for IMACS the work allotted to me at Doon Hospital,Dehradun included the following :

As the hospital has received the ISO certificate the hospital is in the hand holding phase as per the contract with NHSRC new Delhi. Hand holding phase may be defined as the time period after the certification process is over the Consultant at base assists the Medical Superintendent of the hospital in the quality control activities which were initiated during the phase of ISO Certification .

The main activities to be performed includes the following :

1. Documentation and Data Management
2. Control of quality records
3. Control of Non- conforming hospital services
4. Internal quality audit
5. Corrective and preventive action management for the non – conformities found during internal audit.
6. Data acquisition ,analysis and continual improvement in hospital performance.
7. Hospital performance management review meetings.

**1. DOCUMENTATION AND DATA MANAGEMENT:**

**Purpose:**

To establish a procedure that all documents are documented, numbered and managed in a controlled manner.

**Scope:**

The scope of this procedure covers codification and proper documentation of the used planned documents within the scope of Quality System Manual established in the hospital.

## 2. CONTROL OF QUALITY RECORDS:

**Purpose:**

To establish a procedure that all documents are issued modified, changed and withdrawn in a controlled manner.

**Scope:**

The scope of this procedure covers issue control of all documents, retention & disposal of documents used in the laid down Quality System Manual established in the hospital.

## 3. CONTROL OF NON-CONFORMING HOSPITAL SERVICE

**Purpose:**

To establish a procedure that management system to deal with hospital operations is understood, established, implemented & monitored.

**Scope:**

The scope of this section of manual covers the non conformity of service of the hospital.

## 4. INTERNAL QUALITY AUDIT MANAGEMENT

**Purpose:**

To establish a procedure to ensure that internal audits are performed to verify the continuing adequacy and suitability of Quality Management System in the hospital.

**Scope:**

The scope of this standard operating procedure includes departments/ functions / under established quality management systems.

A common **Quarterly Internal Audit Schedule** is prepared covering **Quality management system** specific documents & activities and distributed by MR at the beginning of the quarter to enable all auditees / auditors to schedule their activities to undergo the planned audit.

**CONDUCTING INTERNAL AUDITS:**

Non-conformances observed vis-à-vis standard operating procedures; STPs/ STGs, Formats & Records are reported on System Non-conformity Report by the internal auditor(s). A comprehensive Internal Quality Audit Checklist is also used by the respective internal quality auditor for effective compliance verification.

All observations on improvement areas as well as comments on adequacy of procedures and other conformances / commendations are reported through an IQA Summery Report.

**INTERNAL AUDIT REPORTING MANAGEMENT**

NCR's are distributed as follows:

- One copy to the auditee for monitoring corrective action.
- One copy to the auditor for follow-up on corrective action
- One copy to the management representatives for crosschecking actions subsequent to the audit conducted.

b) Corrective and Preventive Action on observed non-conformance is planned by the auditee and he/she is responsible for the completion of the planned corrective / preventive action.

c) The internal auditor verifies satisfactory completion of planned corrective / preventive action as per target dates given by the auditee. M.R finally verifies closure of NCRs on sample basis & formally closes all NCRs after he / she cross checks the completion of corrective action against those sample NCRs by the internal auditor and auditee.

d) Internal Audit Report, details of NCRs and Corrective Actions thereafter are compiled by M.R and presented to the MRM on this report. The management reviews the occurrences of the non-conformance in every function and the actions taken thereupon to prevent its re-occurrence.

e) The management views all non-conformances not closed by the target dates extremely seriously. Management representatives verify the closure of each NCR against target date & evaluate the status before MRM. In case of any open NCR reported during MRM, respective HODs take suitable action on a case-to–case basis.

## 5. CORRECTIVE AND PREVENTIVE ACTION MANAGEMENT:

**Purpose:**

To establish a procedure for handling non-compliances emanating from various activities through a structured corrective action management.

**Scope:**

This standard operating procedure is applicable to all non-compliances/ non-conformities evolved under Quality Management system in Hospital are:-

- Internal audits
- Patient Satisfaction Surveys
- Patient Suggestion/Feedbacks
- Medical Audit
- Mortality Audit
- Prescription Audit
- Death Audits
- Medical Record audit

## 6. DATA ACQUISITION, ANALYSES AND CONTINUAL IMPROVEMENT IN HOSPITAL PERFORMANCE:

**Purpose:**

To establish a procedure to acquire data from various areas of activities towards ensuring continual improvement in all aspects of the hospital performance in line with the laid down objectives.

**Scope:**

The scope of this procedure covers all activities conducted in the hospital.

## 7. HOSPITAL PERFORMANCE MANAGEMENT REVIEW:

**Purpose:**

To establish a procedure of Management Review to monitor the performance of the hospital on a continuous basis

**Scope:**

The scope of this procedure covers following management review meetings:

a. Hospital Management (QMS) Committee Review Meeting

b. Rogi Kalyan Samiti (RKS) Review Meeting

c. Hospital Infection Control Management Committee Review Meeting

# *PART 2*

# *DISSERTATION REPORT*

# *CHAPTER -1*

# *INTRODUCTION*

# 1 Introduction

## Streamlining the Existing Outsourced Housekeeping Services in Tertiary Care, Government Hospital.

The purpose of this research is to improve and streamline the processes of Housekeeping services in tertiary care hospital.. The study is undertaken basically to understand the process followed, scope of services, identifying the various systems which are placed for the delivery of health services. Daily monitoring to be done for the same and evaluated weekly and control measures would be taken after identifying the bottle neck and providing the remedial mechanism including the road map to be followed for better service delivery. This research used Satisfaction survey amongst service provider and service recipients, systematic observation, process chart, and time –motion study as research methodology .The data was collected and analyzed using statistical tools to come to a conclusion and then was used for improvement of work process was executed by eliminating and combining of work processes,which reduces the extra time and number of processes and hence streamlining of housekeeping services in the hospital.

## 1.1 Background of study

The housekeeping services had its origin in the hotel industry. Later the concept of housekeeping got incorporated as a hospital service. There are, however, differences in concept and practice of housekeeping activities in hospital and hotels. Control and prevention of hospital infection is one of the most vital functions of hospital housekeeping, whereas, in a hotel, the aesthetics receive the maximum emphasis. The hospital housekeeping services comprise of activities related to cleanliness, maintenance of hospital environment and good sanitation services for keeping the premises free from pollution**.**

A good housekeeping service is an asset which no hospital can afford to neglect. In a free market economy, attractively of a hospital depends to a great extent on the services provided in terms of good physical environment and facilities of personal comfort. Hospital housekeeping is an activity upon which all health providing services of the hospital depend. An appropriate

housekeeping service can reduce man-hours, reduce costs and raise sanitation levels (1). L. Broome (2) has summed up comprehensively the functions of the housekeeping services as, "Anything that seriously has to do with housekeeping is of social and economic consequence to everybody. In fact housekeeping is an important variable in ensuring Quality Assurance in hospitals". Therefore, the need for Housekeeping Services to be operated in a systematic, planned and scheduled way, with a modern business management, becomes ever more apparent. It is essential that such services be managed as successfully as possible for all institutions (3).

The time and motion study will examine the work processes and eliminate non-productive process, which can reduce number of process and operating time. Time is important in service industry to provide timely and efficient delivery of services to the customer or patient and hence provide quality services.

### 1.2 Problem Statement

The hospital has outsourced housekeeping services being appointed by the state government. The housekeeping services are not effective for providing the quality service in the hospital. The housekeeping service doesn't have set standard time for each process and for the person carrying out the respective activity .No timelines were followed and no cleaning schedule was in place. Thus, it might be difficult for them to increase productivity and streamline the respective process timely to complete a work.

### 1.3 Research Statement

The research question that emerged on this research is:

(i) **'**How time and motion study effect in improving the work process**?'**

## 1.4 Objective of study

The objective towards accomplishing the study is:

a) To study the scope of the housekeeping services in the hospital.
b) To study the various systems which are placed for delivery in services.
c) Monitoring, control and evaluation mechanism for housekeeping services.
d) To identify bottleneck and suggest remedial mechanisms including a road map for action plan.

## 1.5 Scope of study

(i) This study concentrates on outsourced housekeeping services in the government hospital.

(ii) The scope of study is the work processes in carrying out the daily functions in maintaining the premises of the hospital clean and good sanitation practices.

(iii) The study focuses on time and flow of work process of housekeeping personnel from start until the end time of their duty hours within a work shift.

(iv) The data that needs to be carried out is the analyzing of the satisfaction survey, flow chart of the work process, the required time for specific process, number of employees and hence critical analysis of the core processes and according to the analysis and recommendations to streamline the process.

## 1.6 Benefits from this study

The study is chosen because it will benefit to streamline the processes among the advantages are:

(i) Eliminate the Unnecessary

Knowing what is unnecessary is important as knowing what is the most important in process operation. Based on those, we can eliminate insignificant tasks and nonproductive activities. Preoccupation, layout of production, errors, too much motion and travel during performing the tasks are examples of nonproductive activities and it wasted the production time.

(ii) Simplify the Necessary Operations

Simplify the necessary operations to make the job easier by analyzing the process in order to improve it through elimination, combine or rearrange the sequence and layout of operations. By simplifying the operations, it can also effect for the process time.

## 1.7 Literature Review

### Motion Study

According to Ralpha M. Barnes (11) Frank and Lillian M. Gilbreth are known as the parents of motion study. Gilbreth begin investigation to find the "best way" of performing a given task trough analyzing the motions used by his workmen and he easily saw how to make improvements. He also possessed for analyzing work motion situations to enhance their ability for shorter or less fatiguing motions to improve the work environment. The research included the elimination of all useless motions and the reduction of those remaining motions. The elimination of this unwanted waste known as work simplification. According Fred (10), Elton Mayo started their research known as the human relations movement and he discovered that people work better when their attitude is better. He undertook a research project to study what factors affected productivity in the Hawthrone plant. Their studied took place between 1924 and 1933.

### Time Study

According to Fred E. Mayers (10), time study was developed by Frederick W. Taylor in about 1880 which he is the first person to use a stopwatch to study and measure work content with his purpose to define "a fair day's work." He called as Father of Time Study. Among his study is 'Taylor Shoveling Experiment' which he studied between 400 and 600 men that using his own shovel from home to moving material from mountains of coal, coke and iron ore in around two mile-long yards. Taylor identify that there have different size of shovels and he wondered which shovel was the most efficient. Thus, he used a stopwatch and measured everything that workers did. He recorded the data for every work in various ways with varied of shovels size, durations to done their work, number of breaks and work hours. The results were fantastic which it reduced time, saving numbers of workers and budgeting for every year.

**Techniques of Motion and Time Study**

Motion study has the greatest potential for savings. By eliminating the task or combining the task with some task. We can rearrange the elements of work to reduce the work content and we can simplify the operation by moving part. Thus, among the techniques for motion study are:

(i) Process charts

(ii) Flow diagrams

(iii) Operation charts

(iv) Flow process charts

(v) Multiple activity charts

Gilbreths used flow diagrams to show movement of product around an entire plant because they gave an accurate geographical picture of the entire process. They also develop methods study techniques such as cyclograph, chronocyclographs, movie cameras, etc. The techniques of time study start with the last motion technique and it shows the close relationship between motion study and time study. The techniques of time study are:

(i) Stopwatch time study

(ii) Expert opinion standards

(iii) Predetermined time standards

(iv) Work sampling time standards

Frederick W. Taylor used a stopwatch and a clipboard to record the time and findings of his study (,7).

**Relationship and Utilization of Motion and Time Study**

Motion and time study helps management determine how much is produced by workers in a specific period of time, therefore making it easier to predict work schedules and output. Motion and Time Study is a scientific method designed by two different people for the same purpose, to

increase productivity and reduce time. The two methods evaluate work and try to find ways to improve processes. Frank B. Gilbreth invented motion study designed to determine the best way to complete a job. Frederick W. Taylor designed Time Study; it measures how long it takes a worker to complete a task. Time and Motion Study has become a necessary tool for businesses to be successful today. Time and Motion Study is very important in production control. Now, Offices, Banks, Department Stores, and Hospitals use Motion and Time Study. Offices use it to measure and simplify work in order to reduce costs. Banks use it to help team members reach their sales goals (Foster, 2003).

Motion and Time study technique can be used widely for variety of research. For example, Ann Hendrich, Marilyn Chow, Boguslaw A. Skierczynski, Zhenqiang Lu (2008) used this techniques to study spend time of nurse at hospital. L. Aharonson Daniel (1996) used time studies in A&E department. While, Jeffrey S. Smith (2003) survey that many production and manufacturing used simulation as alternative way to develop new effective system.

**Housekeeping Services**

"Accumulation of dust, soil, and microbial contaminants on environmental surfaces is both aesthetically displeasing and a potential source of nosocomial infections. Effective and efficient cleaning methods and schedules are, therefore, necessary to maintain a clean and healthy environment in health care settings." (21)

Housekeeping refers to the general cleaning of hospitals and clinics,including the floors, walls, certain types of equipment, tables and other surfaces. The purpose of general housekeeping is to:

reduce the number of microorganisms that may come in contact with patients, visitors, staff and the community; and provide a clean and pleasant atmosphere for patients and staff.

Most areas in hospitals and clinics are low-risk, such as waiting rooms and administrative offices, and can be cleaned using only soap and water. In high-risk areas where heavy contamination is expected, such as toilets and latrines, or for blood or body fluid spills, a disinfectant such as 0.5% chlorine or 1% phenol should be added to the cleaning solution (20). Using a disinfectant in addition to soap and water is also recommended in other high-risk areas such as operating rooms, pre- and postoperative recovery areas and intensive care units (ICUs).

A survey of cleaning effectiveness was conducted in two wards in four acute hospitals in England and Wales. Surfaces were monitored immediately before and after cleaning on three separate occasions using visual assessment, adenosine tri phosphate (ATP) bioluminescence, expressed in relative light units (RLUs), and microbiological methods (aerobic colony counts [ACC]), expressed in colony forming units (cfu) per cm(2).(17)

The quality of environmental hygiene in hospitals is under increasing scrutiny from both healthcare providers and consumers because the prevalence of serious infections due to multidrug-resistant pathogens has reached alarming levels. On the basis of the results from a small number of hospitals, we undertook a study to evaluate the thoroughness of disinfection and cleaning in the patient's immediate environment and to identify opportunities for improvement in a diverse group of acute care hospitals.(11)

# *CHAPTER 2*

# *RESEARCH METHODOLOGY*

## 2.1 Methodology Framework

There are several methods that will be use to achieve research objectives. After the literature review, observation and collecting data is needed. The complete field data collection will be tested before it will be used for data analysis.

The problems and nonproductive in the work process can be identified based on the data collection and their analysis.

Then, the result from the data testing will be determined whether the result can be used or not and if there are any incomplete data, the data collection will be executed again until it fulfills the objective requirement.

## 2.2 Research Design

a) Review of literature

b) Review of records

c) Identification of tools and techniques for service delivery.

d) Satisfaction survey amongst providers and service recipients.

e) Time study to analyze the standard time for each activity and observe and eliminate the extra time in a process and hence come out with alternatives and recommendations for the same.

This research was conducted through field study and survey questionnaire. Field study is all the methods of research are made from direct observations towards the live study situations. Researcher collected data by observing and recorded the research subject during the observation.

**2.3 Study tools :**

(a) Pre –questionnaire survey- i.e. Pilot Study on questionnaire

(b) Time and Motion Study.

**2.4 Basic Procedure for Research**

There are four steps to complete this study. There are given below according to their sequence:

(i) **Select**: select the process or job to be studied.

(ii) **Record**: observe and record all the relevant facts related to the work process.

(iii) **Examine:** examine each recorded fact critically

(iv**) Develop**: develop the most efficient work process.

**2.5 Data Collection**

This research requires to collect data that are related to the time during the work process occurs, the movement or distance for each process and number of products that they can produces in specific time, which was collect based on several methods:

**(i) Pre –questionnaire survey- i.e. Pilot Study on questionnaire-**

**Sample size**

**The Sample survey was computed as 60.**

The satisfaction survey amongst service provider and service recipients was conducted on scale of 1-5 of their satisfaction levels of availing the services and outlook of the hospital environment, maintenance and sanitation level in hospital.

(ii) **Systematic Observation**-

Systematic observation means researcher are required to observe the whole work process in that industry, then select and focusing on which process or job that want to study. Based on the observation, is needs to record everything happens in each process from the start to finish the work process.

(iii) **Process Chart-**

Process chart is used to show facts as handling, inspection, operations, storage and delays that occur in the work process, where it was happened when the process moves from one process to another process until it finished. Each fact can be represented by symbols, where it is used to describe the process steps.

**2.6 Data Collection Time-**

4 Week, out of which 1 week for survey ,1 week for systematic observation and 2 weeks for data collection of the time study of each process of the worker**.**

**2.7 Data Collection Equipment-**

1. Survey questionnaire

2. Time Study sheet

3. Watch

Time Study sheets were used to track the start time and end time of each person.16 time sheets were used and watch to note the timings was used at the time of observation.

## 2.8 Statistical Tool

- MS Excel

## 2.9 Steps for Time Study

### Step 1: Select

In this step identified topic is selected i.e. Time-motion study of housekeeping people with respect to the activities done per person everyday and streamlining

### Step 2: Record

The activities involved are being recorded and flow chart has been made as follows:

***PROCESS FLOW CHART***

The study can be carried out by preparing process chart, which is a chart to record a process in a compact manner, as a means of understanding and improving it.

The process chart explains systematically the series of actions done during the work process and also gives the information graphically.

The process chart is prepared based on certain number of symbols i.e. Operation. Transportation, Inspection, Delay and Storage. Sometimes few activities may be combined also.

**Operation**: An operation represents the real work that is carried out, mainly the time spent on treatment to patient directly.

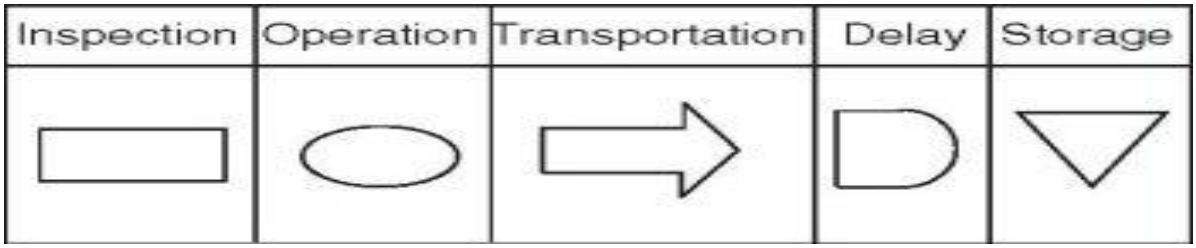
**Transportation**: The staff moves certain object or moving one place to another place, except when the movement is not part of the operation and inspection.

**Inspection**: Inspection means a person examining the work accuracy or checking the materials required or checking and comparing with a standard as quantity or quality.

**Delay**: There may be some gap between activities or before performing the next action some delay due to various reasons.

**Storage**: Storage occurs when the activity is stopped and it is not performed.

**2.10 Symbols for activities**




**2.11 Calculation Formulae-**

**Step By Step**

1. Establish the standard job method.

2. Breakdown the job into elements i.e. 20 Activities.

3. Study the Job.

4. Rate the worker's performance.

5. Compute the average time.

6. Compute the normal Time:

N (t) = (t) (RF)

N (t) =Normal Time

(t)= elemental average time

(RF)= rating factor

, which is assumed to be 100% in the study.

7. Compute the standard time-

ST=N (t) (1+ AF)

Where,

N (t) = Normal Time

AF = Allowance factor i.e. fatigue factor which is assumed to be 5 % in this study.

ST = Standard time

# *CHAPTER 3*

# *RESULTS AND FINDINGS*

### 3. Data Analysis

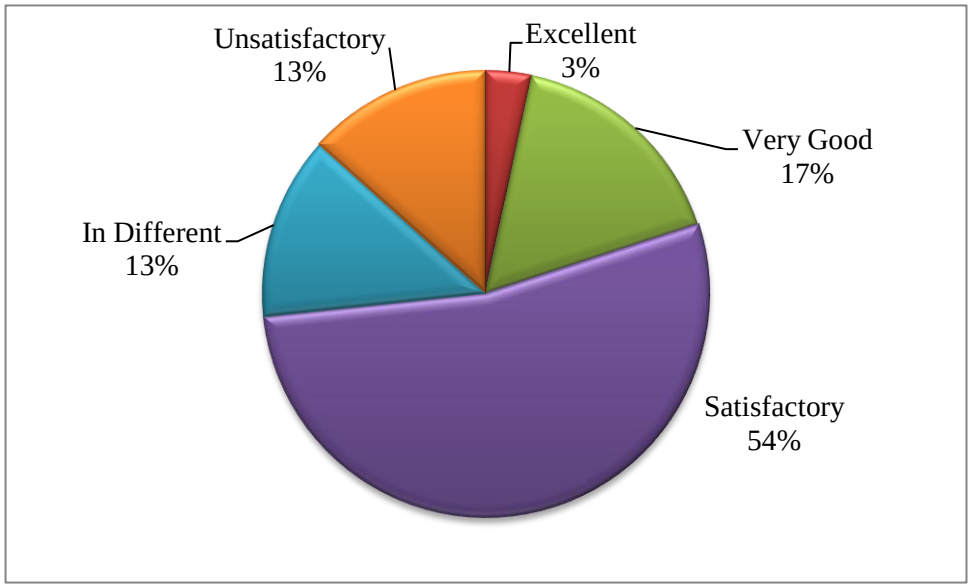
After all data was collected, the next step is analyzing the data thoroughly for each work process. Analyzing data based on systematic observation and the process chart, which recorded all the relevant facts about the work process.

Examine each recorded fact critically using chart and graph. Then, we can detect which part are nonproductive and take a long time in the work process.

### 3.1 Satisfaction Survey

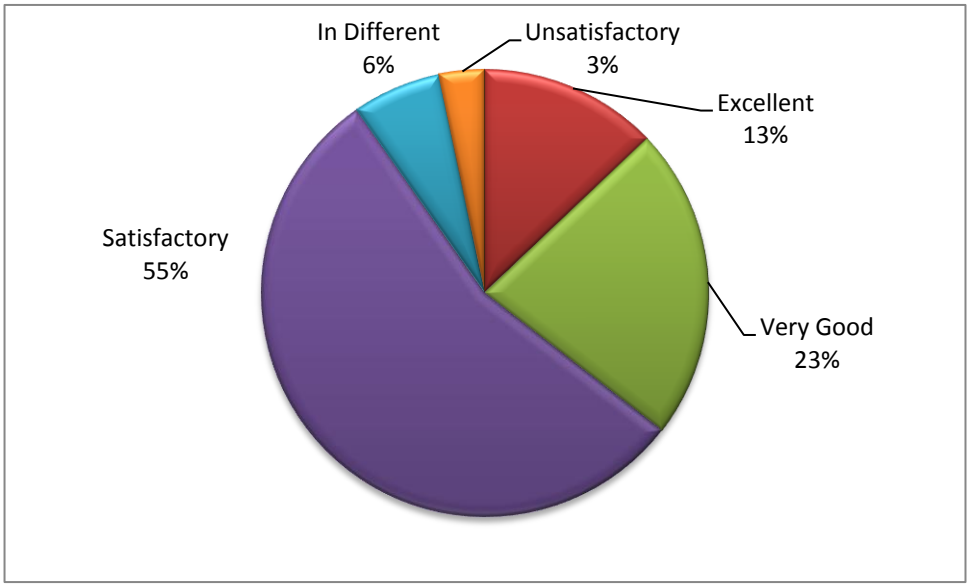
A sample size of 60 people was taken**.** A 10 points questionnaire was taken regarding service satisfaction in the hospital. The scale of 1-5 was taken to access the scale of satisfaction.

***Figure 3.1(A ) - Are you satisfied by the hospital environment***



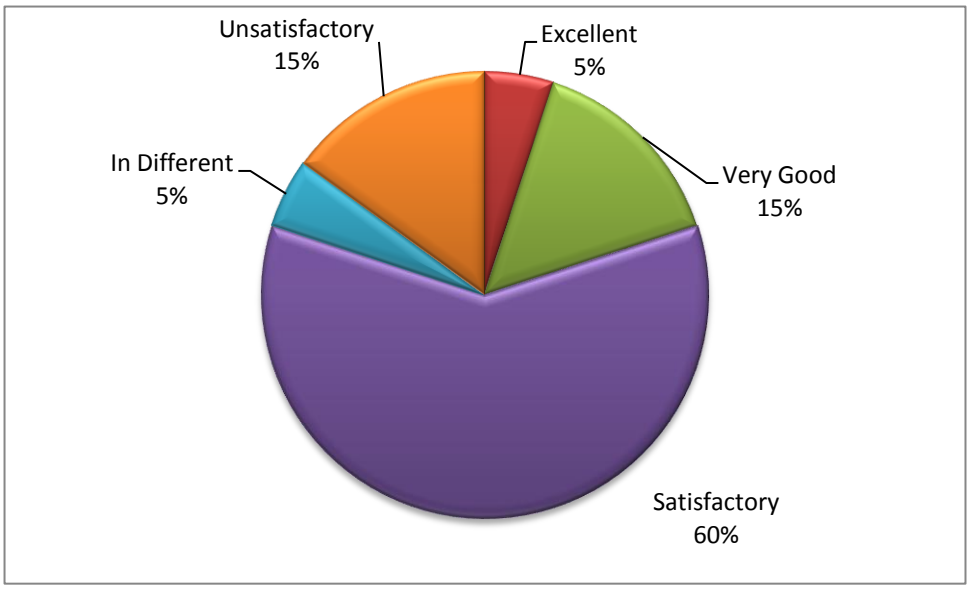

**The Pie-chart depicts that 54%of the total people interviewed found the hospital environment as satisfactory and 13% of the people found it unsatisfactory.**

*Figure 3.1(B ) Grading level of cleanliness in hospital.*



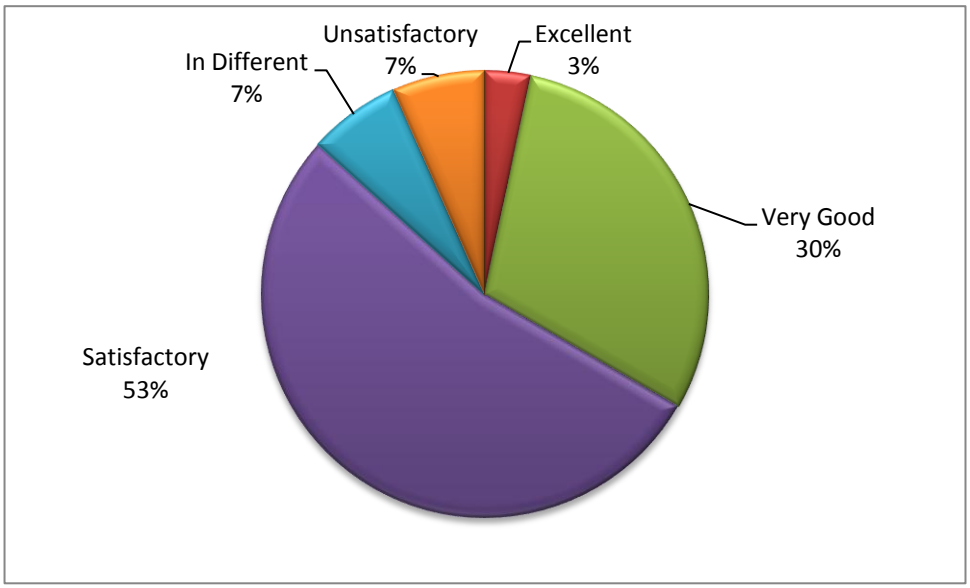

**Out of the total 55 % of the people graded the cleanliness of the hospital as satisfactory and 23%graded it as very good. The unsatisfactory ratio of the same comes out to be 3% of the total.**

***Figure 3.1(C) Satisfaction level regarding the cleanliness and sanitation of toilets.***



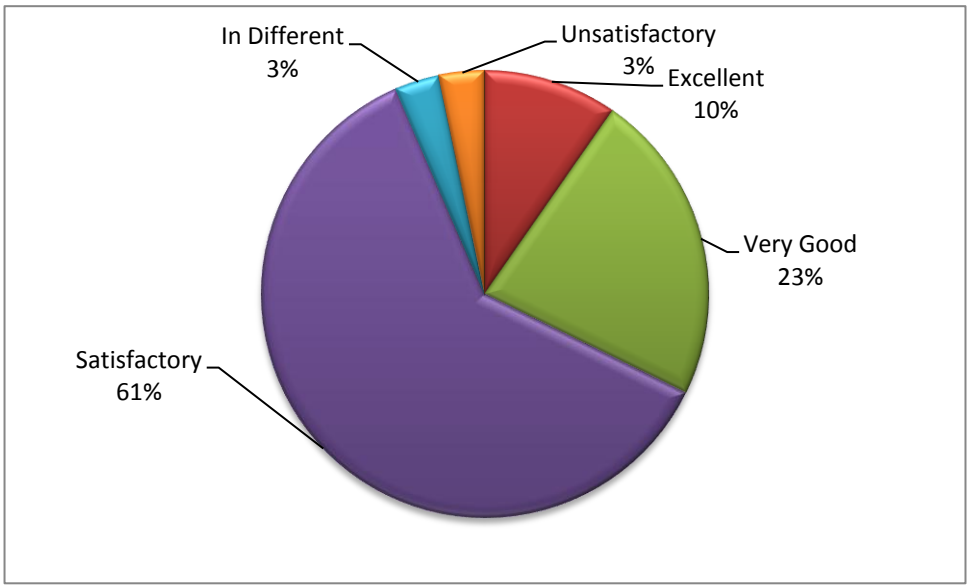

**Out of the total 60% of the people were satisfied by the sanitation and cleanliness of the toilets in the hospital.15% of the people graded it as unsatisfactory and 15% rated the service as very good.**

*Figure 3.1 (D ) Ward looks clean and tidy*



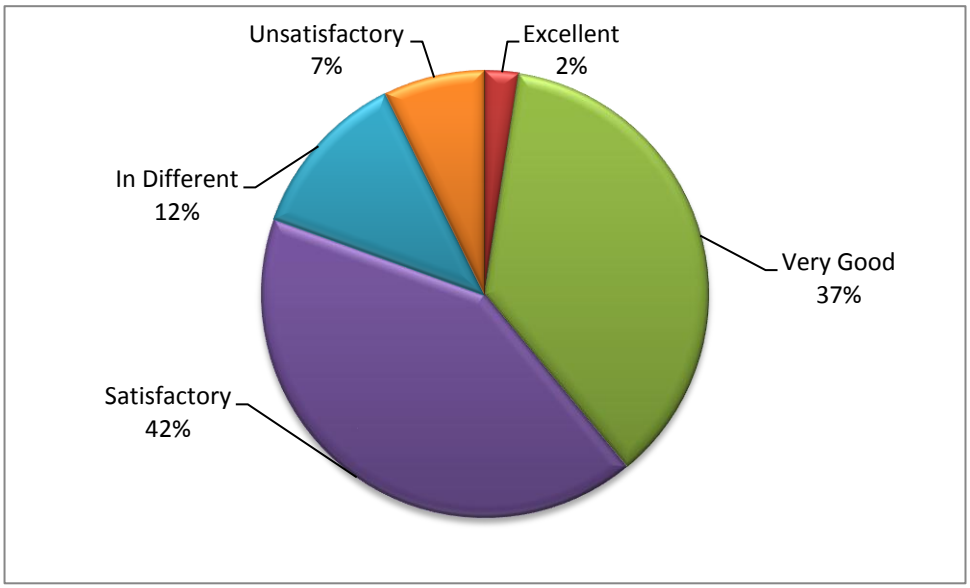

**53% Of the total people rated the housekeeping activity as satisfactory and 7% rated it as excellent and 30% rated it as very good and 7% rated it as unsatisfactory service.**

***Figure 3.1(E) Are all the bins cleaned and emptied regularly.***



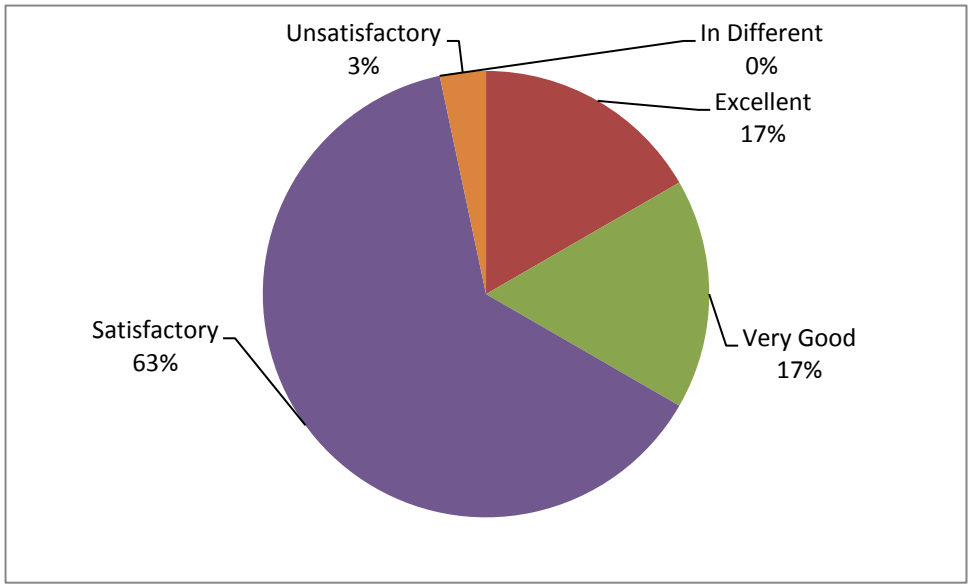

**All the waste bins are cleaned and emptied .61% of the people are satisfied by the service and 10 % people do not agree with the same.23% rated the activity as very good.**

*Figure 3.1 (F ) Does the staff remain on call every time during the shift*



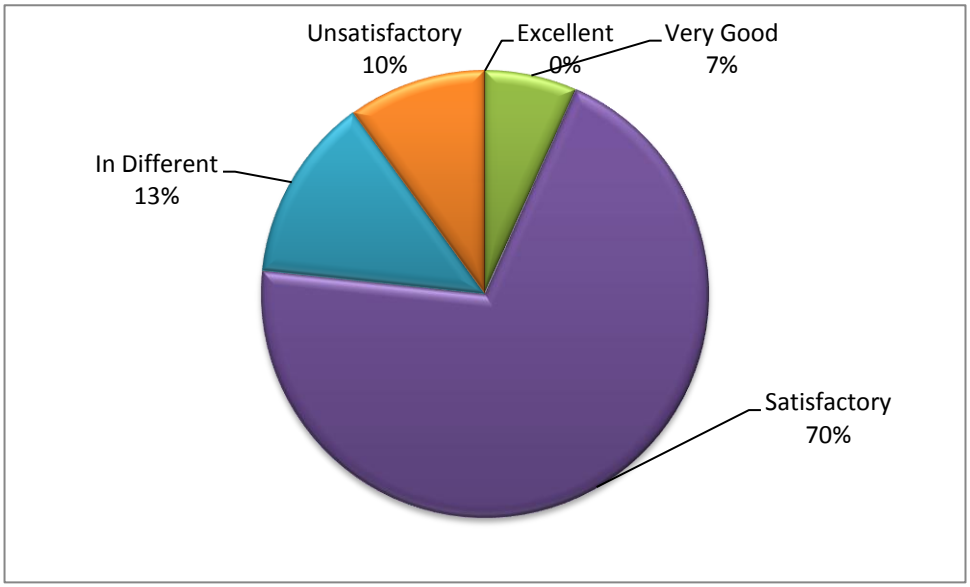

**42% of the people agreed that the housekeeping staff was on call during their shift hours and 7% of the people did not agree with the same.12 % Of the people were indifferent towards this activity.**

***Figure 3.1 (G) Depicting the number of times they carry the cleaning process in a particular area.***



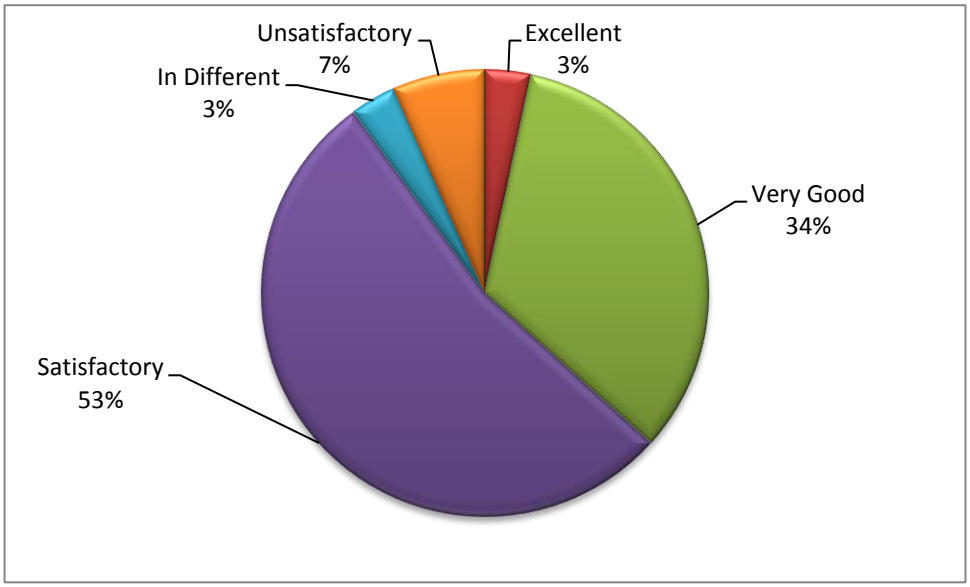

**63% people agree that cleaning of the activity was done more than 2 times .17% was of the view that the cleaning activity done is not effective and clean.**

### *3.1( H) Satisfaction by the response time of housekeeping people on call duty*



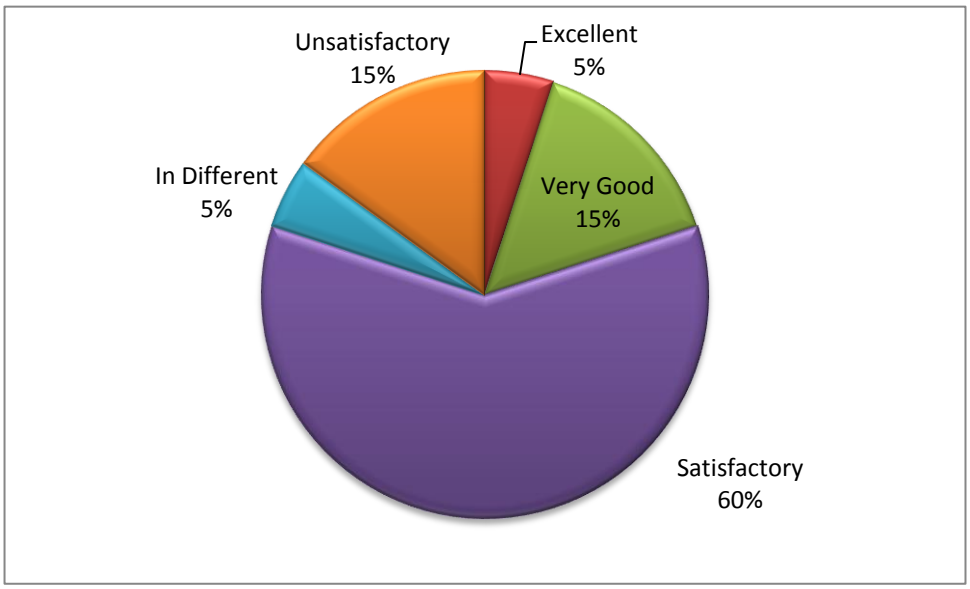

**70% of the people agreed that response time of attending the complaint of the patient is satisfactorily attended by the housekeeping staff. 10% of the sample group didn't agreed with the same and rated the performance as unsatisfactory.**

### *3.1 (I) Satisfaction with the behavior of the housekeeping staff*



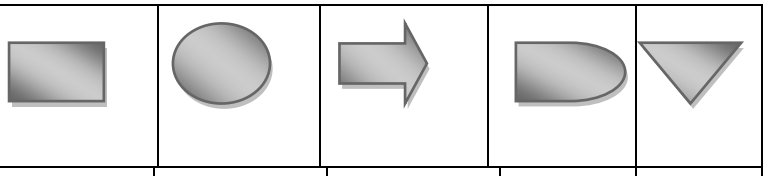

**53% of the people were satisfied with the behavior of the housekeeping staff and 34% rated it was very good and 7% rated it as unsatisfactory. So, overall satisfaction level is satisfactory but to reach to the level of excellence step have to be taken.**

***Figure 3.1(J) Satisfaction level regarding the overall cleaning practices and attitude of the housekeeping people in the hospital***




**70% of the people were satisfied with overall cleaning practices and attitude of the housekeeping people in the hospital. And 23% rated it as very good and 7% rated it as a excellent service.**

### 3.2 *PROCESS FLOW CHART FOR ABOVE MAINTAINED ACTIVITIES-*

| S.no | Activity |  |
|---|---|---|
| 1. | Attendance in the morning | |
| 2. | Duties assigned by the supervisor. | |
| 3. | Collects their respective broom and mop from the janitor's room. | |
| 4. | Goes to respective work areas. | |
| 5. | Sweeps the floor of the area. | |
| 6. | Picks up the Waste and put in the dustbin. | |
| 7. | Collects the Mop and washes it. | |
| 8. | Mops the floor of the work area | |
| 9. | Cleans the toilets. | |
| 10. | Cleans the tiles and windows. | |
| 11. | Tea Time | |
| 12 | Goes to the Particular ward /respective work area. | |
| 13. | Collects the bio-medical waste. | |
| 14. | Goes to the Bio-medical disposal area to keep the waste. | |
| 15. | .Wait for the biomedical in-charge for getting the register signed. | |
| 16. | Gets the bio-medical register signed by the sister in charge | |
| 17. | Goes back to respective ward. | |
| 18. | Mops the Floor again before the CMS round. | |
| 19. | Cleaning of toilets. | |
| 20. | Lunch Time for I hour. | |
| 21. | Mops the Floor. | |
| 22. | Goes to the housekeeping office. | |
| 23. | Keeps the broom/mop in janitor room. | |
| | | |

**Step 3 Examine**

In the entire process of housekeeping, personnel have done following activities.

1. Inspection: Personnel have done 2 activities of inspection.
2. Operation: Personnel had done 13activities of operation.
3. Transportation: Personnel have Moved 5 times.
4. Delay: Attendees delayed in Waiting for Bio-medical sister in charge.
5. Storage: 2 activities are done.

**Step 4 Develop**

Analyzing the above activities and the time , New method or alternative solution is provide to reduce or eliminate the waste time or process.

**3.3 Time Motion study**

**Data Collection-**

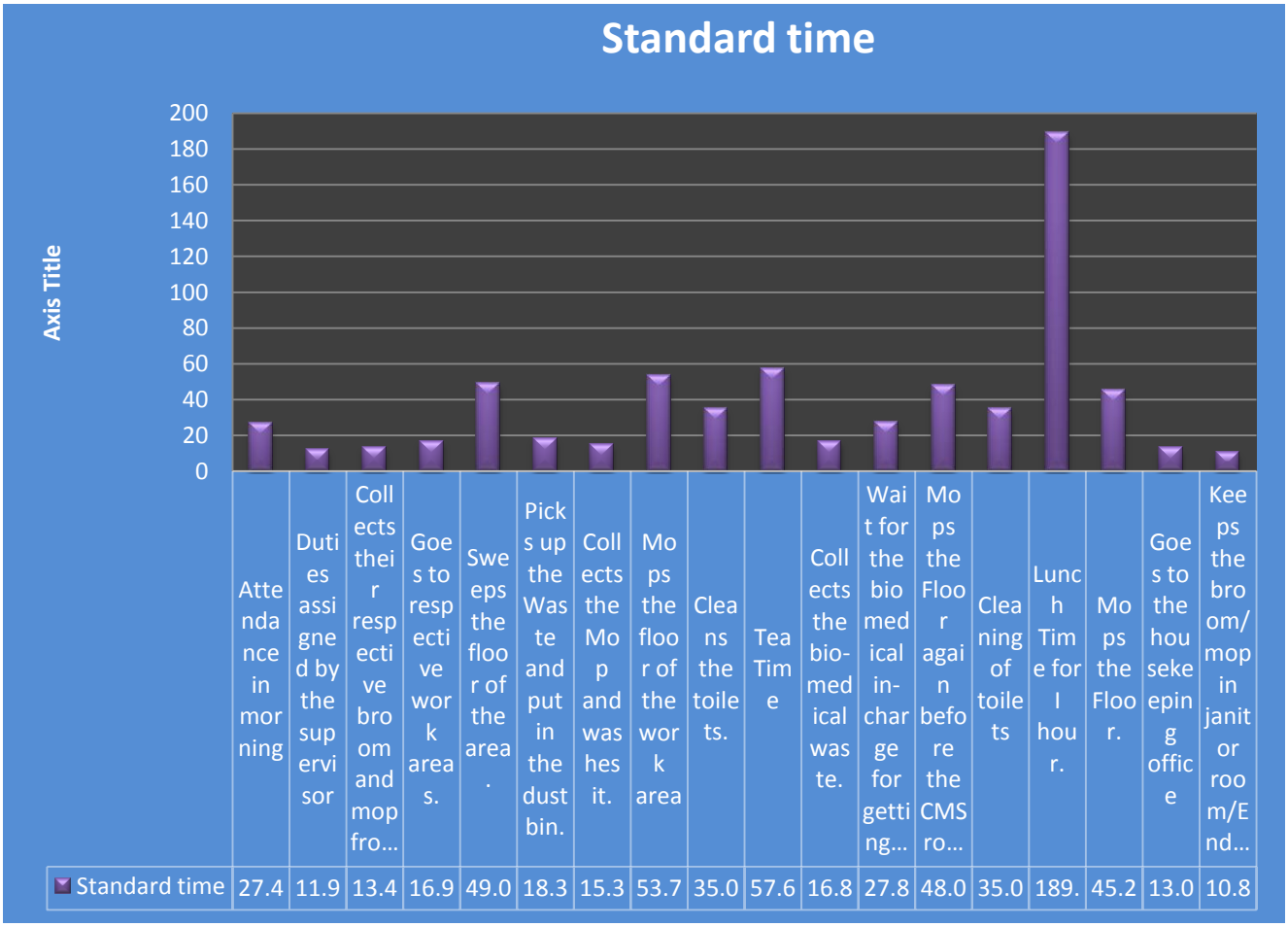
Out of the total 25 people working in morning shift ,the data of 16 people for 3 days was taken for 20 activities that were noted after systematic observation of the housekeeping activities /processes carried by respective person in each ward /work area. Total 48 observations were made.

***Table 3.3 Depicting the standard time calculated for each process activity.***

| ***PROCESS*** | ***STANDARD TIME*** |
|---|---|
| ***1.ATTENDANCE IN MORNING*** | ***27.4*** |
| ***2.DUTIES ASSIGNED BY THE SUPERVISOR*** | ***11.91*** |
| ***3.COLLECTS THEIR RESPECTIVE BROOM AND MOP FROM THE JANITOR'S ROOM*** | ***13.46*** |
| ***4.GOES TO RESPECTIVE WORK AREAS.*** | ***16.90*** |
| ***SWEEPS THE FLOOR OF THE AREA.*** | ***49.03*** |
| ***5. PICKS UP THE WASTE AND PUT IN THE DUSTBIN.*** | ***18.30*** |
| ***6. COLLECTS THE MOP AND WASHES IT.*** | ***15.37*** |
| ***7.MOPS THE FLOOR OF THE WORK AREA*** | ***53.72*** |
| ***8.CLEANS THE TOILETS.*** | ***35.00*** |
| ***9.TEA TIME*** | ***57.62*** |
| ***10 COLLECTS THE BIO-MEDICAL WASTE.*** | ***16.80*** |
| ***11.WAIT FOR THE BIOMEDICAL IN-CHARGE FOR GETTING THE REGISTER SIGNED*** | ***27.84*** |
| ***12.MOPS THE FLOOR AGAIN BEFORE THE CMS ROUND.*** | ***48.00*** |
| ***13.CLEANING OF TOILETS*** | ***35.00*** |
| ***14.LUNCH TIME FOR I HOUR.*** | ***189.00*** |
| ***15.MOPS THE FLOOR.*** | ***45.26*** |
| ***16.GOES TO THE HOUSEKEEPING OFFICE*** | ***13.00*** |
| ***17.KEEPS THE BROOM/MOP IN JANITOR ROOM/END OF SHIFT.*** | ***10.80*** |

The Table depicts the standard time calculated for each work activity taken by the housekeeping staff. The standard time is the time that will be taken by each housekeeping staff to perform a work process.

***FIGURE 3.3(A) DEPICTING THE CALCULATED STANDARD TIME FOR THE ACTIVITIES RECORDED.***

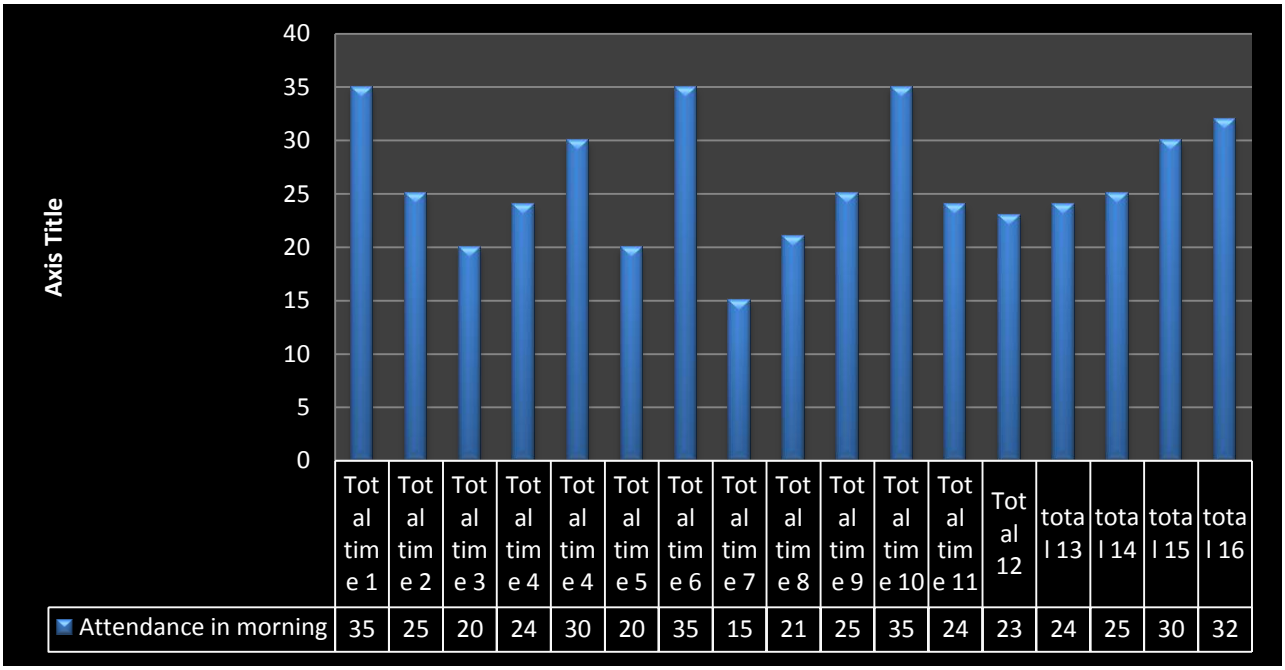



**Explanation of the Graph:**

Standard time for each activity was calculated by taking out the average of all 16 person performing each activity and then assuming the rating factor as 100% and hence Normal time was calculated thereafter. The standard time was calculated by taking the allowance factor as 5% that include the fatigue factor that each personnel working would have in 7 hours in morning shift. Hence, a standard time for each activity was found.

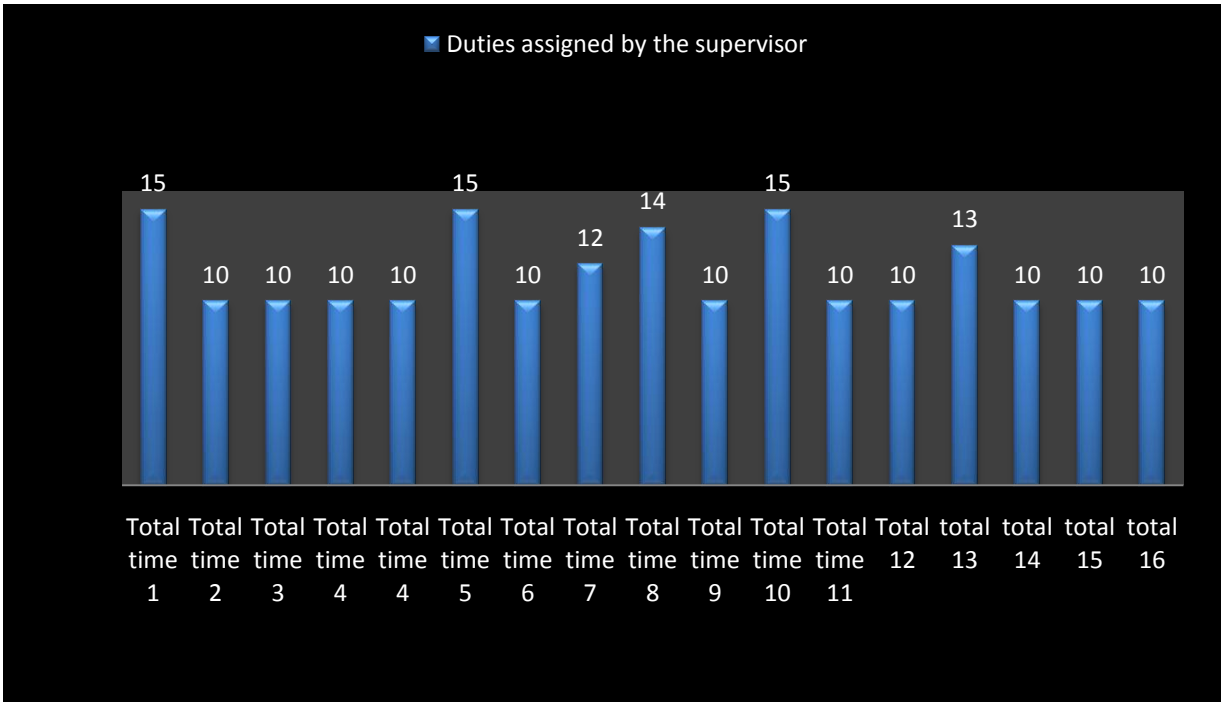
## Graphs depicting the activities and the allocation of time by each person.

***Figure 3.3 (B) Depicting the process i.e. Attendance in morning***



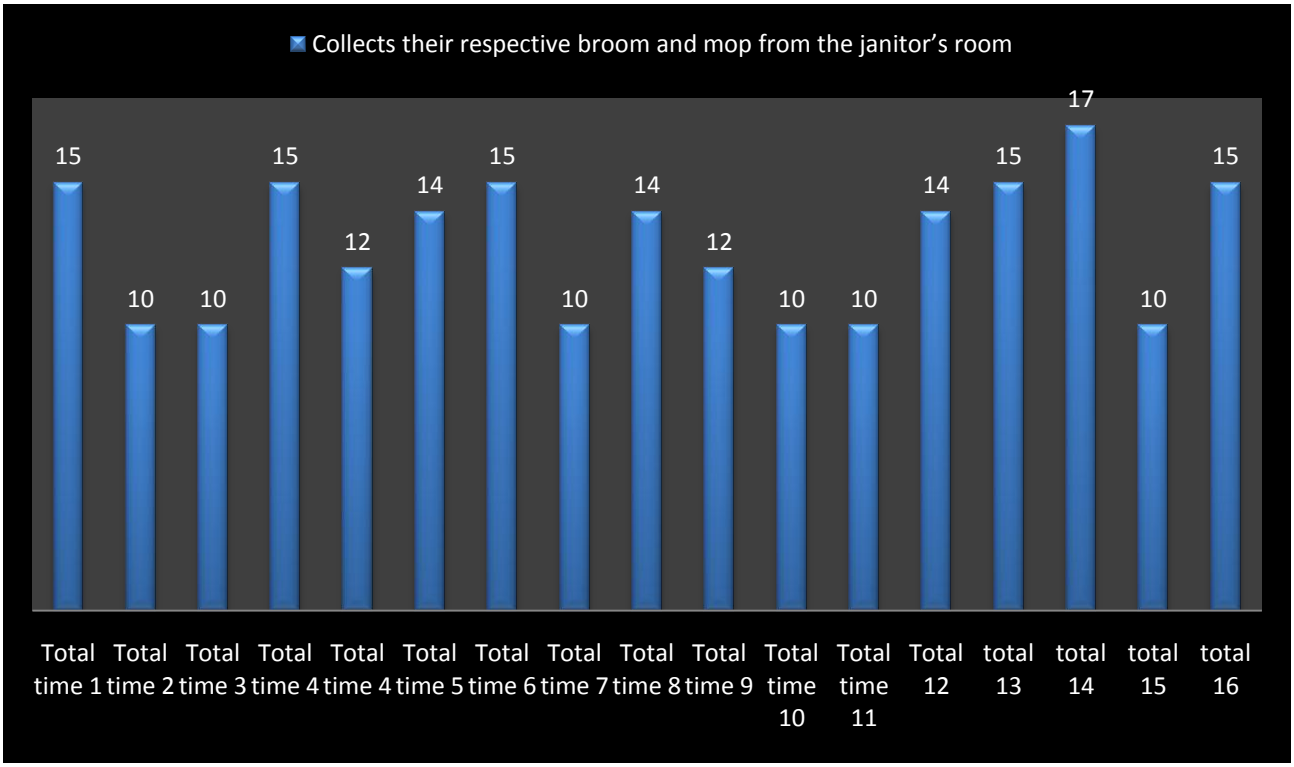

The graph depicts the total time taken by each personnel evaluated for three days in a particular activity process i.e. time taken during attendance .The maximum time taken was 35 min and an average of 12 minutes and the minimum time taken was 15 Min and an average of 3 min per day .This would help in evaluating the Minimum time that should be taken by each person to complete this work activity.

***Figure 3.3 (C) Depicting the process of duty assigned by the supervisor.***



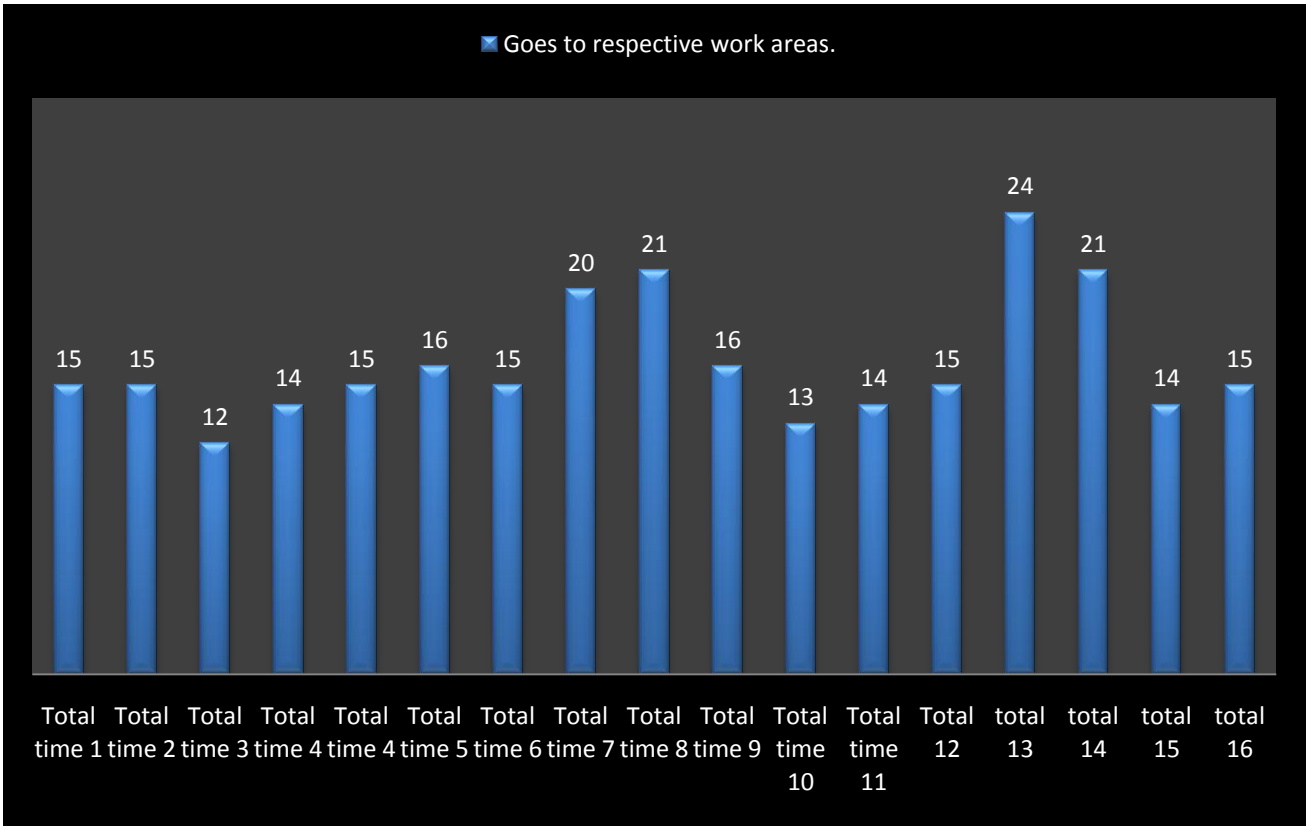

The graph depicts the time taken by each of the housekeeping personnel when waiting for the duties to be assigned by the supervisor. The maximum time taken is 15 min and minimum time taken is 10 min.

***Figure 3.3 (D) Depicting the time taken to collect their respective broom and mop from the janitor's Room***



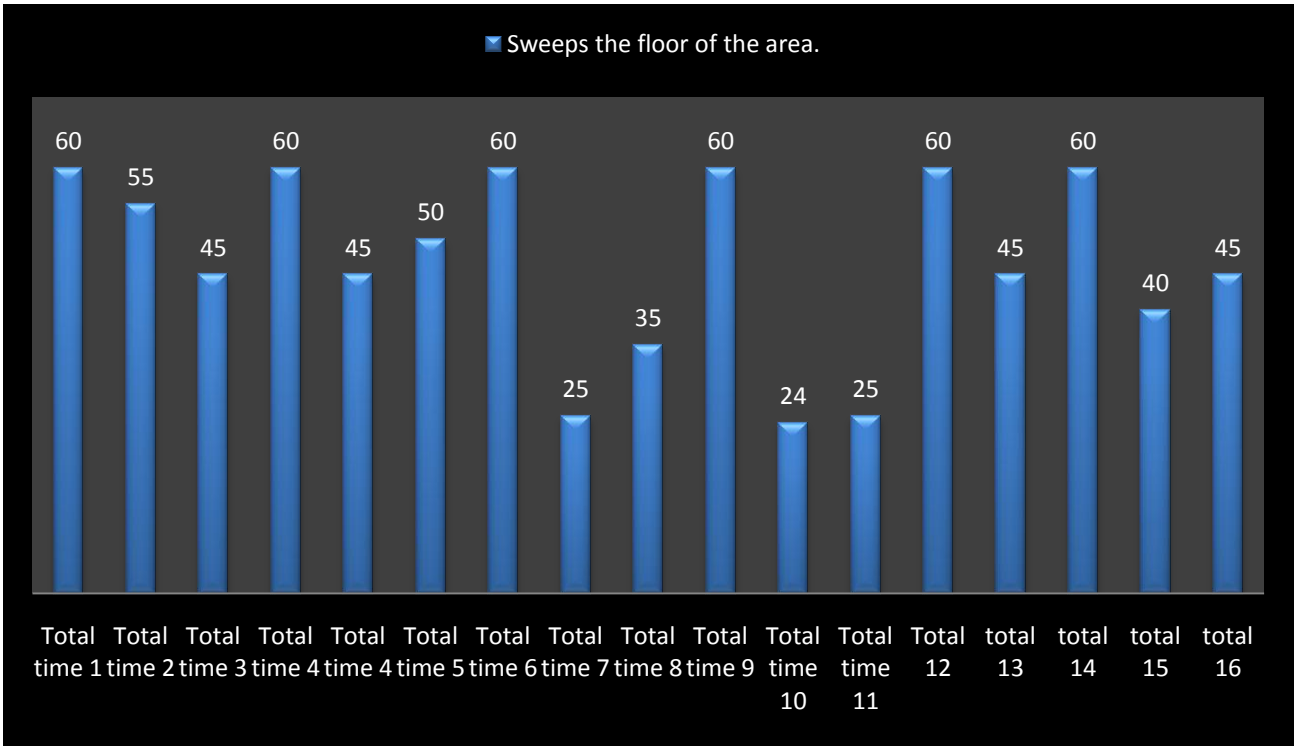

The graph depicts the time taken to collect the respective broom and mop from the janitor's room .The maximum time taken is 17 mins and minimum time taken by the person is 12 mins. So the average time taken by each worker is 13 min.

***Figure 3.3(E) Depicts time taken by each worker to go to their respective work areas.***



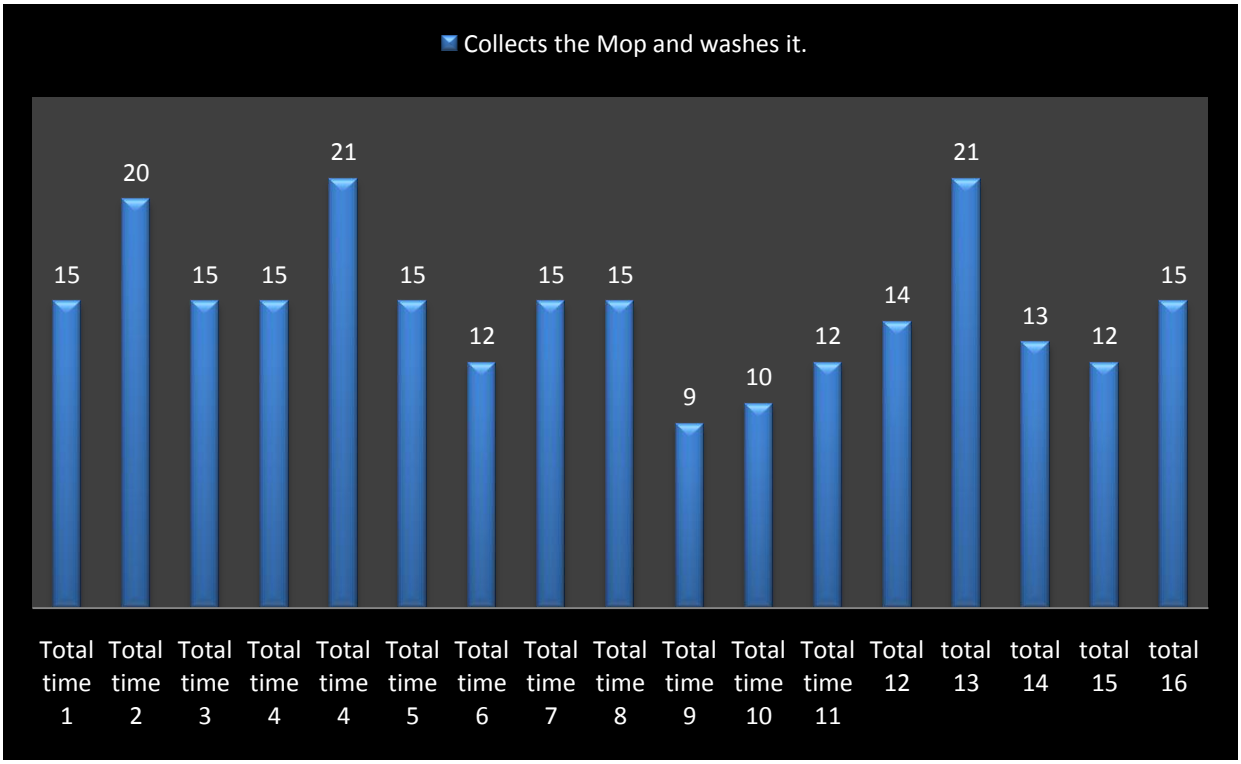

The graph depicts that the maximum time taken by the worker is 24 minutes to a particular ward and the minimum time taken is 12 minutes .the average time to be taken by the worker would be 16.90 Minutes as calculated.

***Figure 3.3( F) Depicts the time taken for sweeping the floor of the area.***



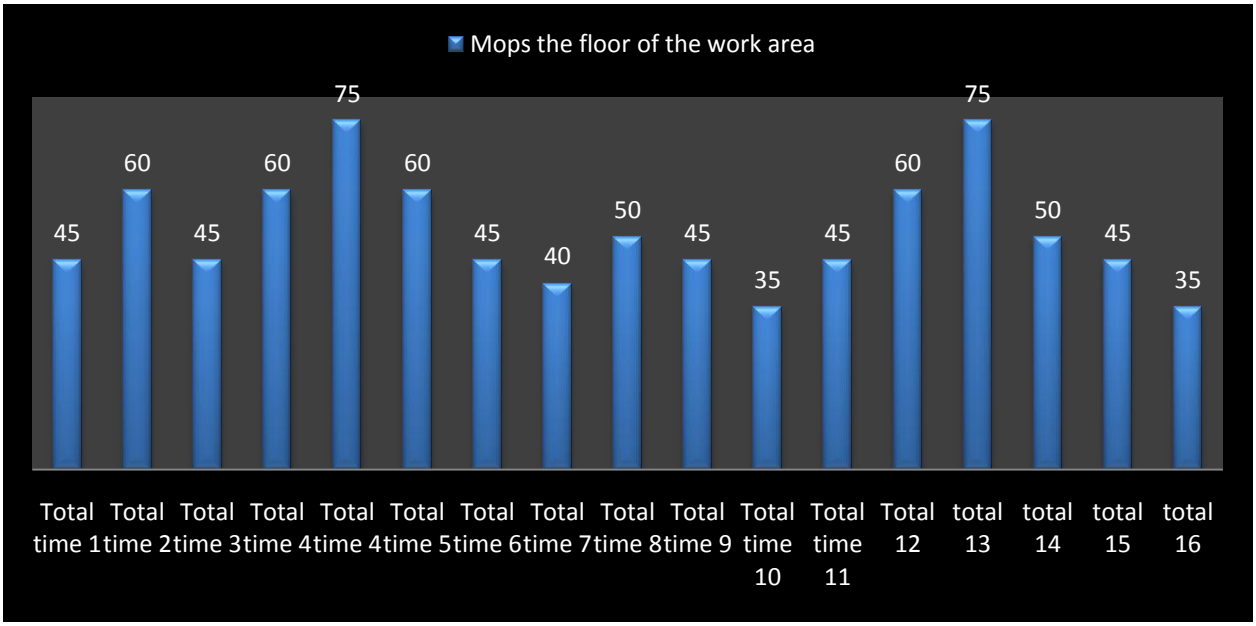

The graph depicts the time taken by the worker to sweep the floor. The maximum time taken is 60 minutes and minimum time taken is 24 minutes. The Average time to be taken by each worker would be 49 minutes.

***Figure 3.3 (G) Depicts the time taken to collect the mop and washes it.***



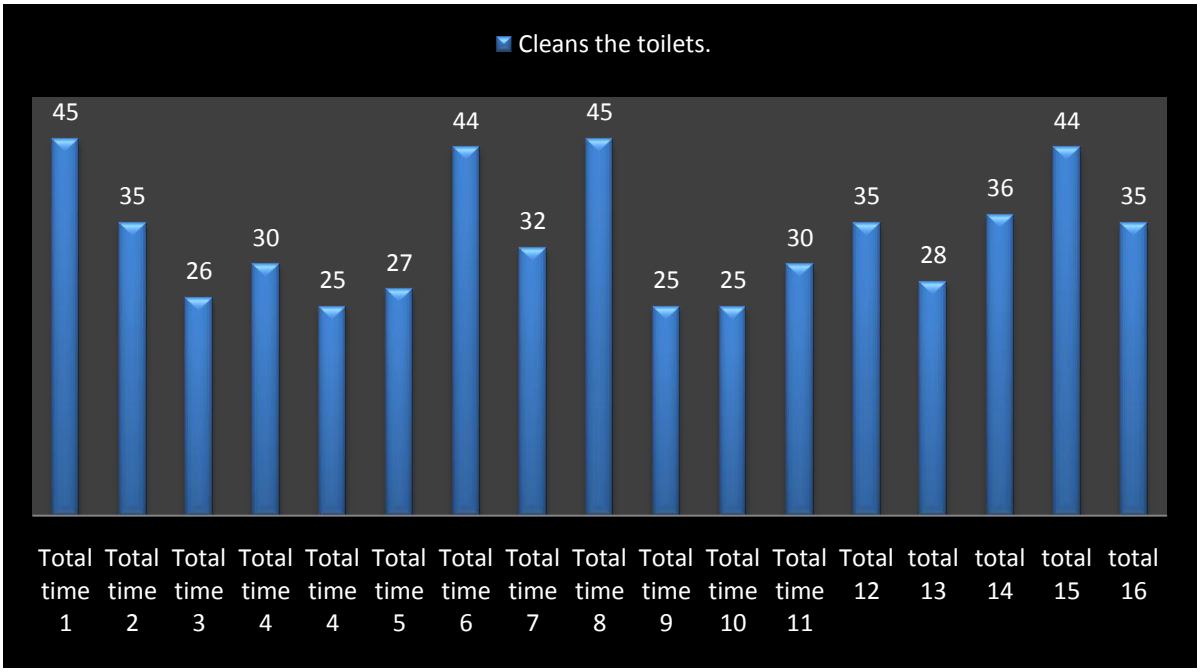

The graph depicts the time taken to collect the mop and washes it. The maximum time taken is 21 min and the minimum time taken is 9 mins .The average time taken is 15.37 minutes.

***Figure 3.3 (H) Depicts the time taken to mop the floor of the work area.***



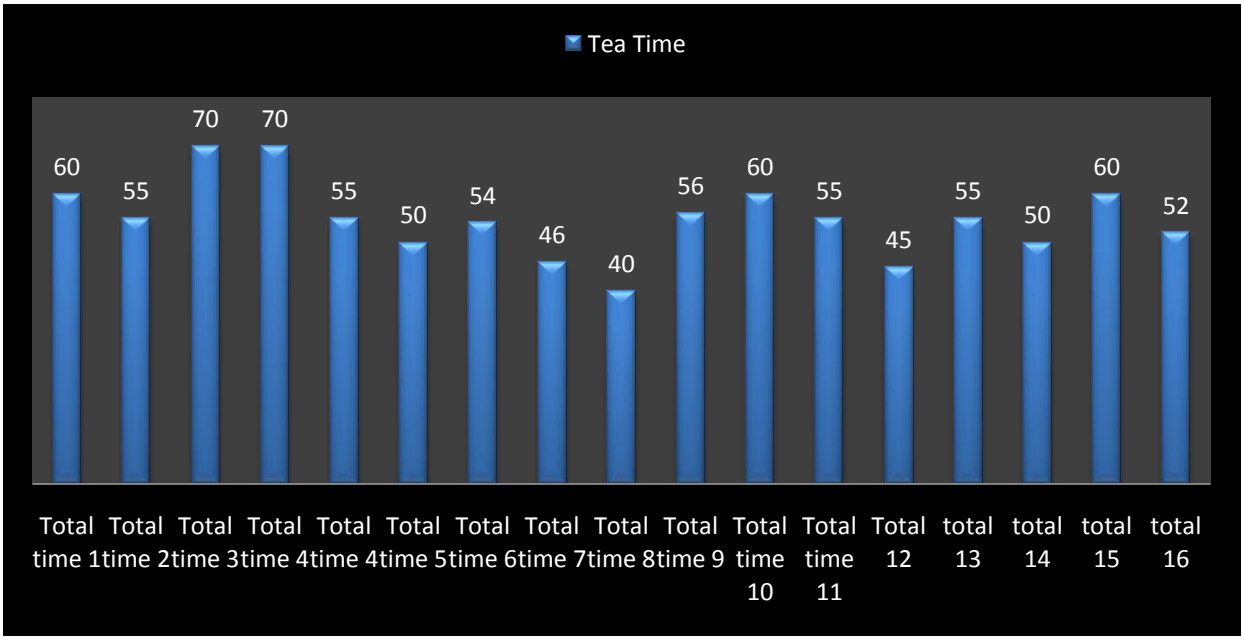

The graph depicts the time taken to mop the floor of the work area. The maximum time taken is 75 minutes and the minimum time taken is 35 min.The average time taken for the activity is 53 minutes.

***Figure 3.3 (I) Depicts the time taken to clean the toilets in the hospital.***



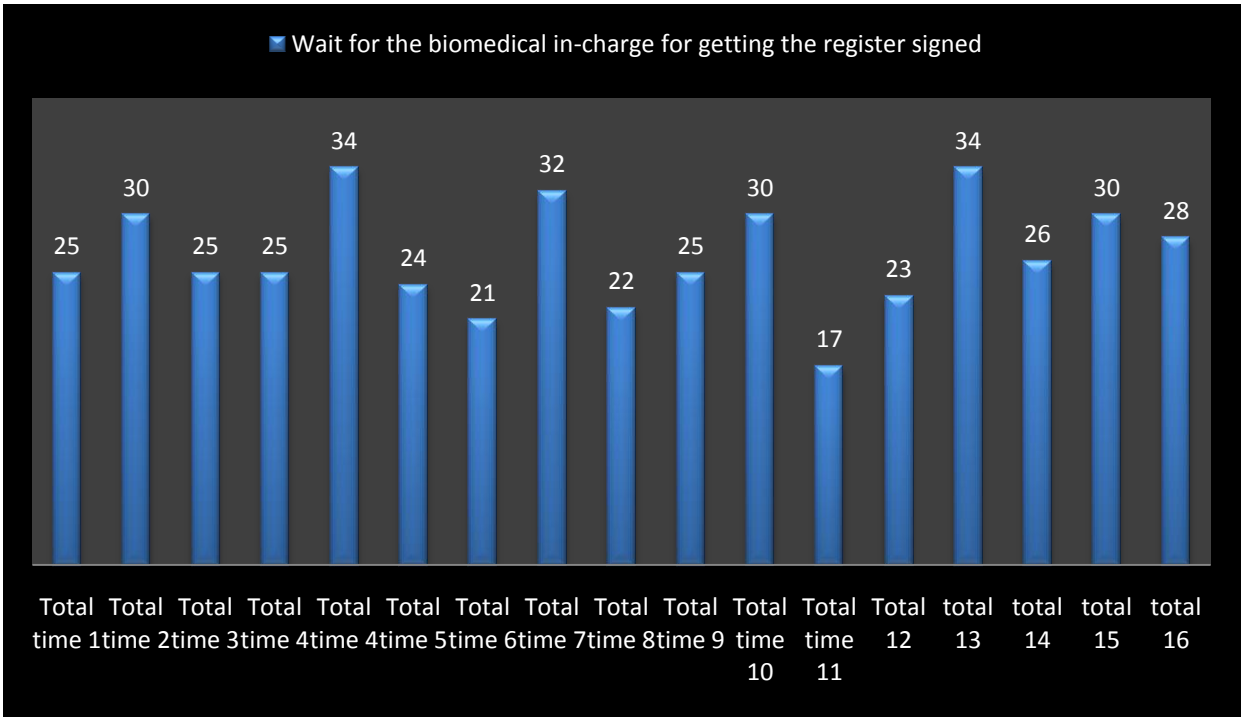

The graph depicts the time taken by each worker to clean the toilets. The maximum time taken by each worker is 45 min and minimum time taken is 25 min.The average time taken is 35 minutes.

***Figure 3.3(J) Depicts the time taken by worker to have tea.***



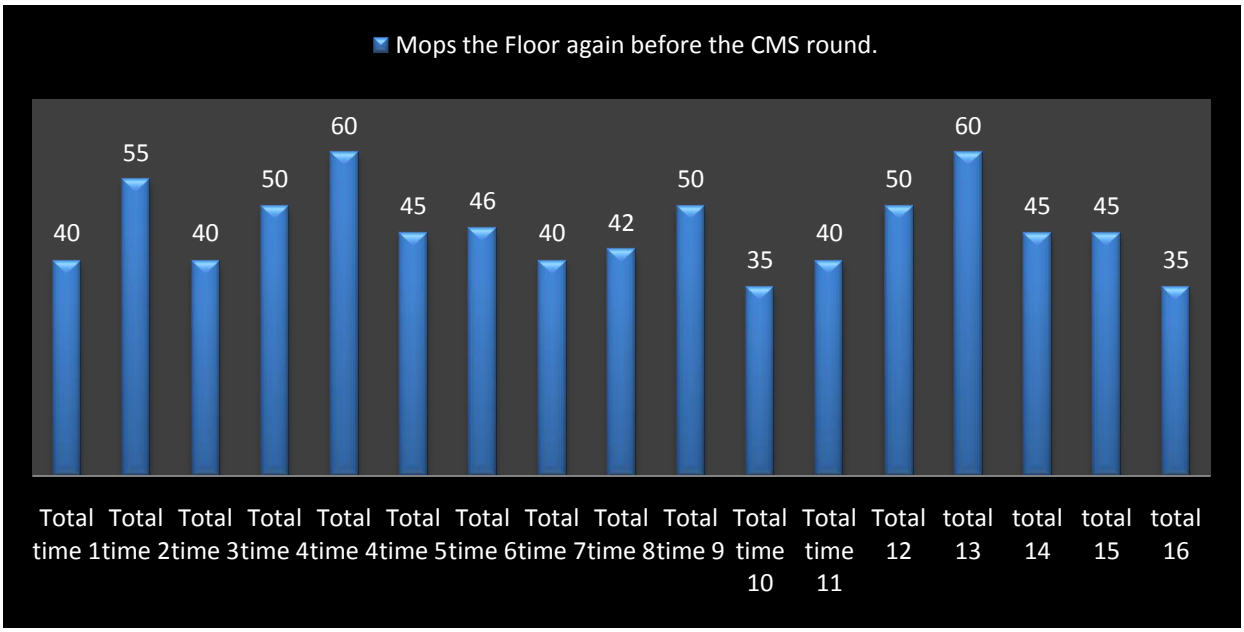

The graph depicts the time taken by each worker during tea break. The maximum time taken by worker is 70 mins and minimum time taken 40 min .the average time taken is 57 minutes.

***Figure 3.3 (K) depicts the waiting time for the bio-medical in-charge for getting the register signed.***



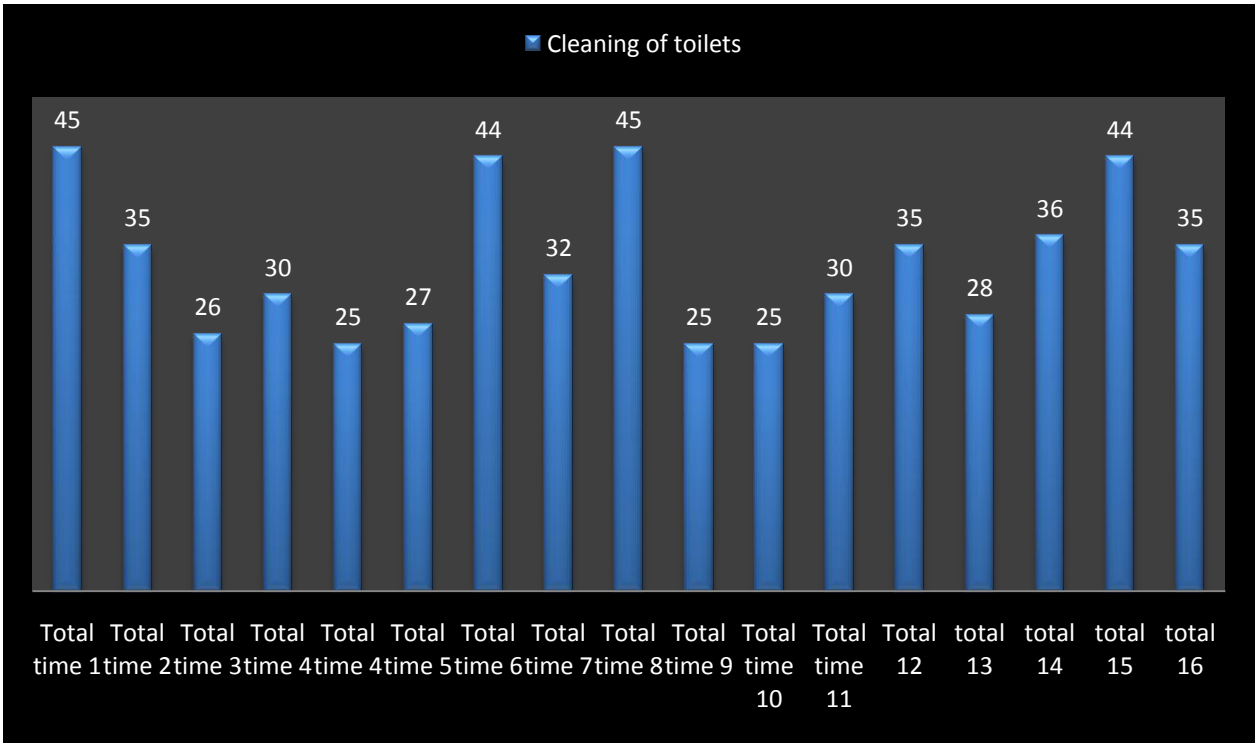

The time taken by the workers to wait for the bio-medical in –charge for getting register signed. The maximum time taken is 34 minutes and the minimum time taken is 17 mins. The average time taken is 27.84 mins.

***Figure 3.3 (L) Depicts the time taken for mopping the floor before the CMS round***



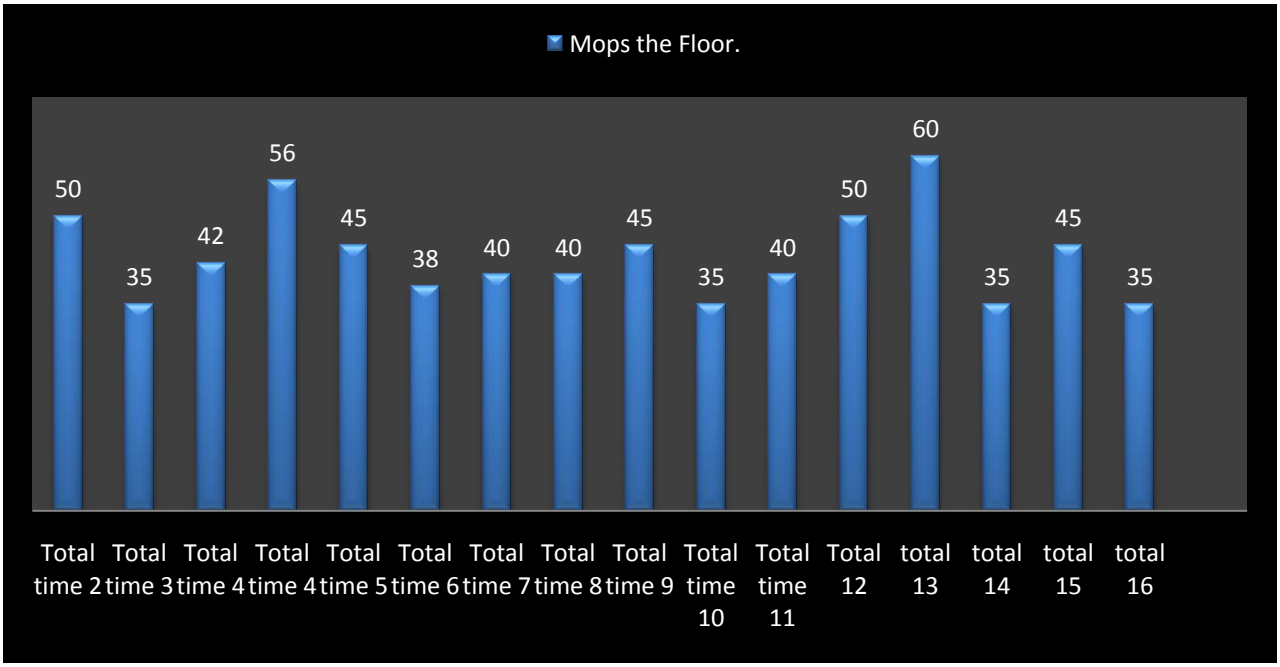

The graph depicts the time taken for mopping the floor before the CMS round. The maximum time taken is 60 mins. The minimum time taken is 35 mins. The average time taken is 48 minutes.

***Figure 3.3 (M) Depicts the time taken for cleaning of toilets.***



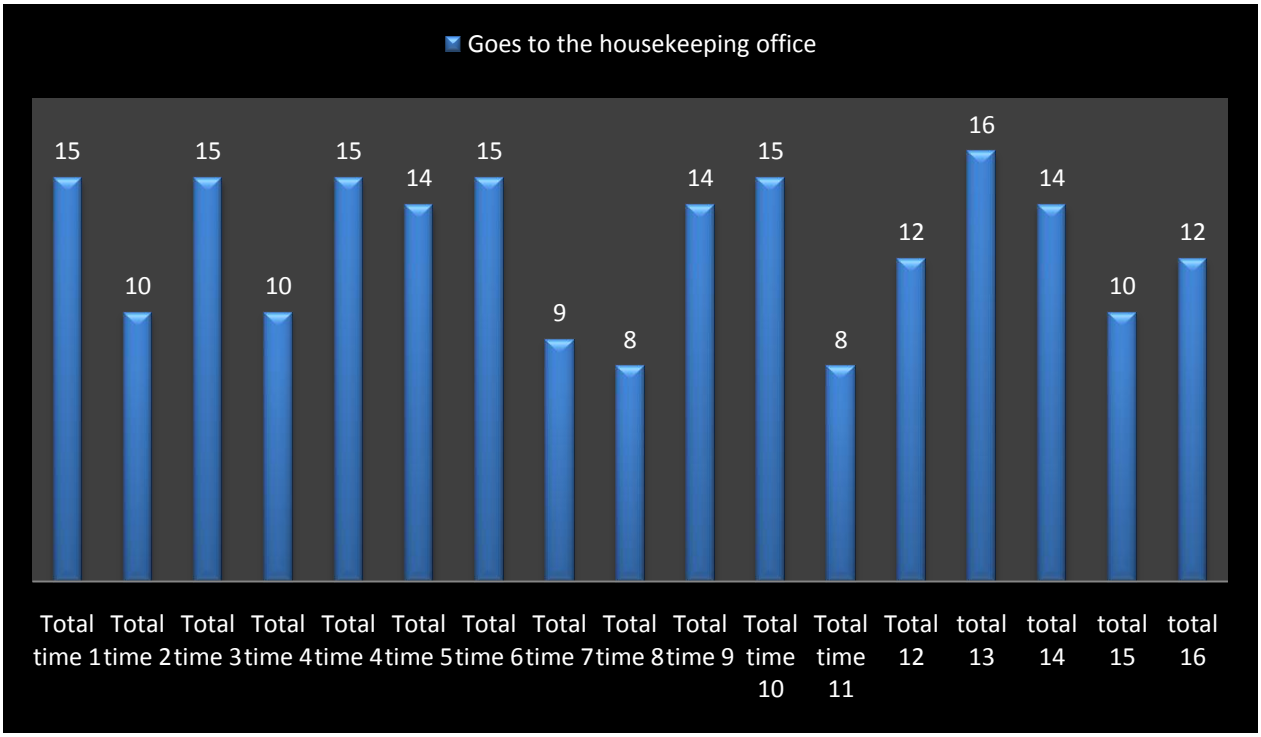

The graph depicts the time taken for cleaning of toilets. The maximum time taken is 45 mins and the minimum time taken is 25 mins. The average time taken is 35 mins.

***Figure 3.3 (N) Depicts the time taken for moping the floor.***



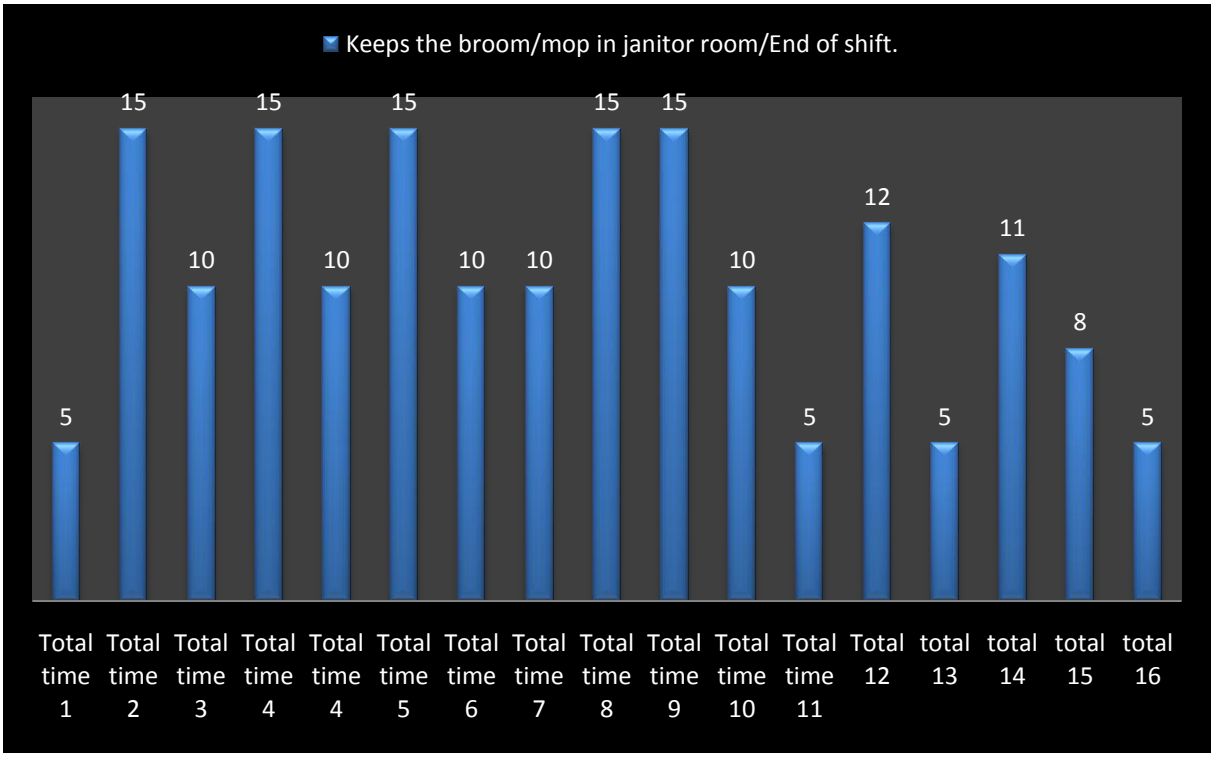

The graph depicts the time taken for mopping the floor .The maximum time taken was 60 mins and minimum time taken is 35 mins. The average time taken for mopping the floor is 48 mins.

***Figure 3.3 (O) Depicts the time taken by the housekeeping staff to go to the housekeeping office.***




The graph depicts the time taken by the housekeeping staff to go to the housekeeping office .the maximum time taken is 15 mins and the minimum time taken is 8 mins. The average time taken is 13 mins.

***Figure 3.3 (P) Depicts that the time taken by the housekeeping staff to keep the broom/mop in janitor room at the end of shift.***




The graph depicts the time taken by the housekeeping staff to keep the broom /mop in the janitor's room at the end of shift. The average time taken to this activity is 10 mins.

# *CHAPTER -4*

# *CONCLUSION*

# *AND*

# *RECOMMENDATIONS.*

After doing data analysis we ,divide the activities into 2 parts i.e. Core activities that are important in the whole process to be carried on and non-core activities are the activities in which by providing alternative options we can eliminate the extra time by critically analyzing the process .

***TABLE 4.1 Depicts the core and non-core activities in the whole process evaluation of the services.***

| *Core activities* | *Non-core activities* |
|---|---|
| Sweeping the floor | Attendance in the morning |
| Picking up the waste | Duties assigned by the supervisor |
| Washing the mop | Collecting the broom |
| Mopping the floor | Tea time |
| Clean the toilet | Lunch Time |
| Bio-medical waste collection | Goes to the housekeeping office |

## 4.2 CRITICAL ANALYSIS

### 4.2.1 Attendance in the morning.

**Need of the process-**

Attendance in the morning is a activity which is required to track the presence of the personnel in the hospital premises. The attendance activity takes the standard time of approx 27 minutes every day. If the activity or process could be redefined or some alternative option would be required to eliminate the waste in time.

***Alternatives-***

1. A attendance sheet to be made and the person who comes should enter the time and signature .this would reduce the crowding and timely marking of the attendance.

### 4.2.2 Duties assigned by the supervisor

After the attendance is marked the supervisor assigns the duty respective of each work area to a person. This takes about  time. This time can be reduced –

***Alternative***

1. The duty roster for a week should be made and duties should be assigned accordingly.

2. Work book of each employee should be made ,to note the respective duty area ,the carry on the work to be done in the week and the column to track the following work being done on the same day.

**Advantage-**

1. This would eliminate the time that the personnel take while their duties are being assigned.

2. This would reduce the of error in performing an activity.

3. Work book will have a checklist for each person, and would help monitoring and evaluation of work done by each person respectively.

### 4.2.3. Bio-Medical Waste collection time

It was observed that waiting time for the bio-medical in charge is around 20 minutes per day on an average. If this would reduce then can help in overall reduction of 20 mins per cycle of work done.

***Alternative-***

1. The time assigned for bio-medical should be reassigned from 10.30 to 10.45, and every person should bring the bags at the defined time to eliminate the time.

***Advantage***

1. This would decrease the waiting time at the bio-medical waste disposal site and would help eliminate the extra time that was previously taken for waiting.

From the above study, it was derived that out of the 20 elemental activity processes, 6 were the core activities that take maximum of the time of the workers. The Non- core activities are the activities are also 6 out of which the three specific activities, of which alternative options if followed could help in reducing /eliminating the extra time taken. This would fulfill the objective of the study by eliminate the waste and increasing the efficiency of the workers. Further, after the implementation of the alternatives or recommendations, again a time study would be conducted to note the changes in the work processes.

**4.3 Limitations of the study:**

1. The study was conducted in first shift i.e. from 7 am to 2 pm, comprising of 22 people working in that. The study included the 16 people from the shift and there processes were tracked .out of the 22 people , 4 people who work outside in maintaining the hospital premises were excluded from the study ,because of the their processes were different from the other 16. So, sample of 16 people were taken for 3 days to note the timing of each process to conduct time motion study.

# *CHAPTER 5*

# *REFERENCES*

*1. Manual of Hospital Housekeeping. Chicago, American Hospital Association, 1959.*

*2. Eugence J. Good Housekeeping Hospitals, 1983, 70-72.*

*3.Mizuno W. G Pryor A. K. Evaluating Detergent Germicides for Hospital Use Hospitals vol. 40, Jan 16. 1966, 88-90*

*4. Franchettd T/M, Juzwish DW Integrating Quality Assurance in Dimensions Health Services: Feb, 1989 17-19.*

*5. Hendrich.A, Chow.M, Skierczynski.B, Lu.Z (2008). A 36 – Hospital Time and Motion Study: How Do Medical Surgical Nurses Spend Their Time. The Permanente Journal Summer, Vol 12 No.3. Pages 25 – 34*

*6. Kumar.B (1999). Industrial Engineering. Khanna Publishers, Delhi*
*Brian Price (1989). Frank and Lillian Gibreth and the Manufacture and Marketing of Motion Study, 1908 – 1924.Manufacturing Technology 29 (2006) Pages 772 – 785*

*7. Foster (2003). Operational Management – Time and Motion Study.ppt. Www.freequality. org /sites_ free quality_org/document/training.*

*8. Meyers.F (1992). Motion and Time Study – Improving Work Methods and Management. Prentice Hall Inc*

*9. Daniel.A.L (1996) Time Studies in A&E Departments – A Useful Tool for Management: Journal of Management in Medicine, Vol 10 No 3 Pages 15 – 22.*

*10. Aft .L.S.(2001). Work Measurement and Method Improvement. John Wiley and Sons Inc.*
*Marvin E. Mundel and David L. Danner (1994). Motion and Time Study – Improving Productivity. Seventh Edition. Prentice Hall Inc.*

*11. Barnes .R (2001). Motion and Time Study – Design and Measurement of Work. Seventh Edition. John Wiley and Sons Inc*

*12. Russell and Taylor (2005). Operations Management – Quality and Competitiveness in a Global Environment. Fifth Edition. John Wiley and Sons.*

*13. Lewis T, Griffith C, Gallo M, Weinbren M(2008) jun, A modified ATP benchmark for evaluating the cleaning of some hospital environmental surfaces69(2):156-63. Epub 2008 May 12.*

*14. Christensen TE, Jørgensen JS, Kolmos HJ. (2007) The importance of hygiene for hospital infections, 2007 Dec 3; 169(49):4249-51.*

*15. Carling PC, Parry MF, Von Beheren SM; Healthcare Environmental Hygiene Study Group,(2007),Identifying opportunities to enhance environmental cleaning in 23 acute care hospitals2008 Nov;29(11):1035-41, .*

*16. Griffith CJ, Obee P, Cooper RA, Burton NF, Lewis M.(2007),The effectiveness of existing and modified cleaning regimens in a Welsh hospital,Aug;66(4):352-9. Epub 2007 Jul 26.*

*17. Cooper RA, Griffith CJ, Malik RE, Obee P, Looker N. (2007)Monitoring the effectiveness of cleaning in four British hospitals, 2007 Dec; 67(4):390. Epub 2007 Nov 19*

*18. McFarland LV et al. 1989. Nosocomial acquisition of Clostridium difficile infection. New Engl J Med 320(4): 204–210.*

*19.Russell AD, WB Hugo and GA Ayliffe. 1982. Principles and Practice of Disinfection, Preservation and Sterilization. Blackwell Scientific Publications: Oxford, England.*

*20.South East Asia Regional Office (SEARO), World Health Organization. 1988. A Manual on Infection Control in Health Facilities. SEARO: New Delhi, India, pp 72–88.*

*21. Chou T. 2002. Environmental Services, in APIC Text of Infection Control and Epidemiology. Association for Professionals in Infection Control and Epidemiology (APIC): Washington, DC, pp 73–81.*

# *CHAPTER 6*

# *ANNEXURES*

## 6.1 Satisfaction survey

Satisfaction survey among service provider's and recipient's to evaluate the housekeeping services in hospital

| S.No | Activity | **Excellent** | **Very good** | **Satisfactory** | **Indifferent** | **Unsatisfactory** | **No Response** |
|---|---|---|---|---|---|---|---|
| 1 | Are u satisfied by the hospital environment? | | | | | | |
| 2 | How much will u grade the level of cleanliness in hospital? | | | | | | **----** |
| 3 | Are u satisfied by the cleanliness in toilets. | | | | | | |
| 4 | Does the ward look clean and tidy? | | | | | | |
| 5 | Are all the waste bins cleaned and empitied regularly. | | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 6 | Do the staff remain on call everytime during their shift. | | | | | | |
| 7 | How many times do they carry the cleaning process in a particular area? | | | | | | |
| 8 | Are u satisfied by the response time of the housekeeping people on call duty. | | | | | | |
| 9 | Were you satisfied with the behavior of housekeeping staff? | | | | | | |
| 10 | Were you satisfied with the overall cleaning practices and attitude of the housekeeping people in the hospital. | | | | | | |