

Summer Training at



**Fortis Flt. Lt. Rajan Dhall Hospital, New Delhi
(April 1–May 31, 2014)**

- **Inventory Control by ABC, VED and ABC-VED Matrix Analysis of Drugs**
- **Process Flow Mapping, Determining the TAI and Strategy Involvement for Improving TAT of PHC**
- **A Study on Patient Satisfaction of PHC Department**
- **The First Step is Measuring the Effectiveness of a ‘Wellness’ Initiative to Perform a Need Assessment for Marketing Purpose**
- **Implementation of 5s in Store and Purchase Department**

**By
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**Under the guidance of
Dr. Nutan P. Jain**

**MBA- Hospital & Health Management (MBA-HM)
2013-2015**



**The IIHMR University, Jaipur
2014**

**INSTITUTE OF HEALTH
MANAGEMENT RESEARCH**

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CERTIFICATE

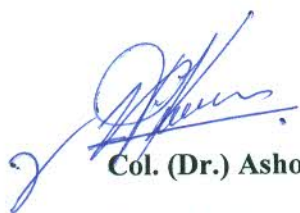
This is to certify that **Dr. Sonal Rai** has undergone her summer training in **Fortis Flt. Lt. Rajan Dhall Hospital, New Delhi** from 2nd April, 2014 to 2nd June, 2014. The candidate herself carried out below mentioned studies related to her summer training. Her approach to the study has been scientific and analytical.

Studies are:-

1. Inventory control by ABC, VED and ABC-VED Matrix Analysis of drugs.
2. Process flow mapping, determining the TAT & strategy involvement for improving TAT of PHC.
3. A study on patient satisfaction in PHC.
4. The first step is measuring the effectiveness of a 'Wellness' initiative to perform a needs assessment for marketing purpose.
5. Implementation of 5s in store and purchase department.

The summer training is partial fulfilment of the course requirement recommended for the award of Post Graduate Diploma in Hospital and Health Management.

I wish her success in all her future endeavours.



Col. (Dr.) Ashok Kaushik

Dean (Academic & Student Affairs)

IIHMR, Jaipur



Dr. Nutan Jain

Professor

IIHMR, Jaipur

June 2, 2014

To Whomsoever It May Concern

This is to certify that **Ms. Sonal Rai**, student of IIHMR (Jaipur), has completed her training in the following department for the respective duration.

- Marketing & Sales : 2nd April 2014 – 13th April 2014
- Front-Office: 14th April 2014- 27th April 2014
- Purchase: 28th April 2014 – 31st May 2014
- Stores: 11th May 2014 – 2nd June 2014

Duration: 2nd April 2014 to 2nd June 2014

For Fortis **Flt. Lt. Rajan Dhall Hospital, New Delhi.**

During this period her work was Excellent, we wish her all the best in her future endeavors.



Mr. Pradeep Singh

Zonal Head HR



ACKNOWLEDGMENT

Nothing really can be accomplished alone; it's the direction, guidance, involvement, support and prayers of more than few that results into realization.

My institute- **Institute of health management research (IHMR)**, Jaipur and its education deserves the foremost appreciation for providing me the opportunities to understand my individual capabilities. Of course, all the faculties at IHMR had facilitated the endeavor; I acknowledge the contribution of my mentor **Dr. Nutan Jain** and **Col (Dr) Ashok Kaushik, Dean, IHMR** in completion of the project right from the word go.

Many people have contributed to my learning experience at **Fortis hospital Vasant Kunj, Delhi**. I would specially like to thank my **Head Administration- Mrs. Sadhhna Siingh** and my **Mentor- Shivani (Deputy Manager,HR)**, **Mr. Sanjeev Vatta (Marketing, Deputy Manager)**, **Mr. Nitin Prem Kumar(Head, PCS)**, **Mr. Puneet Kaushal (Deputy Manager, FO)**, **Mr .K.K Mishra(Head, Materials)**, **Mr. Dev Kumar Nath (Head, Purchase)**, **Mr Subhash(Head, Store) Fortis Flt Lt Rajan Dhall Hospital, New Delhi** for his insight thought provoking questions, guidance and his continued leadership and support for this project.

It is my pleasure at this point in thanking all those from the different departments for contributing with their ideas and thoughts during the training sessions held. Also, I would like to extend my thanks the Staff of the hospital in assisting me in every aspect.

Again, this is not just to acknowledge the contribution but also to understand the fact that nothing can be accomplished alone.

Thanking you

Dr. Sonal Rai

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ABBREVIATIONS

- | | |
|---------|--------------------------------|
| 1. TAT | Turn Around Time |
| 2. PHC | Preventive Health Checkup |
| 3. HIS | Hospital Information System |
| 4. FOA | Front Office Assistant |
| 5. N/A | Not Applicable |
| 6. PCC | Patient Care Coordinator |
| 7. MT | Medical Transcriptionist |
| 8. UHID | Unique Hospital Identification |
| 9. NIC | Non Invasive Cardiology |
| 10. AVG | Average |
| 11. OPD | Out Patient Department |
| 12. FOS | Fortis Hospital System |
| 13. VED | Vital Essential Desirable |
| 14. BMI | Body Mass Index |

Training Introduction:

Summer Training is an integral part of the Post Graduation Diploma in Hospital Management (PGDHM).

The main purpose of this summer training is to get an orientation towards the layout, operations and workflow of the hospital, in order to understand the processes and systems in the hospital.

After completing the first academic year of PGDHM, the students are supposed to undergo a two months training in a hospital, as a part of the curriculum.

Indeed I have got the golden opportunity to work in Asia's leading Healthcare provider, Fortis Group of Hospitals.

I joined Fortis Ft. Lt. Rajan Dhall Hospital, New Delhi from 1st April, 2014 for summer internship. The duration for the summer training is of 2 months i.e. 1st April to 31st May 2014.

Aim:

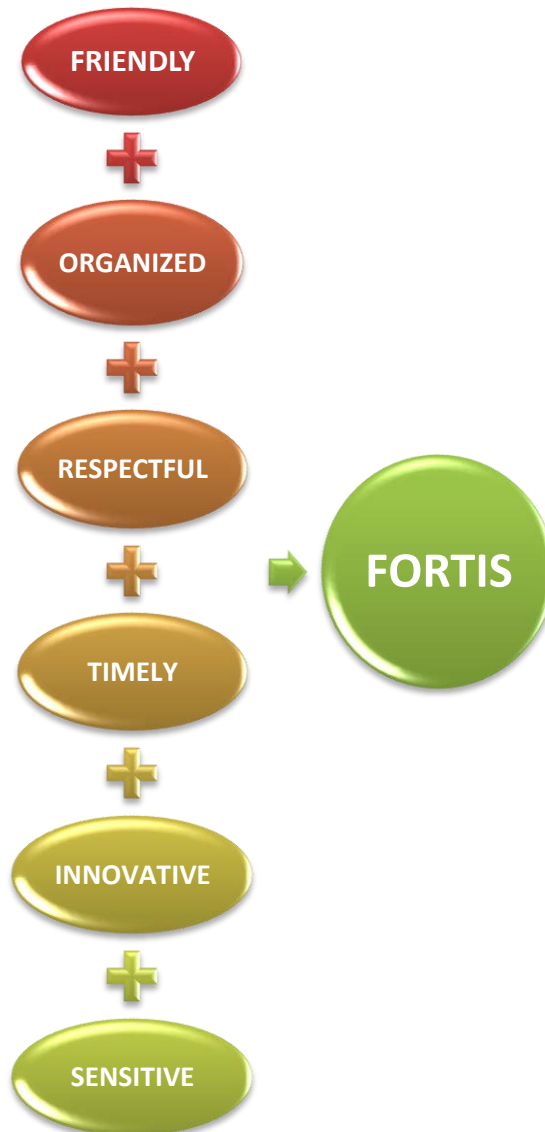
To have an overall orientation / induction of the hospital setting.

Objectives:

1. To get an overview and develop understanding of the hospital's functioning.
2. To gather knowledge about the process flows of major clinical and non clinical departments in a hospital.
3. To help the management study and address some issues/problems associated with some specific operational area/department.

Section-A

Hospital Orientation



1. History:

Fortis Healthcare has been established in the year 1996 with its First Hospital commencing in 2001 at Mohali with a vision to become a global leader in the field of integrated healthcare.

Head quartered in New Delhi, Fortis which has acquired Escorts Heart Institute and Research Center Limited in September 2005, has operations in Amritsar, Bangalore, Chennai, Faridabad, Jaipur, Kolkatta, Kota, Mohali, Noida, New Delhi, Raipur and Mumbai.

We one of the fastest growing integrated healthcare providers with multi-vertical presence that touches millions of lives across 10 countries including Australia, Canada, Dubai, Hong Kong, India, Mauritius, New Zealand, Singapore, Sri Lanka and Vietnam.

Fortis Healthcare has multi-vertical presence in emerging markets in different healthcare verticals ranging from **primary healthcare, day care specialty healthcare, hospitals, dental clinics and diagnostics.**

With the additions of Hospitals in Mauritius, Bhiwani, Kota and S.L. Raheja in Mumbai & Ten Wockhardt Hospitals, today our combined network comprises over 75 hospitals with more than 12,000 beds, 580 primary care centers, 188 day care specialty centers, 190 diagnostic centers and a talent pool of over 4,000 doctors and 23,000 employees making it amongst the largest integrated healthcare delivery networks in Asia Pacific.



Fortis Ft. Lt. Rajan Dhall Hospital, Vasant Kunj, New Delhi, started operations in July, 2006 is a 200 bed NABH certified multi-specialty tertiary care hospital. Spread over a sprawling 1, 50, 000 sq. ft, it is a manifestation of Fortis Healthcare's vision.





2. THE FORTIS LOGO:

“A HEALING PASSION”

The **two hands** that fuses seamlessly with a **human form**, express our **reassuring approach** to healthcare.

GREEN is the colour of healing and is symbolic of our steadfast focus: to ensure the health and well-being of those we minister to.

RED is expressive of the dynamic zeal with which we strive to make it a reality.

3. Vision:

Fortis Healthcare Limited was established in 1996 by its founder, Late Dr. Parvinder Singh. His vision of medical care was,

“To create a world class integrated Health Care delivery system in India, entailing the finest medical skills combined with compassionate patient care.”



4. Mission:

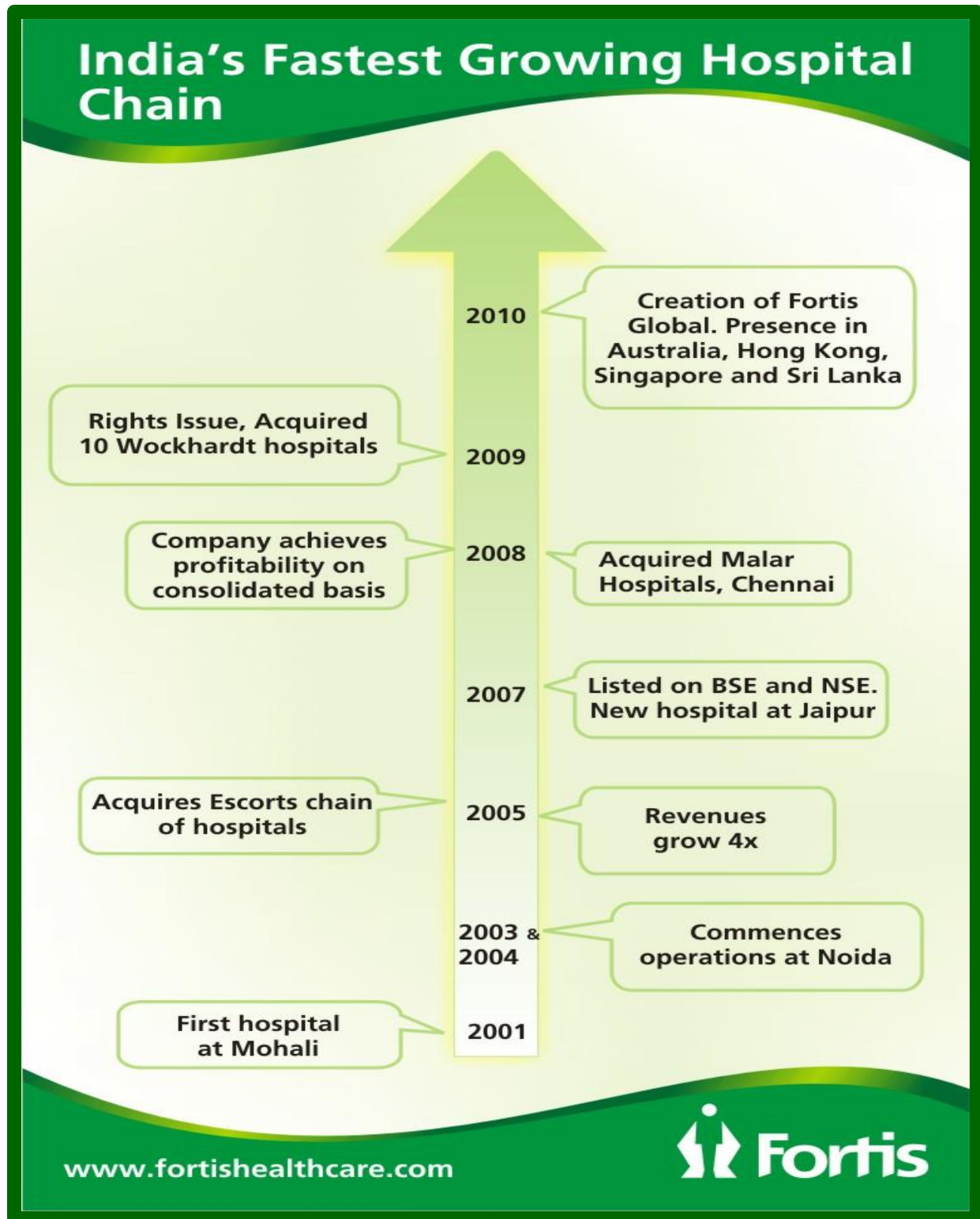
To become an Integrated Healthcare delivering organization guided by quality, excellence, technology and compassionate patient care.

5. Values:

They serve as a guideline for the routine conduct of each Fortisian. The core values of Fortis Healthcare are:

Values	Descriptors
Patient Centricity	•Commit to 'best outcomes and experience' for our patients. •Treat patients and their caregivers with compassion, care and understanding. •Our patients' needs will come first.
Integrity	•Be principled, open and honest. •Model and live our 'Values'. •Demonstrate moral courage to speak up and do the right things.
Teamwork	•Proactively support each other and operate as one team. •Respect and value people at all levels with different opinions, experiences and backgrounds. •Put organization needs' before department / self interest.
Ownership	•Be responsible and take pride in our actions. •Take initiative and go beyond the call of duty. •Deliver commitment and agreement made.
Innovation	•Continuously improve and innovate to exceed expectations. •Adopt a 'can-do' attitude. •Challenge ourselves to do things differently.

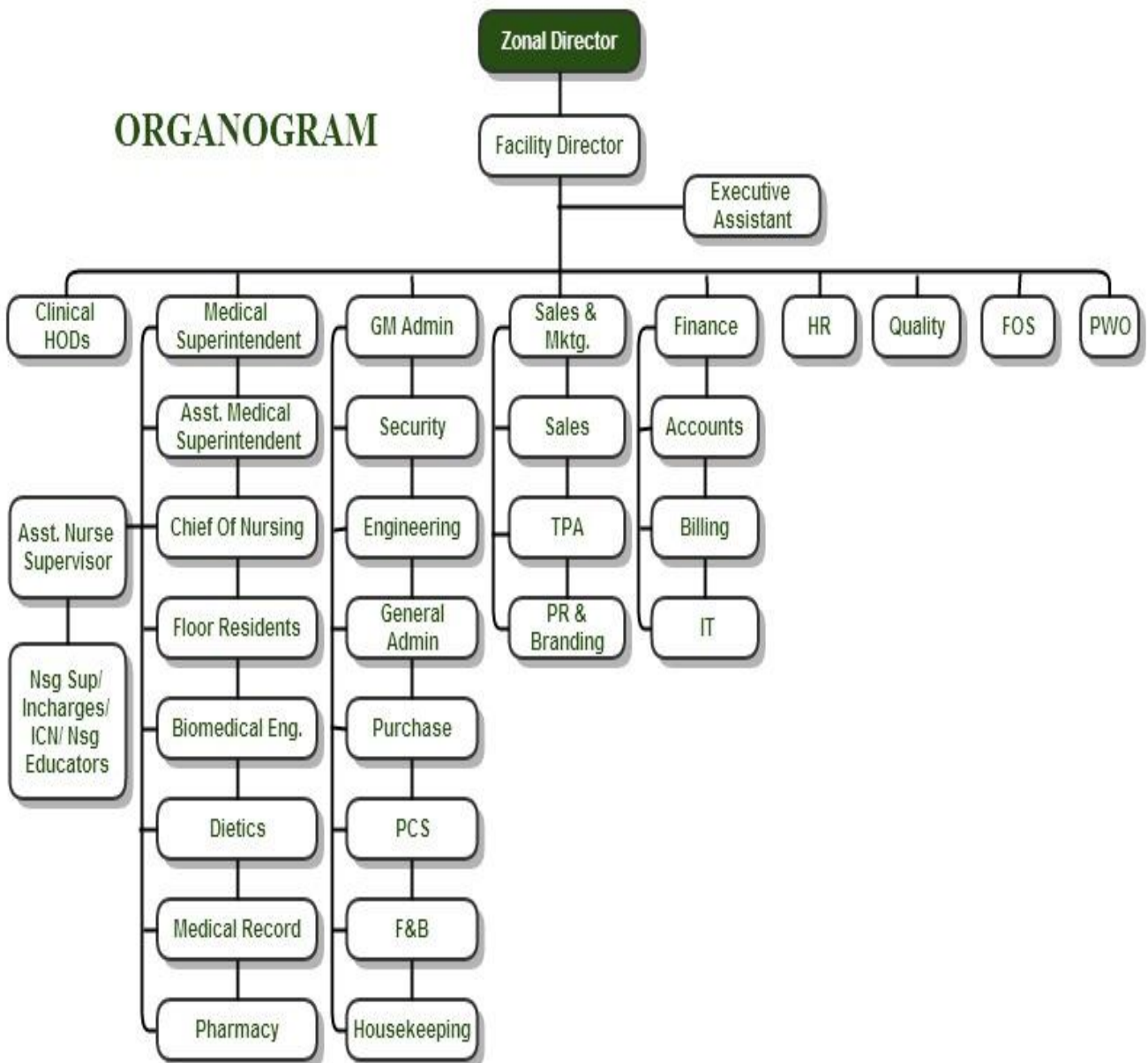
6. Milestones.



7. Committees in the Hospital:

1. Executive Council Committee
2. Quality and Patient Safety including Medical Record Committee
3. Safety Committee(Disaster Management and Radiation Management Committee)
4. Sentinel Events Committee
5. Blood Transfusion Committee
6. Brain Death Committee
7. Pharmacy and Therapeutic Committee (including AMS)
8. Medical Audit Committee
9. OT Committee
10. HR Committee including Credentialing & Privileging Committee and prevention of Sexual Harassment Committee.
11. Morbidity and Mortality Committee
12. CPR Committee (Including CPR Analysis Committee)
13. Purchase Committee
14. Research & Ethics Committee
15. External Authorization Committee

8. Organ gram:



9. SUPER-SPECIALITY:

- Cardiology
- Cardiac Surgery
- Nephrology
- Urology Including Renal Transplant
- Pulmonology & Thoracic Surgery
- Diabetology & Metabolism
- Joint Replacement
- Rheumatology
- Neuroscience

10. MULTI-SPECIALITY:

- Internal Medicine
- Critical Care
- Minimal Access, Bariatric & GI Surgery
- ENT
- Pediatrics
- Pediatric Surgery
- Plastic Surgery
- Gynecology & MNAGCS
- Interventional Radiology
- Oncology(Surgical)
- Oncology(Radiation)
- Dermatology

SECTION B

PROJECT REPORT

ON

“Process flow mapping, determining the TAT (Turn Around Time) and strategy evolvement for improving TAT of Preventive Health Check-up”

1. INTRODUCTION:

The study focused on Preventive Health Check up Department, basement of Fortis Ft. Lt. Rajan Dhall Hospital, New Delhi.

Front office, outpatient department and Preventive Health Check-up is the mirror of the hospital, which reflects the functioning of the hospital being the first point of contact between the patient and the hospital staff.

Patient visits PHC for preventive health checkup packages-

- Basic Health Package (Add on packages can be availed along with the BHP)
- Add on packages-
 - Audiometry package
 - Thyroid package
 - Asthma package
 - Ortho package
 - Kidney package
 - Cardiac package
- Executive Health Package
- Full Body Package
- Kids premium Health Package (Age group 5-14)

Preventive health checkup turnaround time is a vital measure of performance for a number of hospitals.

For hospitals, reducing the room turnaround time leads to increased revenues as well as increased patient satisfaction. If a room is ready sooner, a waiting patient is required to spend less time in the department.

Through the years, the Health Care industry has been looking at different ways to optimize the utilization of resources. Now, the correct design of the processes will make the difference between optimization versus just using automation technology. The processes are affected by technology as well as by the people using the new technology. The Fortis Ft. Lt. Rajan Dhall Hospital, New Delhi is at this cross roads preparing to employ messaging technology, in addition to their current HMIS, and at the same time dealing with space shortages.

The analysis presented in this document is based on the observation of data for PHC process by manpower efforts and the impact of technology to minimize the problems coming in the process of PHC. Based on Fortis Operating System analysis methodologies, the problems of how to manage the smooth process flow of PHC i.e. from registration to out time, which means the proper utilization of manpower so that all the steps in process flow will be completed in time.

The specific objectives of operation planning and control are to establish routes and schedules for work that will ensure the optimum utilization of resources and to provide means for ensuring the operation of the hospital in accordance with these plans The objective of this

training was to study the process flow of PHC to decrease the turnaround time by removing the problems and reasons for delays in PHC process.

2. Turnaround time:-

The total turnaround time (TAT) extended from the billing time till patient enters the doctors chamber for final consultation. For Fortis hospital, New Delhi it is completed within 4:30 hours (including final consultation).

In Fortis Hospital, routine PHC starts at 8:00A.M. and we have to decrease the time and to achieve the target of 90% for PHC.

Target= PHC's within defined TAT/Total no. of PHC's

Table 1
Process Definition: According to Fortis Operating System

Metric	Definition	Target	Calculation Methodology	Outliers	Source of Data	Comments
%age PHCs completed within Defined TAT	%age completed within 4:30 hrs (including final consultation). It starts from the billing time till the patients enters doctor chamber for final consult.	90%	Calculation is done from the billing time till patient enters the doctors chamber for final consultation.	Additional packages; test taken by the patients over and above whole body and comprehensive; but basic packages to be included.	Manual/HIS	a) In cases where the patient does not want to take final consult-written consent needs to be taken and everything needs to be documented. b) For corporate packages final report ready time needs to be taken within 4:30 hrs, if consultation is also a part of corporate package than chamber entering

						time of patient has to be taken as package completing time.
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3. BENEFITS OF IMPROVING PHC PROCESS:-

Improving the PHC processes has distinct benefits for patients, the service and for health professionals.

Benefits for patients:-

- Identifying expected out time of PHC can help patients to plan for when they go home.
- Patient's experiences can be improved when they have more information about their care and they feel included in the decisions they also understand what has happened and who to contact in case of any doubts.
- Patients have more realistic expectations of the care they will receive, feel part of the care process, an active partner and not disempowered.
- Patients only stay in hospital for the optimum amount of time for their health check up.

Benefits for health professionals:-

- Improved PHC process make professionals working lives easier and clearer helps in avoiding unnecessary gaps.
- Seeing their role as part of the whole system with each part impacting on the effectiveness of every other part.
- The development of proactive processes and taking a more managed care approach to their work, leading to greater job satisfaction
- Professionals have an increased sense of responsibility, recognition and support for the work they contribute.
- Clinical team members will be directly contributing to improving the patient's experience of healthcare.
- Avoidance of blame and disputes over responsibility for delays.

Benefits for the service:-

- Health and social care can work as a whole system, supported by a managed care approach, resulting in improved quality, better match between demand and capacity, and better use of resources.
- Improved PHC processes to improving patient flow and the effectiveness and efficiency of the system: right patient, right place, and right time.
- Increased patients appointment will be available for organization, reducing queues and cancellations.
- More effective communication between hospital and community will mean more streamlined services for all.

4. Parameters-

What defines a successful process is –

- Clear instructions for care.
- Coordination of arrangements following process so that the patient has all the support and equipment necessary.
- Time taken to treat a patient
- 90% PHC completion before 4:30 hours.

5. Stakeholders for entire assets and individual process.

STAKEHOLDER MAP: WHO ENSURED THAT WE STICK TO THE PROCESS?

Table 2

S. NO.	Activity	Tools required for activity	Responsibility	Turn Around Time	Frequency of Step	Performance indicator
1	Customers appointment is scheduled for the desired PHC package and the appointment date and time is informed as per the booking process.	Telephone	PHC coordinator	Immediate	As per call/customer flow	Desired appointment is scheduled
2	PHC customers are informed about the precautions they need to take like fasting (12 hours), medication etc. and other information related to the packages	Telephone	PHC coordinator	Immediate	As per customers flow	Accurate details provided
3	For scheduled appointments, all concerned departments are informed about the number of appointments	Mail	PHC coordinator	Immediate	As per customers flow	Correct information is passed onto different departments
4	Customers arrive at PHC reception as per their appointments		PHC coordinator	Immediate	As per call/customer flow	N/A

5	Client is registered and billed as per the billing process SOP	FO Module	FOA	Immediate	As per customers flow	Client registration and billing completed correctly
6	PHC flow chart is shared with customers and is explained		FOA	Immediate	As per customers flow	Correct information is shared in a clear and concise manner
7	As required, customers are escorted to the various departments		PHC coordinator	Immediate	As per customers flow	Customers satisfaction
8	All investigation reports are compiled and appointment for final consultation with doctor is fixed		PHC coordinator	Immediate	As per customers flow	Correct reports are compiled and appointment is fixed
9	Generate the summary of all the customer reports	Computer and printer, prescription form	MT/Consultant	Same Day	As per customers flow	Summary is generated
10	Final PHC reports with summary are compiled and handed over to the customers		PHC coordinator	Same Day	As per customers flow	Reports and summary are handed over to the customers
11	For corporate, Pre-employment and executive checkups all reports are compiled with medical summary and dispatched to the respective companies.	Computer and printer	PHC coordinator	Daily basis	As per customers flow	Correct submission of reports

12	Dispatch and credit bills to corporate. a) All credit bills generated are sent to corporate every 15 days. b) Prepare covering letter. c) Attach an excel sheet having details of the employees for which the bill has been raised. d) Compile all bills with covering letter and the authorization letter which has been received from the corporate e) Credit bill update sent to finance after dispatching the bills.	Computer and printer	PHC coordinator	Not defined	Every 15 days	Correct and timely dispatch of bills
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6. PHC Services

The PHC services were provided in the following specialties:

1. Investigations

- Complete Haemogram with ESR
- Blood Sugar (F)
- Blood Group- Rh typing.
- Complete Lipid Profile
- Serum creatinine, urea
- Serum Uric Acid
- Liver Function Test
- TSH-Thyroid Test
- Serum Electrolytes(Na/K/Cl)
- Serum Calcium and Phosphorus
- Urine(Routine and Microscopic)
- ECG
- TMT/ Echocardiography
- PFT
- X-Ray Chest (PA)
- USG (Whole abdomen)
- Dexa Scan Single site

2. Consultations with:

- Cardiologist
- Ophthalmologist
- Internal Medicine Specialist
- Gynecologist
- Dietician
- Dentist

7. RATIONALE OF THE STUDY:

Preventive health Check up is the important service provided by the hospitals as it is the point of contact between a hospital and the community. Many patients gain their first impression of the hospital from the PHC department.

Successful and efficient management of PHC can lighten the burden. Increasing competition in health care sector has made it necessary to improve satisfaction of patient and staff, and front office becomes a key area which can make the reputation of the hospital.

In today's fast growing world, customer is looking for hassle free and quick services. Meeting the customer requirement by the medical institutes with its limited resources is the challenge. Therefore, periodical study of process and services of front office is required for continuous improvement to achieve service excellence.

The study was conducted at the PHC department of Fortis Flt. Lt. Rajan Dhall hospital, New Delhi.

Therefore it was felt that there is a need to study the processes, functioning of all departments, identify the customer related issues at various contact points and analyze the finding. The finding of the study would serve as guideline for information for future improvement, modification in the knowledge, processes, use of facility and optimum utilization of human and material resources.

PHC services in hospital are having queuing and waiting time problems.

Various factors affecting the services of PHC are:-

- Arrival pattern or input rate of patient at the different departments.
- Service time of various clinics of PHC

Since the number of consumers is large and the treatment should be given within a day the bottlenecks W.R.T. the same must be identified and dealt with.

8. JUSTIFICATION:

With increasing competition, the waiting period is likely to serve as primary cause for decreasing popularity and dissatisfaction for patients.

The patient satisfaction surveys conducted by the hospital on an ongoing basis also indicated that the patients were increasingly dissatisfied with the inordinate delay in the processing of their PHC.

9. SCOPE:

Scope included PHC process and development of processes for the all departments so that the turnaround time can be reduced. This can be achieved by constant monitoring of the flaws and delays in the steps in the process, so that it can be rectified and turnaround time can be reduced.

10. AIM:

To decrease the turnaround time for getting more patients appointments in PHC department.

11. OBJECTIVES

- To determine flow of patient in the PHC .
- To remove the flaws and reasons for delays in turnaround time.
- To determine waiting time in PHC.
- To understand the bottlenecks in the patient flow w.r.t. shortage of equipments, non availability of consultant and inadequate training of PCC's(patient care coordinator)
- To analyze the collected information and suggest recommendations for the same

12. REVIEW OF LITERATURE:

A study on out patient satisfaction at a super specialty hospital in India

Dr. S. K.Jawahar MHA (AIIMS). DNB (Health Administrator)

The study was conducted among 200 patients attending OPD of Sree Chitra Tirunal institute for medical sciences and technology, Thiruvananthapuram, Kerala. The study was done to know the satisfaction level of patients and also get a feedback about the services provided in the outpatient department. The patients were randomly selected from various specialties. In order to get the details from patients, a questionnaire was designed to include question eliciting awareness of patients about the outpatient department services, logistic arrangements, waiting time, facilities, behavior of staff and support services.

It was found that majority of the patients are satisfied with the clinical services provided. It was noted that there is a scope for improvement of the outpatient department services. It was concluded that OPD services form an important component of hospital services and feedback of patients are vital in quality improvement.

Inter-Relationship between Clinical Departments in Treating Outpatients

Dr. S.R. Shambulingaiah

The study was taken up in the set up of SDM hospital, Dharwad of northern Karnataka. The study was undertaken with the objective to study the functioning and problems of OPD service areas in the SDM hospital setup and to seek the feedback from the patients regarding the existing facilities, functioning style and needs.

Random purposive sampling technique was adopted for the selection of sample. Doctors of various clinical departments and patients attending OPD's were considered as respondents of the study. A sample of minimum 51 doctors and 57 patients were chosen. It was concluded from the study that the Outpatients of SDM Hospital were satisfied with the existing facilities, fee structure and outpatient services and Para clinical facilities and according to doctors of

OPD's in SDM Hospital, facilities provided to outpatients were good, co-operation of supporting staff needs to be improved.

Measuring Patient Satisfaction: A Case Study to Improve Quality of Care at Public Health Facilities

Prahlad Raj Sodani, Rajeev K Kumar, Jayati Srivastava and Laxman Sharma

The study was conducted in outpatient department of district hospital, civil hospital, community health centre, and primary health centre of the eight selected districts of Madhya Pradesh. The main objective of the study is to measure the satisfaction of OPD (Outpatient Department) patients in public health facilities of Madhya Pradesh in India

Data were collected from OPD patients through pre-structured questionnaires at public health facilities in the sampled eight districts of Madhya Pradesh. The data were analyzed using SPSS. It was found that most of the respondents were youth and having low level of education. The major reason of choosing the public health facility was inexpensiveness, infrastructure, and proximity of health facility. Measuring patient satisfaction, patients were more satisfied with the basic amenities

at higher health facilities compared to lower level facilities.

Study on Process time of patients visiting OPD

Akilan Arunkumar (TATA INSTITUTE OF SOCIAL SCIENCES)

The objective of the study was to determine the flow of patients and the time spent in the hospital through arrival and service characteristics and to study the bottleneck in the patient flow.

1413 samples were studied through this study. The response time was calculated from finding the difference between the entry and exit time. Bottleneck analysis was also done.

They recommended that since reception centre being the primary bottleneck of the system, by increasing another service here, the system may be made to work in steady state. It was evidently proved through the simulations that having a single refraction chamber with few technicians, the hospital could reduce waiting time up to 25 percent, as well as better utilization of resources.

13. METHODOLOGY

The methodology adopted to achieve the study objective was:

Study type: An observational and exploratory type of study was conducted to understand the process flow of activities and identify the problems.

Study population: The present study was conducted among the patients attending the preventing health check up (PHC) department of Fortis Flt. Lt. Rajan Dhall Hospital, New Delhi.

Period of study: The period of data collection was from 14 April to 24 April 2014

SAMPLING:

Sampling technique: Simple Random sampling.

Selection of patient: The patients attending the PHC of the respective health care facility were selected.

Technique of data collection: Observational time was noted down for all the activities.

Tools of data collection: Permission to conduct the study was taken from the superintendents of the concerned health care facility. And data was collected down and findings were prepared in Excel.

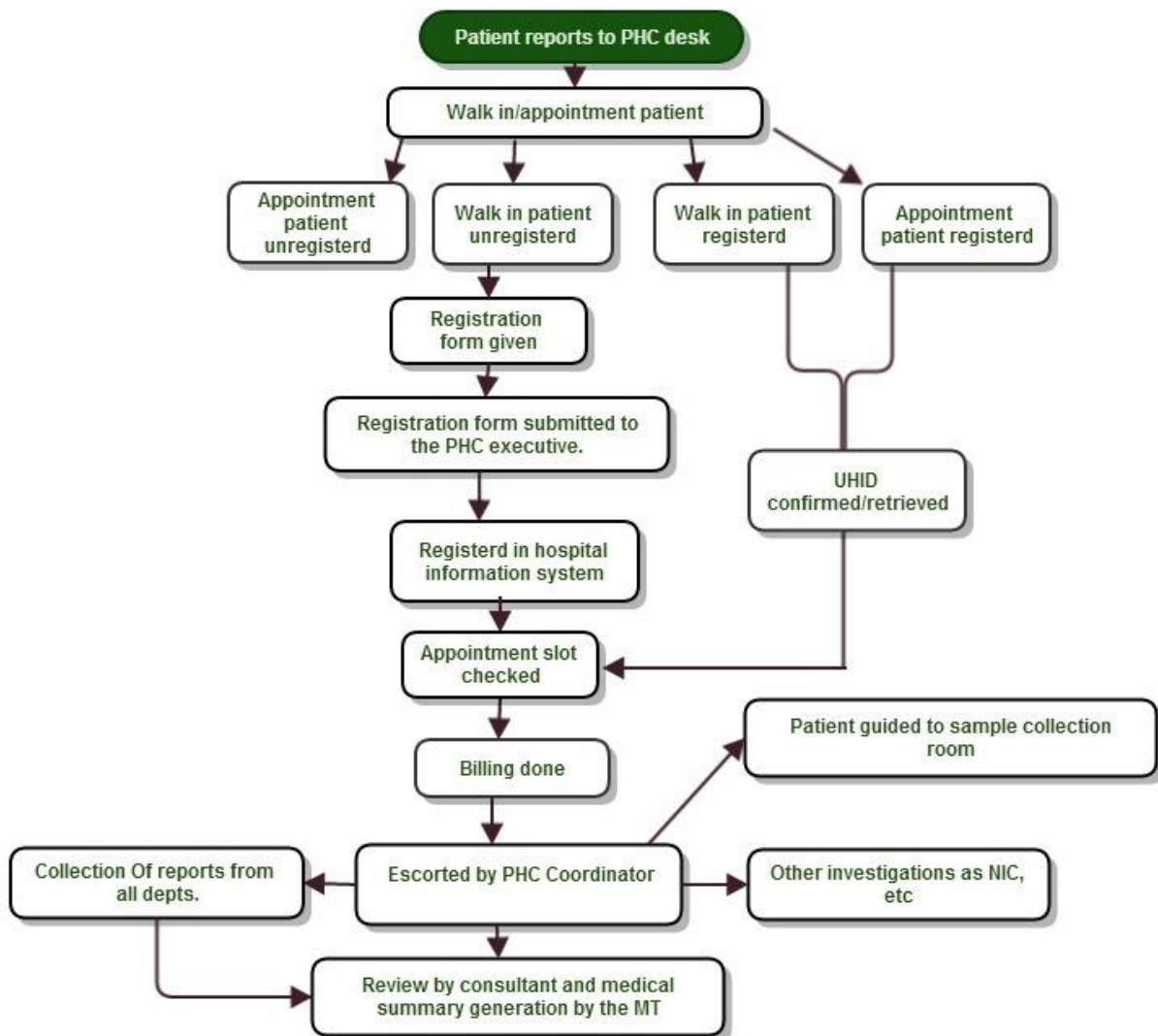
DATA COLLECTION:

The data is collected from both sources i.e. **primary and secondary**. For collection of data from **primary sources** detailed tracking sheet of PHC was prepared for noting the time for each activity.

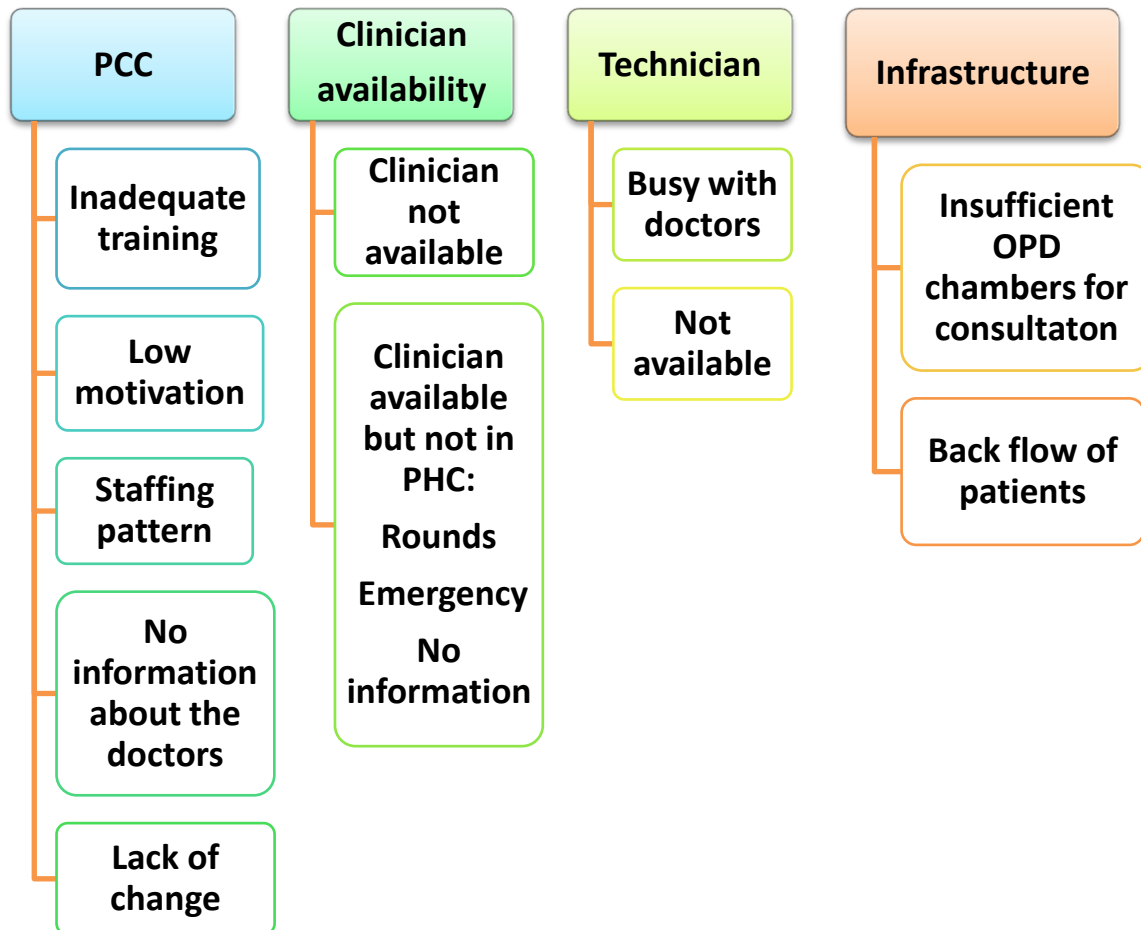
Primary data regarding the waiting time involved in the process of PHC was collected for 9 days with the help of excel sheet. The tracking sheet consisted information about the arrival time of the patient and then detailed waiting time for each activity. This was followed by calculation of average waiting time for each step.

Secondary data was collected from the front office to understand the flow of activities. During the study period front office was studied in depth to understand the processes and patient flow. Secondary data was collected from the front office duty manager and substantiated by personal observation.

Regular interaction was done with PCC and Front Office manager to understand the patient's perspective and identify the core issues.

14. PROCESS FLOW OF PHC PATIENTS:

15. CONTRIBUTING FACTORS FOR PROLONGED WAITING TIME:

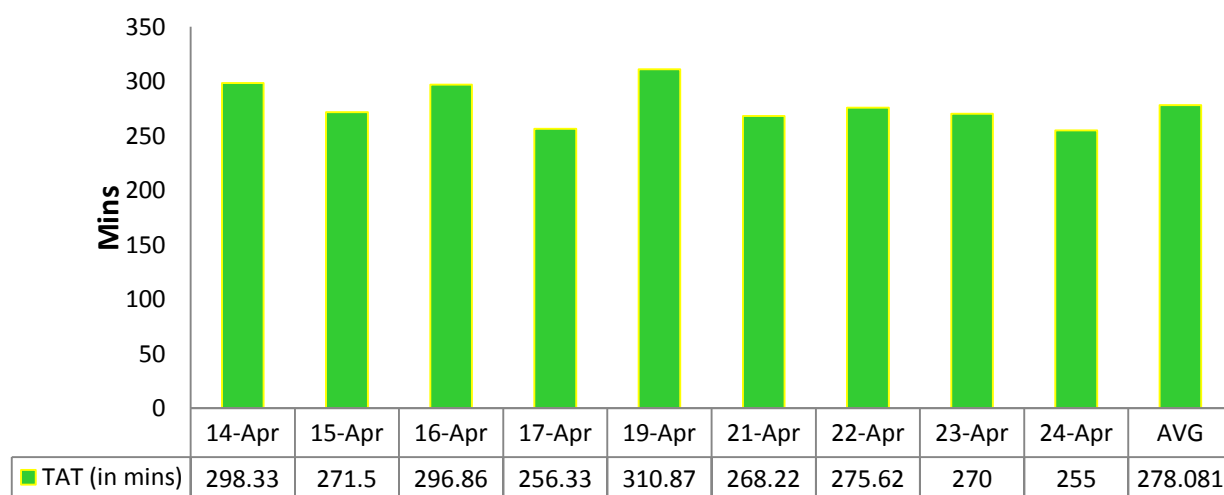


16. STUDY FINDINGS:**a. TAT for Preventive health Checkup**

Data of 120 patients was collected for 9 days as shown below in graph 1 and TAT for each day was calculated and in the end average TAT which is 278 minutes (4hrs38mins) was taken out from the average TAT of 9 days.

Graph 1

Turn Around Time for Preventive Health Checkup of 120 Patients collected for 9 days.



Date	14	15-Apr	16-Apr	17-Apr	19-Apr	21-Apr	22-Apr	23-Apr	24-Apr	AVG
In Hours	4:58:33	4:31:50	4:56:86	4:16:33	5:10:87	4:28:22	4:35:62	4:30:00	4:15:00	4:38:08

Average TAT divided into 4 categories:**1. Investigations**

1.1 Blood Sample

1.2 ECG

1.3 X-Ray

1.4 Ultrasound

1.5 TMT

1.6 DEXA Scan

1.7 PFT

2. Other activities

1.1 Breakfast

1.2 Changing Clothes

3. Consultations

3.1 Males

3.1.1 Dietician

3.1.2 Cardiology

3.1.3 Ophthalmology

3.1.4 Internal Medicine

3.1.5 Dentist

3.2 Females

3.2.1 Dietician

3.2.2 Cardiology

3.2.3 Ophthalmology

3.2.4 Internal Medicine

3.2.5 Dentist

3.2.6 Gynecology

4. Waiting time

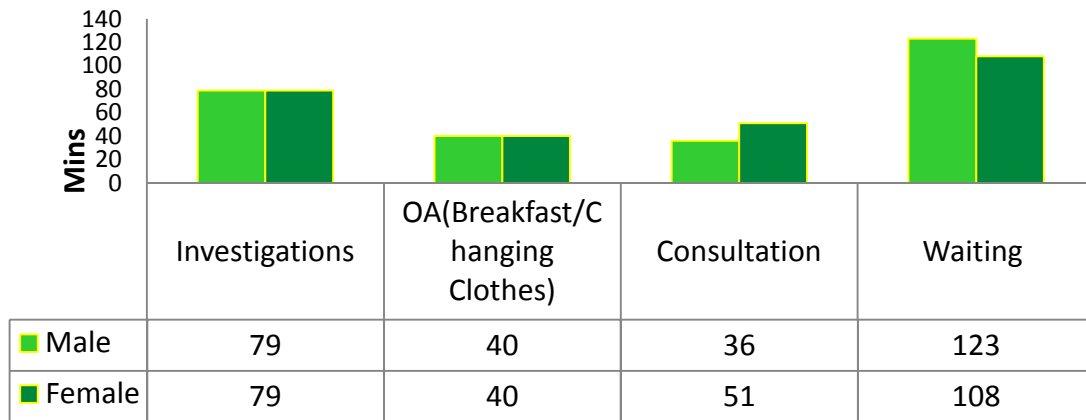
4.1 Males

4.2 Females

Table 3-Average time for Males and Females for various activities in Preventive Health Checkup.

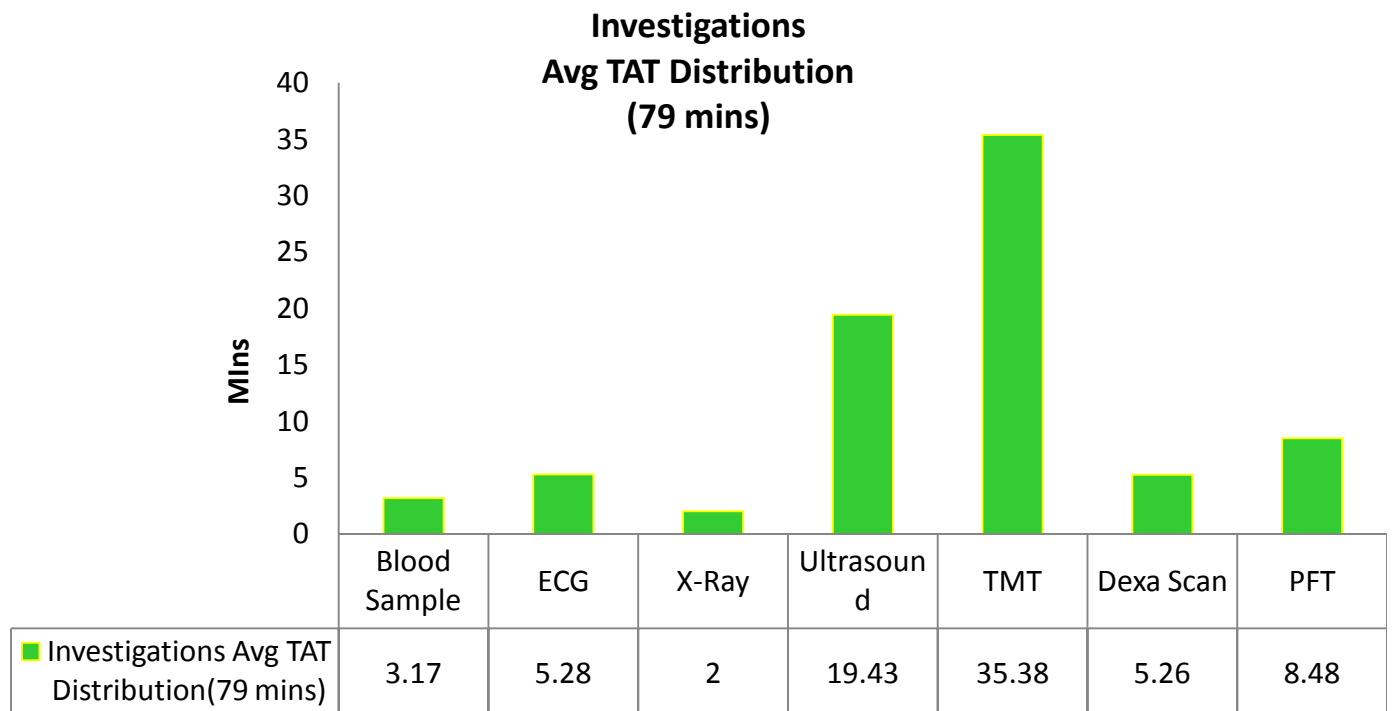
S.No.	Categories	Avg. TAT (Males)	Avg. TAT(Females)
1	Investigations	79	79
2	Other Activities(Breakfast/changing clothes	40	40
3	Consultations	30	47
4	Waiting time	129	112
	Total	278	278

Graph 2

Average TAT Divided in 4 Categories**b. Investigations TAT**

TAT for each investigation was find out; for blood sample, ECG, X-ray, Ultrasound, DEXA scan, PFT is 3.17mins, 5.28mins, 2mins, 19.43mins, 35.38mins, 5.26mins, 8.48mins respectively which is shown below in graph 3.

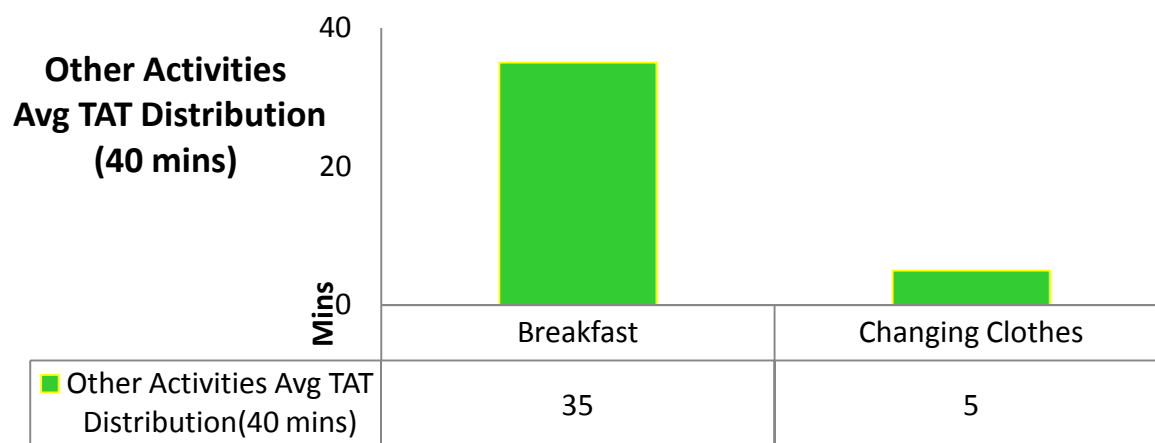
Graph 3



C. Other Activities AVG TAT

Other activities average TAT include changing clothes before going for investigations and breakfast after ultrasound which comes out to be 40mins from which 5mins is for changing clothes as shown below in graph 4.

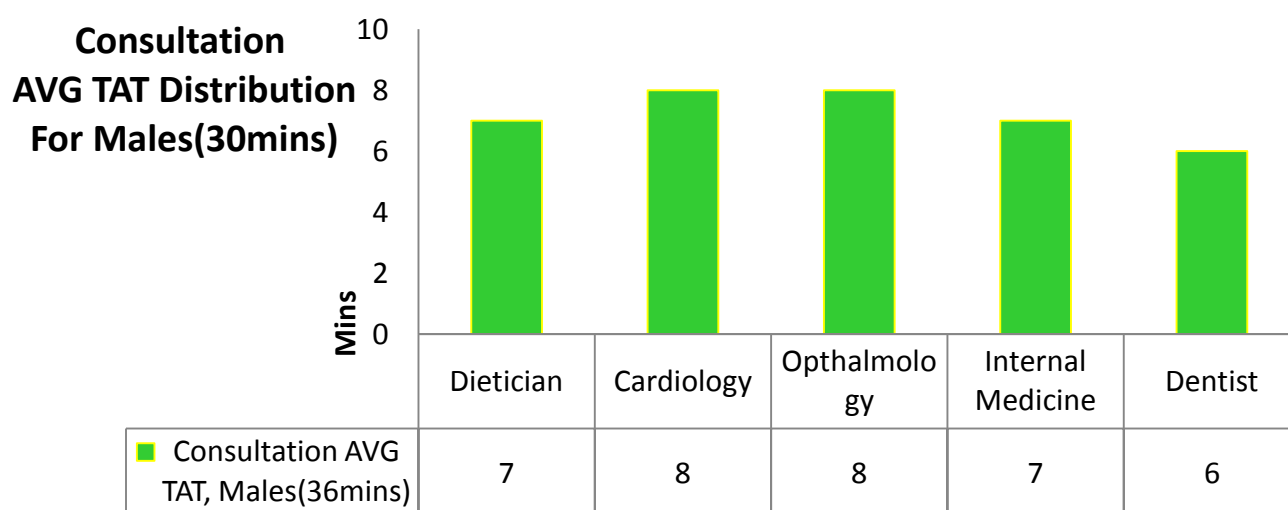
Graph 4



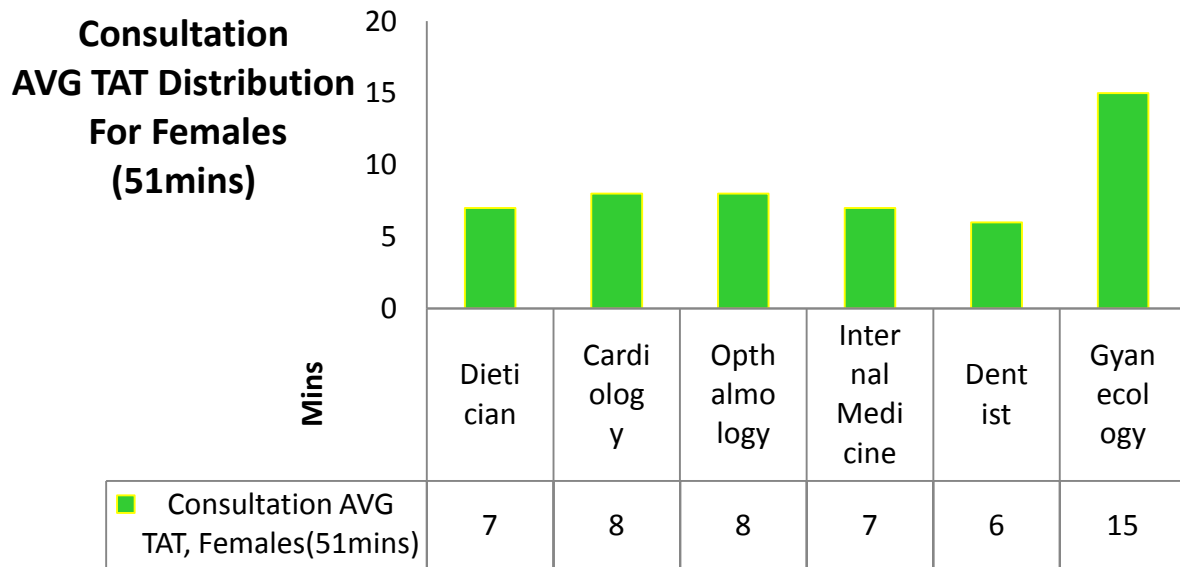
d. Consultations AVG TAT

Consultation average TAT is different for males and females. For males it is 30mins which is distributed among Dietician (7mins), cardiology (8mins), ophthalmology (8mins) and internal medicine (7mins) as shown below in graph 5. And in females only one extra consultation was there; Gynecology (17mins) and rest is same as in males which are shown below in graph 6.

Graph 5



Graph 6

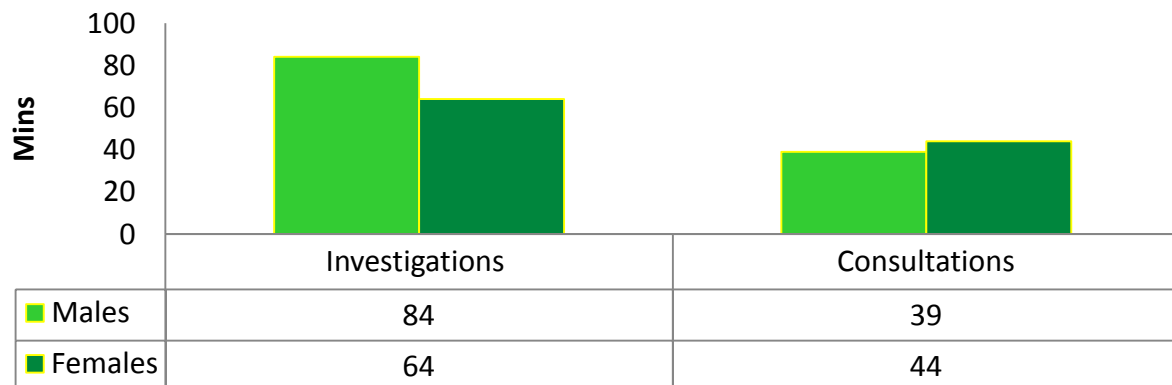


Average Waiting TAT

Waiting TAT is divided into investigation average TAT and Consultation average TAT for males and females separately which is 84, 39mins respectively for males and 64, 44mins respectively for females as shown in below graph 7.

Graph 7

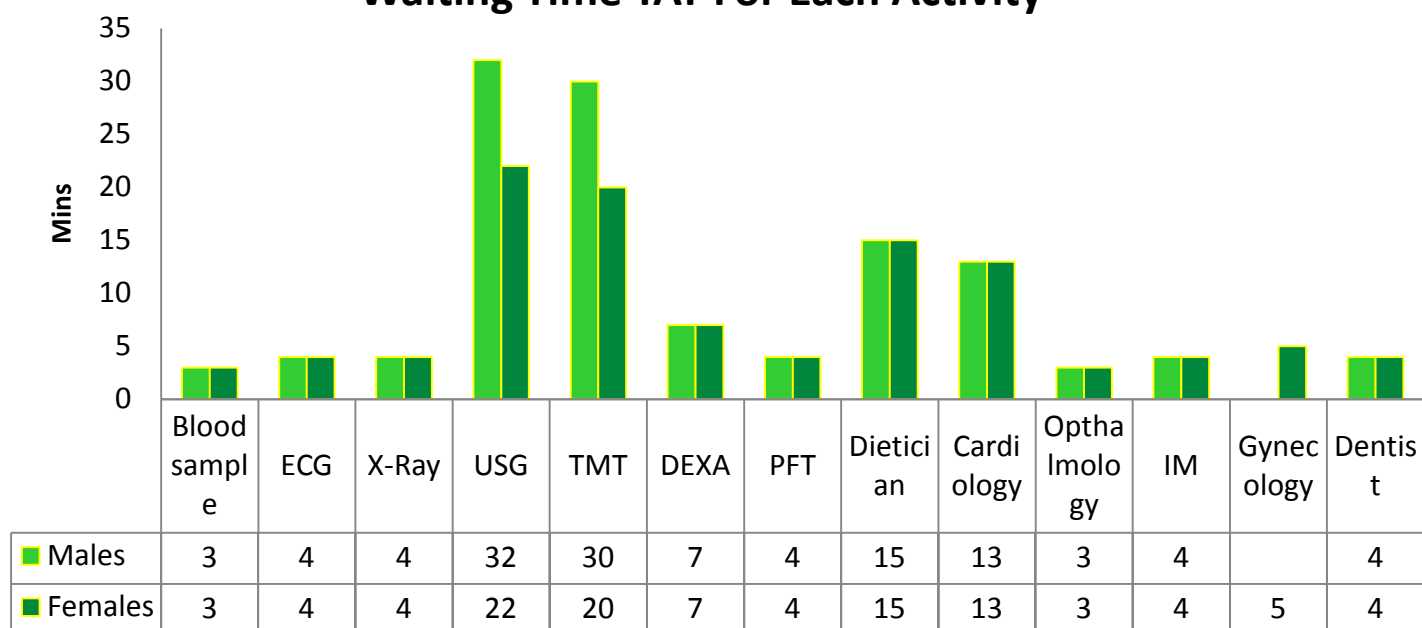
Waiting time for males and females during investigations and consultations.



Further waiting TAT was classified into each and single activity which is shown in below graph 8.

Graph 8

Waiting Time TAT For Each Activity



ACCORDING TO Fortis Operating System (FOS) TAT mentioned is 4hours 30 Minutes (270mins)

Total no. of preventive health checkups was 120

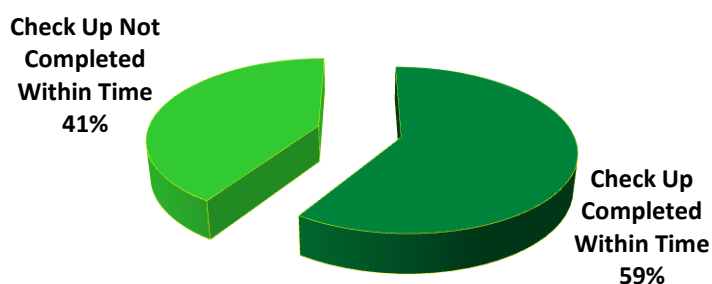
PHC's within defined TAT was 71

Target= PHC's within defined TAT/Total no. of PHC's

Target found out was 59.17% against 90% mentioned by FOS which is shown below in graph 9.

Graph 9

Percentage of Patients Completed Checkup Within Mentioned TAT Given By FOS



17. ACTIONABLE:

On the basis of the study following actionable were suggested:

Controllable Factors

- Inadequate training of the P.C.C.
- P.C.C. busy with other patients.
- Multiple calls

Uncontrollable Factors

- Doctors running late
- Doctors busy in rounds
- Unscheduled appointments of walk in patients
- Shortage of space

18. SUGGESTIONS:

- Providing process centric training and some knowledge about various common procedures to the PCC's.
- Advance preparation- option to fill registration forms online.
- Increasing the time slots for the doctors based on their consultation time.
- Introduction of doctors checklist to ensure that doctors come on time.
- It was observed during the study that most of times patients were told that doctors are on round during the OPD timings and they used to come late to OPDs. Therefore a checklist should be introduced which would contain information about doctors time in and out in the OPD.
- Keeping 30%-40% slots empty for walk-in patients or follow- up patients.
- Updating the patient in the morning about the doctor's schedule.
- Provision of books/novels/magazines, Wi-Fi, educational material, health talk, tea/coffee vending machine or a spiritual corner

19. CONCLUSION:

The final conclusion of the study is that though all the steps of the PHC process are interlinked, there are many activities that are independent and if their individual time is being monitored and controlled under the target range then this would help in reducing the turn around time.

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SECTION C

PROJECT REPORT

ON

A Study on Patient Satisfaction in PHC, Fortis Flt. Lt. Rajan Dhall Hospital

1. Introduction:

The study focused on Preventive Health Check up Department, basement of Fortis Flt. Lt. Rajan Dhall Hospital, New Delhi.

Front office, outpatient department and Preventive Health Check-up is the mirror of the hospital, which reflects the functioning of the hospital being the first point of contact between the patient and the hospital staff.

Patient visits PHC for preventive health checkup packages-

- Basic Health Package (Add on packages can be availed along with the BHP)
- Add on packages-
 - Audiometry package
 - Thyroid package
 - Asthma package
 - Ortho package
 - Kidney package
 - Cardiac package
- Executive Health Package
- Full Body Package
- Kids premium Health Package (Age group 5-14)

It is essential to have an overview of theoretical notions of satisfactions and expectations of the customers, generalities in planning intensive care units, social system, doctor patient relationships, physician role and behavior, nurse behavior patient role and opinions. An organization exists to achieve its goal, the goal of hospital, whatever one may say, is always primarily to provide highest quality of patient care and other objectives are secondary. There are various factors which influence customer's expectations of services. They include efficiency, confidence, helpfulness, personal interest reliability. These are intrinsic factors. They influence the response of the hospital staff to the patient and his relatives. Intrinsic factors are susceptible to training. They can be improved by training when the performance does not reach the set standards. Accordingly, external factors exist. These are the outside reasons given by the employee. They include media influence, experience of others and contribute to customers expectations.

2. Parameters-

Patient's feedback forms

3. Benefits:

- It is the method to know about the flaws in the medical, nursing and other facilities.
- Its helps to know about the overall behavior of the staff.
- It helps to improve the staff potential and efficiency.
- It helps to know about the thinking of people regarding hospital.

4. Procedure:

First of all permission was sought from the hospital. Then we went to them as and when time was given. Questionnaire was distributed to personnel who were selected as sample and in some cases we explained the implications of the questions. Respondents were asked to fill up the set of questions as per instructions mentioned on them. They were specifically requested not to read all the items at once but to go throw each individual statement and answer it and then only move the next. Respondents were assured of the confidentiality of their responses. All respondents were encouraged to express their opinion freely and fairly. Precautions were also taken to obtained unbiased results.

5. Review of Literature:

A critical challenge for health service providers in developing countries is to find ways to make them more client-oriented. Indifferent treatment of patients, unofficial payments to providers, lack of patient privacy, and inadequate provision of medicines and supplies are common, yet are rarely acknowledged by traditional quality assessment methods. Assessing patient perspectives give users a voice, which, if given systematic attention, offers the potential to make services more responsive to people's needs and expectations, important elements of making health systems more effective (Krishna Dipankar Rao *et al.*, 2006). The main beneficiary of a good health-care system is clearly the patient. As a customer of health care, the patient is the focus of the health care delivery system. Customers who are merely satisfied often do not come back and organisation operating under this discipline of satisfaction outperformed the firms that did not provide satisfaction. The long-term survival of hospitals depends on loyal patients who come back or recommend the hospital to others (Yogesh Pai *et al.*, 2011). The concept of patient satisfaction is rapidly changing to customers' delight which means the patient is not only cured of his ailment during the hospital stay (Akoijam *etal.*, 2007). The degree of patient satisfaction can be used as a means of assessing the quality of health care and the personnel. It reflects the ability of the provider to meet the patients' needs. Satisfied patients are more likely than the unsatisfied ones to continue using the health care services, maintaining their relationships with specific health care providers and complying with the care regimens (Yousef Hamoud Aldebasi and Mohamed Issa Ahmed, 2011). Patients carry certain expectations before their visit and the resultant satisfaction or dissatisfaction is the outcome of their actual experience (Andrabi Syed Arshad *et al.*, 2012). Health care is changing rapidly.

Customers are educated and are demanding that we meet their needs. In the ideal service environment, we do not want to just meet the customers' needs; we want to "delight" the customer. It is important, then, to identify all of our customers (Marni Reisberg, 1996). Patient-Centered Care can improve treatment outcomes, and its implementation has become the focus of national and local efforts to optimize health and health care delivery. Patients' satisfaction with care is one of the pillars of patient-centered care. As such, results from patient satisfaction surveys (ie, patient experience of care measures) can be a driving force behind changes in health care delivery—with institutions and individual clinicians hoping for and actively seeking optimal survey scores.

The quality of service in health means an inexpensive type of service with minimum side effects that can cure or relieve the health problems of the patients. It is easier to evaluate the patient's satisfaction towards the service than evaluate the quality of medical services that they receive. Therefore, a research on patient satisfaction can be an important tool to improve the quality of services.

6. Objectives:

- To measure the level of satisfaction of the patients as an outcome of care in hospital.
- To measure the level of satisfaction of the patients as an outcome of care in hospital.

7. METHODOLOGY:

Study type: An observational type of study was conducted to understand the process flow of activities and identify the problems.

Study population: The present study was conducted among the patients attending the preventing health check up (PHC) department of Fortis Flt. Lt. Rajan Dhall Hospital, New Delhi.

Period of study: The period of survey was from 14 to 24 April @014

Sampling technique: Simple Random sampling

Selection of patient: The patients attending the PHC of the respective health care facility were selected for the feedback by sampling.

Technique of data collection: Survey (Patient Feedback form)

Tools of data collection: Structured questionnaire

Permission to conduct the study was taken from the superintendents of the concerned health care facility. All the patients were interviewed after they had consulted the doctor. The prescribing doctor was largely kept unaware of the procedure, except in unavoidable circumstances, to avoid the bias in their behavior with the patient.

A quantitative structured questionnaire was used to record information taking the key elements of socio demographic characteristics of the patients coming up for PHC.

Methodology for Data Analysis: The questionnaire which is shown on next page, was intended to know the administrative problems contain twenty statements in total. The count of responses is considered and for each type of response (4.Very good 3.Good 2.Average 1.Poor) and percentage is calculated.

DATA COLLECTION:

The data is collected from **Primary Source for which** questionnaire was used as a tool.

Primary data:

The data for the study was collected by administering the questionnaire and through observation method. Observation method is one of the most important and extensively used methods.

THE REASON OF YOUR VISIT

- Executive Health Check ☐
- Consultation by appointment ☐
- Walk-in patient without prior appointment ☐
- Follow-up visit ☐
- Diagnostics visit ☐
- Other ☐

REGISTRATION/ HELP DESK

4. Very Good 3. Good 2. Average 1. Poor

- The ease with which you could contact us ☐ 4 ☐ 3 ☐ 2 ☐ 1
- How was your registration experience? ☐ 4 ☐ 3 ☐ 2 ☐ 1
- Was our team efficient and courteous? ☐ 4 ☐ 3 ☐ 2 ☐ 1
- How well were you guided through all required processes? ☐ 4 ☐ 3 ☐ 2 ☐ 1
- Was the Registration desk/lounge well organised and clean ☐ 4 ☐ 3 ☐ 2 ☐ 1
- Please rate the location/directional signage in the OPD area ☐ 4 ☐ 3 ☐ 2 ☐ 1
- How efficiently did our team retrieve your information (if applicable)? ☐ 4 ☐ 3 ☐ 2 ☐ 1

MEDICAL AND NURSING PROCESS

4. Very Good 3. Good 2. Average 1. Poor

- Attention from our Doctors ☐ 4 ☐ 3 ☐ 2 ☐ 1
- Time spent by the Doctors in explaining diagnostics/treatment ☐ 4 ☐ 3 ☐ 2 ☐ 1
- Attention and efficiency of the medical support staff ☐ 4 ☐ 3 ☐ 2 ☐ 1
- How well were the required procedures and process explained? ☐ 4 ☐ 3 ☐ 2 ☐ 1

Please rate the sensitivity of our team to your privacy ☐ 4 ☐ 3 ☐ 2 ☐ 1

Please rate the quality of service

- Efficiency ☐ 4 ☐ 3 ☐ 2 ☐ 1
- Promptness ☐ 4 ☐ 3 ☐ 2 ☐ 1
- Care and warmth ☐ 4 ☐ 3 ☐ 2 ☐ 1

OTHER FACILITIES

Please rate the quality of:

- Chemist/Other Shops ☐ 4 ☐ 3 ☐ 2 ☐ 1
- Waiting Areas ☐ 4 ☐ 3 ☐ 2 ☐ 1
- Public Dining Options ☐ 4 ☐ 3 ☐ 2 ☐ 1
- Parking and Security ☐ 4 ☐ 3 ☐ 2 ☐ 1

BEHAVIOUR OF THE FORTIS TEAM

Overall level of service ☐ 4 ☐ 3 ☐ 2 ☐ 1

HOW DID YOU SELECT THIS FORTIS FACILITY

- Reputation ☐ Family physician ☐
- Repeat patient ☐ Corporate tie-up ☐
- Location ☐ Web-site/advertising ☐
- Other ☐ Friend/Family ☐

Would you recommend us to others ☐ yes ☐ no ☐ not sure ☐

OTHER COMMENTS**PERSONAL DETAILS**

Name: _____

Consultant Doctor _____

UHID No: _____ Date of Visit _____

Contact No: _____

Email: _____

Signature _____

8. Findings:

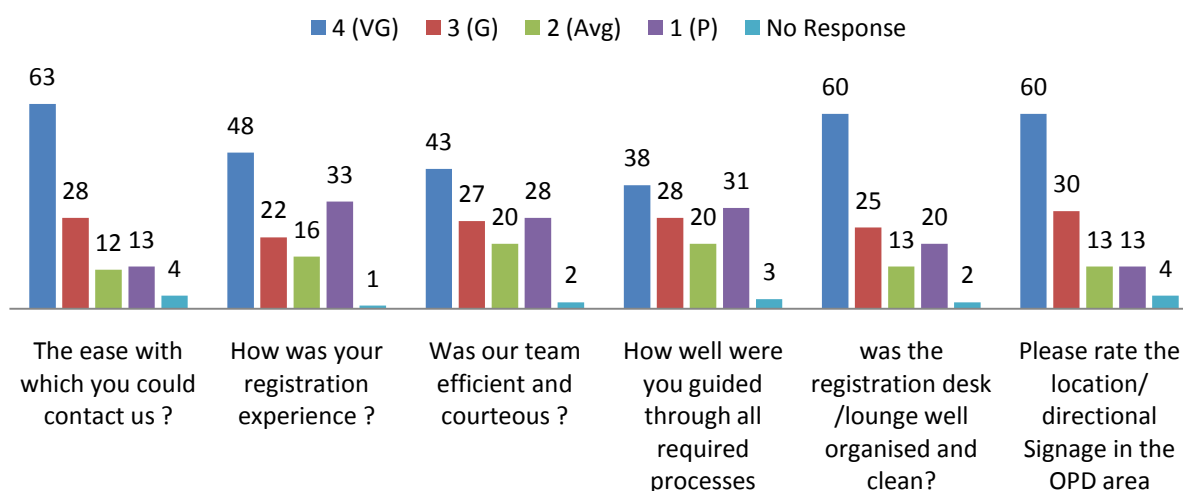
a. Registration/Help Desk

In the below Graph1, response of 120 patients are shown for the questions asked for Registration/Help Desk

- For Question 1:- “The ease with which you could contact us?” ;Out of 120, 63 marked very good, 28 marked good,12 marked average, 13 marked poor and 4 gave no response.
- For Question 2 :- “How was your registration experience?” ;Out of 120, 48 marked very good, 22 marked good,16 marked average, 33 marked poor and 1 gave no response.
- For Question 3 :- “How was your registration experience?” ;Out of 120, 43 marked very good, 27 marked good,20 marked average, 28 marked poor and 2 gave no response.
- For Question 4 :- “How was your registration experience?” ;Out of 120, 38 marked very good, 28 marked good,20 marked average, 31 marked poor and 2 gave no response.
- For Question 5 :- “How was your registration experience?” ;Out of 120, 60 marked very good, 25 marked good,15 marked average, 20 marked poor and 2 gave no response.
- For Question 6 :- “How was your registration experience?” ;Out of 120, 60 marked very good, 30 marked good,13 marked average, 13 marked poor and 4 gave no response.

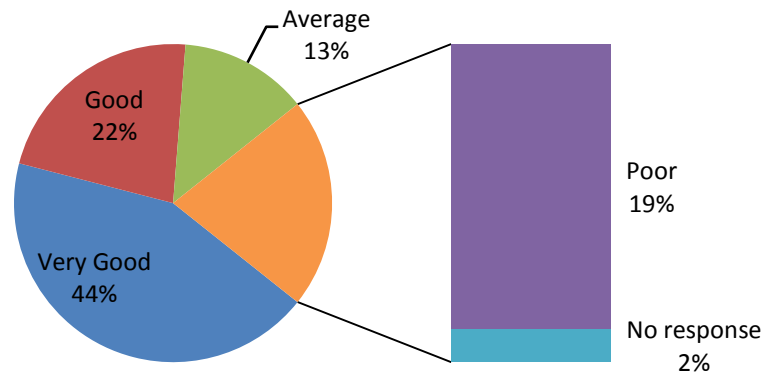
Graph1

Comparative Analysis Registration/Help Desk



In below Graph2, the percentage of the patient satisfaction level for the registration/help desk is shown as Very good, Good, Average, Poor and No response which is 44%, 22%, 13%, 19% and 2% respectively.

Graph 2
Patient Satisfaction Level For Registration Desk



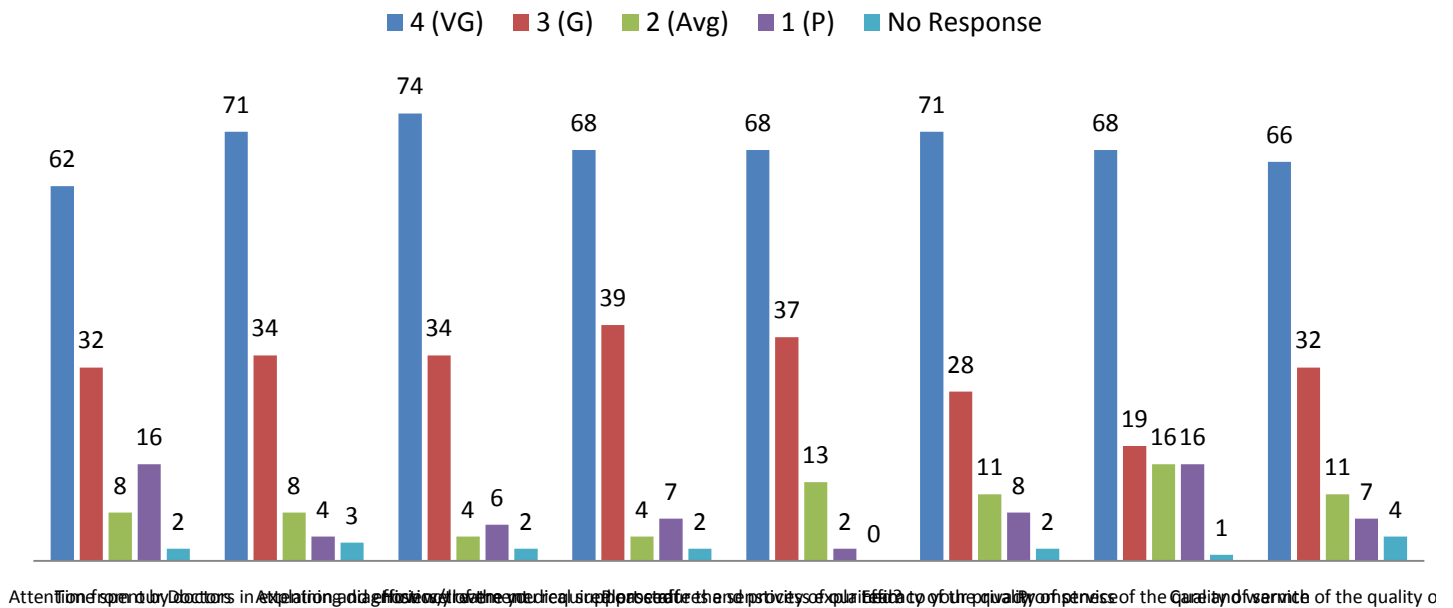
b. Medical And Nursing Process.

In the below Graph1, response of 120 patients are shown for the questions asked for Registration/Help Desk

- For Question 1:- “Attention from our Doctors” ;Out of 120, 62 marked very good, 32 marked good,8 marked average, 16 marked poor and 2 gave no response.
- For Question 2 :- “Time Spent pent by doctors in explaining diagnostics/treatment?” ;Out of 120, 71marked very good, 34 marked good,8 marked average, 4 marked poor and 3 gave no response.
- For Question 3 :- “Attention and efficiency of the medical support staff?” ;Out of 120, 74 marked very good, 34 marked good,4 marked average, 6 marked poor and 2 gave no response.
- For Question 4 :- “How well were you required procedures and process explained?” ;Out of 120, 68 marked very good, 39 marked good,4 marked average, 7 marked poor and 2 gave no response.
- For Question 5 :- “Please rate the sensitivity of our team to your privacy?” ;Out of 120, 68 marked very good, 37 marked good,13 marked average and 2 marked poor.
- For Question 6 :- “Efficacy of the quality of service?” ;Out of 120, 71 marked very good, 28 marked good,11 marked average, 8 marked poor and 2 gave no response.
- For Question 7 :- “Promptness of the quality of service?” ;Out of 120, 68 marked very good, 19 marked good,16 marked average, 16 marked poor and 1 gave no response.
- For Question 8 :- “Care and warmth of the quality of service?” ;Out of 120, 66 marked very good, 32 marked good,11 marked average and 7 marked poor and 4 gave no response

Graph 3

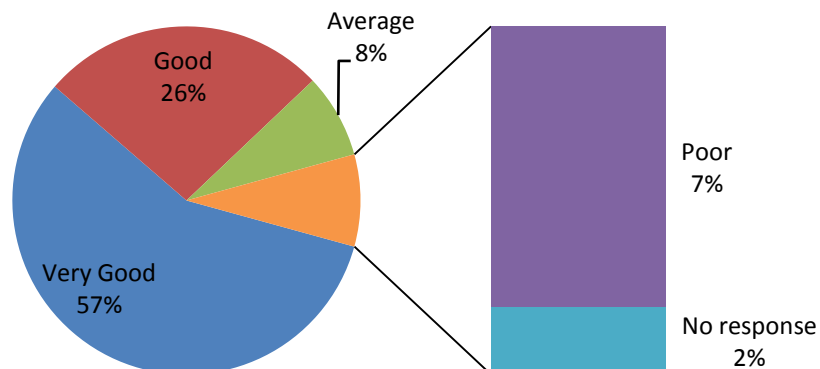
Comparative Analysis Of Medical and Nursing Process



In below Graph4, the percentage of the patient satisfaction level for the registration/help desk is shown as Very good, Good, Average, Poor and No response which is 57%, 26%, 8%, 7% and 2% respectively.

Graph 4

Patient Satisfaction Level For Medical And Nursing Process



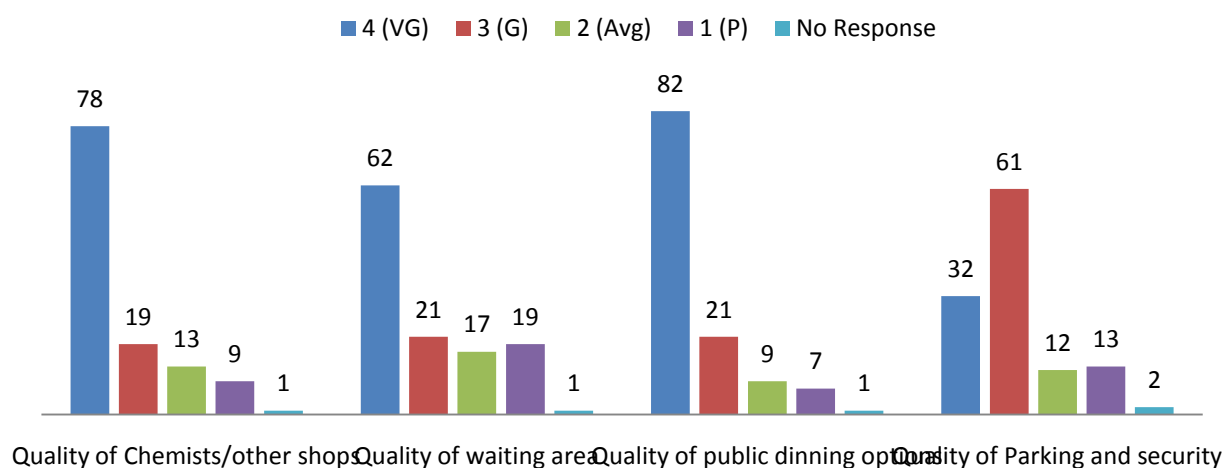
c. Other Facilities

In the below Graph1, response of 120 patients are shown for the questions asked for Registration/Help Desk

- For Question 1:- “Quality of Chemists/other shops?” ;Out of 120, 78 marked very good, 19 marked good,13 marked average, 9 marked poor and 1 gave no response.
- For Question 2 :- “Quality of waiting area?” ;Out of 120, 62 marked very good, 21 marked good,17 marked average, 19 marked poor and 1 gave no response.
- For Question 3 :- “Quality of public dining options?” ;Out of 120, 82 marked very good, 21 marked good,9 marked average, 7 marked poor and 1 gave no response.
- For Question 4 :- “Quality of Parking and security?” ;Out of 120, 32 marked very good, 61 marked good,12 marked average, 13 marked poor and 2 gave no response.

Graph 5

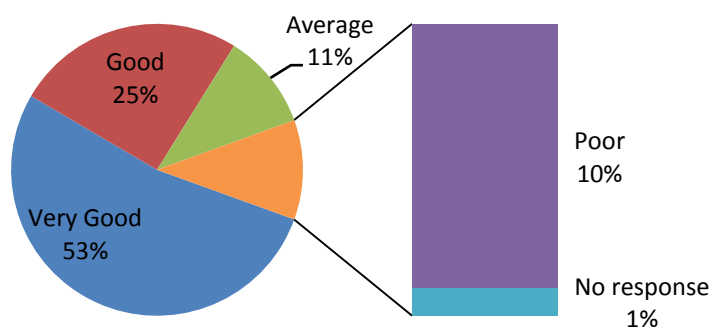
Comparative Analysis Of Other Facilities



In below Graph6, the percentage of the patient satisfaction level for the registration/help desk is shown as Very good, Good, Average, Poor and No response which is 53%, 25%, 11%, 10% and 1% respectively.

Graph 6

Patient Satisfaction Level For Other Facilities



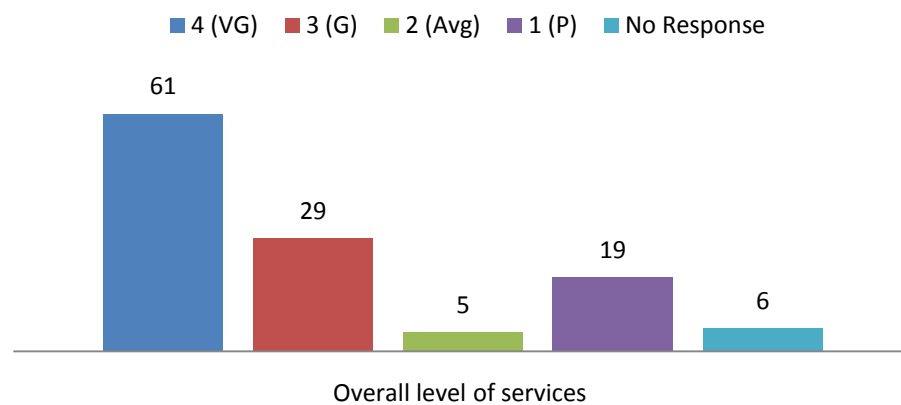
d. Behaviour of Fortisian Team

In the below Graph7, response of 120 patients are shown for the questions asked for Registration/Help Desk

- For Question 1:- “Quality of Chemists/other shops?” ;Out of 120, 61 marked very good, 29 marked good, 5 marked average, 19 marked poor and 6 gave no response.

Graph 7

Comparative Analysis Of Behaviour of the Fortisian team



In below Graph8, the percentage of the patient satisfaction level for the registration/help desk is shown as Very good, Good, Average, Poor and No response which is 51%, 24%, 4%, 16% and 5% respectively.

Graph 8

Patient Satisfaction Level For Behaviour of the Fortisian team

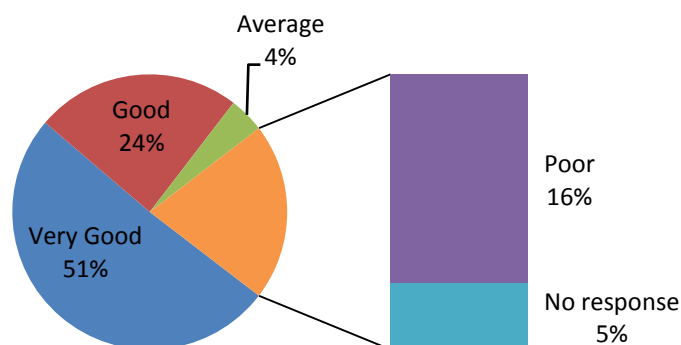
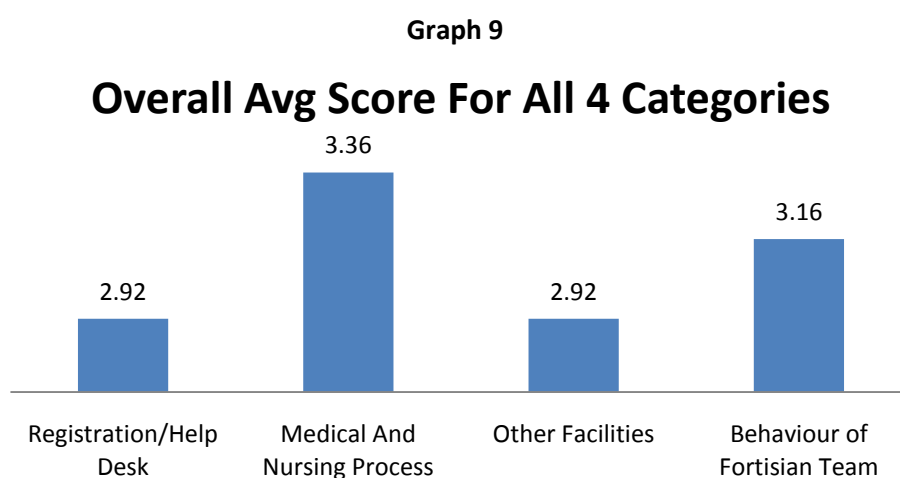


Table 1
Percentage of all the Parameters According to Scoring Scale

S.No	Parameters	Very Good	Good	Average	Poor	No Response
1	Registration/Help Desk	44%	22%	13%	19%	2%
2	Medical and Nursing process	37%	26%	8%	7%	2%
3	Other Facilities	33%	25%	11%	10%	1%
4	Behaviour of fortisian Team	51%	24%	4%	16%	5%

e. Overall Average Score For All 4 Categories :-

For Registration/Help Desk, Medical and Nursing process, Other Facilities and Behaviour of fortisian Team average score which is 2.92, 3.36, 2.92 and 3.16 respectively is shown below in graph 9



9. Suggestions to improve the patient satisfaction:

- **Staff Behavior:** Healthcare is a high involvement service as it concerns the person's health and well-being. Healthcare providers should manage quality through continuously redesigning process and understanding the factors that are highly associated with patient satisfaction. Staff behavior has the largest effect on inpatients satisfaction in hospitals. Because, inpatients associated with the hospital staff, they are provide not only a treatment but also mercy and concerned.
- **Interpersonal Skills of the Medical Personnel:** The importance of patients' feedback in hospital settings. The findings indicate areas for improvement including removal of poor interpersonal relationships between providers and patients. These skills are improved among the medical personnel.

- **Improving Stewardship and Oversight:** The organizational structure currently lacks a strong unit that can analyze health system performance and key health system strategies. An organizational locus for monitoring and evaluation of health system development and consequent use of that information in policy design are also lacking. Along with this lack of organizational structure as a base for stewardship role, limited training and technical capacity exist among senior and mid-level officers to design, plan, implement, and evaluate major health system innovations. Strategic planning and stewardship over the whole sector are non-existent.

10. Conclusion:

An attempt to evaluate the level of patient satisfaction related to different parameters of quality health care at the health facilities has provided us with the certain areas that need corrective efforts to improve hospitals' service quality. Infrastructure and architectural corrections need to be made to enhance the comfort and satisfaction of the patients. There is a need to channelize the patients through the hierarchical levels of health care to prevent undue burden on the tertiary health facilities. Certain improvements are also needed in the waiting area by making it informative and comfortable. Also, there is an imperative need to communicate effectively with the patients about their disease and the treatment specially the largely ignored and the most efficient preventive aspect to allay their fears, remove misconceptions, comply with the treatment and develop confidence in the health system for achieving the standards of good health.

SECTION D

PROJECT REPORT

ON

**“The First Step in Measuring the Effectiveness of a
‘Wellness’ Initiative to Perform a Need Assessment For
Marketing Purpose”**

1. Introduction:

The study focused on Marketing Department, basement of Fortis Flt. Lt. Rajan Dhall Hospital, New Delhi. Physicians, chiropractors, therapists, health professionals or wellness practitioners can utilize medical wellness programs to provide real solutions for today's changing health care environment. Before jumping into this exciting market, every rational decision to build a new wellness program should be preceded by an investigation of the feasibility of the project.

Such a process provides assurance that is needed to study and confirm that the market exists and can be successfully developed for a new wellness venture. Before a new wellness center develops facility standards, it should have a clear conceptual plan along with goals and desired outcomes. The future success for any wellness development will be the market research and business plan.

Winning with Wellness

The recommended Medical Wellness approach with each successful medical wellness center is similar to the approach a coach takes when assembling a team for a winning season: **Planning, Pre-season, and Season**. The time-proven process taken during the planning process will ensure the successful development of the new wellness center. There are several important tasks for developing a successful wellness center and program:

Planning

A new wellness facility team, like any team, must plan for success. It is recommended that the detailed planning stage of the project be initiated as early as possible. The market study and plan is often completed by a professional consultant. The first step in the essential planning process is to conduct a Market Feasibility Evaluation. As a result of this feasibility process these plans should start with the project goals, target market and site selection.

Specifically they should include some technical analysis of the following components:

- Define Project Mission and Goals
- Market Analysis
- Member and User Profile
- Demographic Analysis
- Competitive Analysis
- Comparison of Successful Centers
- Program Plan
- Facility Space Program
- Wellness Center Model and Profile
- Financial Performance and Schedules
- New Center Project Time Line

Pre-season

Critical tasks to prepare for a winning season in any new facility include market research, space and facility design, equipment selection, hiring and training of staff, a successful marketing and pre-sales program and the effective development of all wellness programming that will set the tone for customer service and retention.

In my experience, the complex and vital processes during these stages play a large part in determining the success of the program. It is recommended to initially use a consultant with proven wellness experience and expertise during the planning and pre-season process.

Season

When the doors to your new facility open, the season begins. This is when professional and effective management will improve the health and wellness of the community, guests, and members; and help maximize programs, participation, and revenues while minimizing expenses.

The professional market study will include financial forecasts, budgets and executive recommendations. This process will allow the program and staffing plans to lead a successful wellness center operation (season). It has been my professional experience that this process is a blueprint for success. Behind each successful project is the experience and expertise of the planning team. How the programs and services come together and functions is determined during the critical feasibility study and business plan process.

Planning for Business Success

A new wellness facility team, like any team, must plan for success. It is recommended that the detailed planning stage of the project be initiated as early as possible.

The first step in the essential planning process is to conduct a market feasibility evaluation. As a result of this feasibility process, these plans should start with the project goals, target market and site selection. In beginning to conduct a detailed market feasibility analysis, it is very important to review demographic data and select the best site for the success criteria and desired goals. Set outcome goals to identify the business and wellness goals for the proposed center; meet with all key stakeholders to fully understand the reasons for building a center and preliminary financial objectives; evaluate the overall facility, service areas and program plan to clarify how the wellness center and programs will help contribute to the goals of the overall plan.

The following process is just one example used to estimate the feasibility of a new wellness facility:

Determine Market Area — The primary market area is defined as within a drive time or a radius of the proposed facility. The recommended trade area is generally a 10- to 15-minute drive time. Although geographic barriers will always exist, experience with projects confirms that the people most likely to join a center are those living or working in close proximity to the facility. I highly recommend using a drive time analysis for the evaluation. Consultants will review the project site locations and conduct a site analysis. They should evaluate the location for potential users based on demographics, convenience and accessibility. Radius or mile rings studies can be completed if the drive time analysis is not available.

Estimates and Extrapolation — Proprietary membership, enrollment rates, estimated penetration from census-related reports, data mining and household surveys are reviewed and analyzed. These results are applied to the local community level using demographic projections and data mining.

Rely on consultants, design firms, wellness industry data sources, surveys, benchmarking databases and nationally recognized market analysis demographic database tools to analyze: the number of households within varying proximities of the proposed facility site; the average income levels of households within varying proximities from the proposed facility site and the correlation of household income to the acceptance threshold of member dues and other fees; the average number of individuals per household as well as median age of the highest potential prospective members; industry studies that document the average distances users and members are willing to travel to join a wellness center; recent community census data and projected population statistics, including household size, income level, age and education; interviews with physician and other practitioners to determine the potential for medical referral memberships; and estimated community and employee usage for various recreational activities. An income analysis can be applied to the potential member profile in order to estimate the population who may join a new facility based on planned programs, services and price elasticity.

Effects of Competition — Every new project should conduct competitive or community analysis of the comparable operations in the target area. This community assessment determines key information about the area's existing wellness centers. A "professional shopper" technique is used to assess direct competition. A good competitive analysis will include the following: the location of competitive centers and their distance from the proposed wellness center along with the estimated memberships and the age of competing facilities. Any new facility or

programming components should be included with the size and amenities of the competing facilities, and the summary will identify facility features along with membership options and member dues, initiation fees and other costs.

Corrections Based on Research Experience — Even after all attempts to discount potential memberships through the market evaluation and the competition analysis, there will be a group of people who would be expected to join, but do not participate as predicted. This is where a seasoned consultant with proven experience is most valuable.

Impact of Medically-related Memberships — It has been determined that 20% to 30% of fitness center members are introduced to the facility because of medical needs, such as cardiovascular disease or orthopedic problems. Experience with wellness operations indicates that physicians who are associated with the facility will use the programs as an integral part of medical treatment.

Comparison of Successful Centers — Develop a comparison of successful wellness centers in the market area to help determine facility and program components to consider in the center. This is a great benchmarking tool and process and future marketing resource for memberships.

The following chart provides the different market research methods and assessments.

Research Methods & Assessments

- | | |
|-----------------------------------|-----------------------------------|
| ◆ Demographic survey evaluation | ◆ Market feasibility assessments |
| ◆ Telephone interviews | ◆ Brand image analysis |
| ◆ Focus groups | ◆ Product/service utilization |
| ◆ Direct mail surveys | ◆ Advertising effectiveness |
| ◆ Customer intercepts | ◆ New product/service development |
| ◆ Mystery shops | ◆ Customer satisfaction |
| ◆ Inactive/former customer survey | |

2. Parameters:

Nutritional Assessment Form
World Health Month- April

3. Mission:

To improve the Health of South Delhi through achieving optimal customer health.

4. Goals :-

- Increase the number of customers reporting an improvement in their fitness level.
- Decrease the number of customers who report being above their ideal weight.
- Increase the number and frequency of screenings offered to customers.

5. Market Analysis with help of SWOT

STRENGTHS:-

- **Strong Management**

Strong management can help Hosp reach its potential by utilizing strengths eliminating weaknesses.

- **Innovative Culture**

An innovative culture helps Hosp to produce unique products and services that meet their customer's needs.

- **Supply Chain**

A strong supply chain helps Hosp obtain the right resources from suppliers and delivery the right product to customers in a timely manner.

- **Size Advantages**

Size advantages lower Hospital's risks. The larger Hosp gets, the more resources they have to pursue new markets and defend themselves against rivals

- **Unique Products**

Unique products help distinguish Hospitals from competitors. Hosp can charge higher prices for their products, because consumers can't get those products elsewhere.

- **Technology**

Superior technology allows Hospital to better meet the needs of their customers in ways that competitors can't imitate.

- **Customer Loyalty**

When given a choice, customers are loyal to Hosp. Instead of targeting all customers, Hospital only needs to target new customers in order to grow their business.

WEAKNESS:-

- **Online Presence**

The online market is essential for displaying information and selling products. A weak online presence can result in lost opportunities for Hospital

- **Cost Structure**

A weak cost structure means Hospital's costs are high in comparison to their competitors.

OPPORTUNITIES:-

- **Financial Leverage**

Leveraging the balance sheet allows Hospital to quickly expand into other markets and products, especially in fragmented industries

- **New Services**

New services help Hosp to better meet their customer's needs. These services can expand Hospital's business and diversify their customer base.

- **Online Market**

The online market offers Hosp the ability to greatly expand their business. Hosp can market to a much wider audience for relatively little expense

- **New Products**

New products can help Hospital to expand their business and diversify their customer base.

- **Innovation**

Greater innovation can help Hospital to produce unique products and services that meet customer's needs.

- **New Markets**

New markets allow Hosp to expand their business and diversify their portfolio of products and services.

- **International Expansion**

International markets offer Hospital new opportunities to expand the business and increase sales.

THREATS:-

- **Bad Economy**
A bad economy can hurt Hospital's business by decreasing the number of potential customers.
- **Intense Competition**
Intense completion can lower Hospital's profits, because competitors can entice consumers away with superior products.
- **Govt Regulations**
Changes to government rules and regulations can negatively affect Hospital.
- **Change in Tastes**
Consumers can change their tastes very quickly. Hospital depends on knowing which goods and services consumers want.
- **Political Risk**
Politics can increase Hospital's risk factors, because governments can quickly change business rules that negatively affect Hospital's business.

6. Competitive Analysis (Porter's 5 Force Model)**Bargaining Power of Suppliers:-**

- **Large number of substitute inputs**
When there are a large number of substitute inputs, suppliers have less bargaining leverage over producers. This is due to competition among substitutes. Greater competition positively affects Hospital.
- **High competition among suppliers**
A high level of competition among suppliers acts to reduce prices to producers. This is a positive for Hospital.
- **Diverse distribution channel**
The more diverse distribution channels become the less bargaining power a single distributor will have. This positively affects Hospital.
- **Volume is critical to suppliers**

When suppliers are reliant on high volumes, they have less bargaining power, because a producer can threaten to cut volumes and hurt the supplier's profits. This can positively affect Hospital.

- **Low concentration of suppliers**

A low concentration of suppliers means there are many suppliers with limited bargaining power. Low concentration of suppliers positively affects Hospital.

Bargaining Power of Customers:-

- **Large number of customers**

When there are large numbers of customers, no one customer tends to have bargaining leverage. Limited bargaining leverage helps Hospital.

- **Product is important to customer**

When customers cherish particular services they end up paying more for that one service. This positively affects Hospital.

- **Buyers require special customization**

When customers require special customizations, they are less likely to switch to service providers who have difficulty meeting their demands. Buyer customization positively affects Hospital.

- **Limited buyer information availability**

When buyers have limited information, they are at a disadvantage in negotiations with service providers. Limited buyer information positively affects the Hospital.

- **Low buyer price sensitivity**

When buyers are less sensitive to prices, prices can increase and buyers will still go for services. Inelastic demand positively affects Hospital.

Intensity of Existing Rivalry:-

- **Exit barriers are low**

When exit barriers are low, weak firms are more likely to leave the market, which will increase the profits for the remaining firms. Low exit barriers are a positive for Hospital.

- **Large industry size**

Large industries allow multiple firms and produces to prosper without having to steal market share from each other. Large industry size is a positive for Hospital.

- **Government limits competition**

Government policies and regulations can dictate the level of competition within the industry. When they limit competition, this is a positive for Hospital.

Threat of Substitutes:-

- **Substitute has lower performance**
A lower performance product means a customer is less likely to switch from Hospital to another hospital or service.
- **Substitute is lower quality**
A lower quality product means a customer is less likely to switch from Hospital to another hospital or service.
- **Substitute product is inferior**
An inferior product means a customer is less likely to switch from Hospital to another hospital or service.

Threat of New Competitors:-

- **High capital requirements**
High capital requirements mean a company must spend a lot of money in order to compete in the market. High capital requirements positively affect Hospital.
- **Strong brand names are important**
If strong brands are critical to compete, then new competitors will have to improve their brand value in order to effectively compete. Strong brands positively affect Hospital.
- **Advanced technologies are required**
Advanced technologies make it difficult for new competitors to enter the market because they have to develop those technologies before effectively competing. The requirement for advanced technologies positively affects Hospital.
- **Customers are loyal to existing brands**
It takes time and money to build a brand. When companies need to spend resources building a brand, they have fewer resources to compete in the marketplace. These costs positively affect Hospital.
- **Geographic factors limit competition**
If existing competitors have the best geographical locations, new competitors will have a competitive disadvantage. Limiting geographic factors positively affect Hospital.
- **Industry requires economies of scale**
Economies of scale help producers to lower their cost by producing the next unit of output at lower costs. When new competitors enter the market, they will have a higher cost of production, because they have smaller economies of scale. Economies of scale positively affect Hospital.

- **Entry barriers are high**

When barriers are high, it is more difficult for new competitors to enter the market. High entry barriers positively affect profits for Hospital.

- **High learning curve**

When the learning curve is high, new competitors must spend time and money studying the market before they can effectively compete. High learning curves positively affect profits for Hospital.

7. METHODOLOGY:

Study population: The present study was conducted among the OPD patients, IPD patients of Fortis Flt. Lt. Rajan Dhall Hospital, New Delhi, club members and mall visitors in South Delhi.

Period of study: The period of survey was from 2 to 12th April 2014

Site Selection: Within 5-10 KM

Sampling technique: Simple Random sampling

Technique of data collection: Survey (Nutritional Assessment form)

Tools of data collection: Structured questionnaire

Permission to conduct the study was taken from the superintendents of the concerned health care facility. All the patients and persons were interviewed.

Table 1

Criteria for selection of tool

Criteria for Selection of Tool	Operationalization
Evidence	How strong is the evidence supporting the practice described in the question?
Reliability of Data	Does the question allow for the capacity to collect true data (i.e., is it easy for users fabricate their answer or misunderstand the question such that they answer it incorrectly)?
Validity	Is the question really getting at the core concept we are trying to measure?

Reach	How many people are reached by or have access to the practice? Does it reach the people that need it the most and not just the eager adopters?
Sustainable	Is the practice described in the question able to be sustained over time by the workplace? To what extent can the practice or policy become institutionalized as part of routine organizational practices?
Changeability	How changeable is the action being described? Is it a feasible behavior/environment change for any type of workplace (e.g., small hospitals, retail, manufacturing, service sector, etc.)?
Statistical Correlation	Does the question correlate with the final module grade, used as a proxy for a comprehensive worksite wellness program?

Methodology for Data Analysis:

DATA COLLECTION: Market survey was done through questionnaire which is shown on next page.

The data is collected from both sources i.e. **primary and secondary**. For collection of data from **primary sources** questionnaire was used as a tool.

Primary data:

The data for the study was collected by administering the questionnaire and through observation method.

Fortis Flt.Lt. Rajan Dhall Hospital

Nutritional Assessment Form

Last Name	First Name	Date of Birth
		D D M M Y Y
E-mail	Contact Number	
Address		

- 1 In general, would you say your health is

☐ Excellent
 ☐ Good
 ☐ Fair
 ☐ Poor
- 2 Please indicate if you have a chronic medical condition

☐ Asthma
 ☐ Diabetes
 ☐ Heart Disease
 ☐ Chronic Back Pain

☐ Other condition (please specify)
- 3 In the past 6 months, how many times did you have to visit a doctor

☐ None
 ☐ 1
 ☐ 2, 3
- 4 When did you go for your last health check-up

☐ 6 months
 ☐ 1 year
 ☐ 2 years
 ☐ Never
- 5 Do you smoke

☐ Y
 ☐ N
- 6 What is your alcohol intake

☐ Daily
 ☐ Occasionally
 ☐ Never

- 7 Do you usually eat

- Breakfast
 - Midday meal
 - Lunch
 - Tea
 - Dinner

☐ Yes	☐ No
☐ Yes	☐ No
☐ Yes	☐ No
☐ Yes	☐ No
☐ Yes	☐ No
- 8 Do you exercise

☐ Regularly
 ☐ Occasionally
 ☐ Never
- 9 Do you consume

- Cereals (Chappati/Bread/Rice)
 - Proteins (Dal/Paneer/Non-veg)
 - Milk/Dahi
 - Fruits
 - Vegetables
 - Fried food

☐ Every meal	☐ Once a day	☐ Never
☐ Every meal	☐ Once a day	☐ Never
☐ Every meal	☐ Once a day	☐ Never
☐ Every meal	☐ Once a day	☐ Never
☐ Every meal	☐ Once a day	☐ Never
☐ Every meal	☐ Once a day	☐ Never

- 10 What is the number of your family members
- | | | | | | | | | | | | | |
|--------|-----|----------------------|---------|-----|----------------------|-----|----------------------|---------|-----|----------------------|-----|----------------------|
| Father | Age | <input type="text"/> | Spouse | Age | <input type="text"/> | Sex | <input type="text"/> | Child 2 | Age | <input type="text"/> | Sex | <input type="text"/> |
| Mother | Age | <input type="text"/> | Child 1 | Age | <input type="text"/> | Sex | <input type="text"/> | | | | | |

- 11 What is the quantity of oil used per month (in Litres)

Height (Meters)

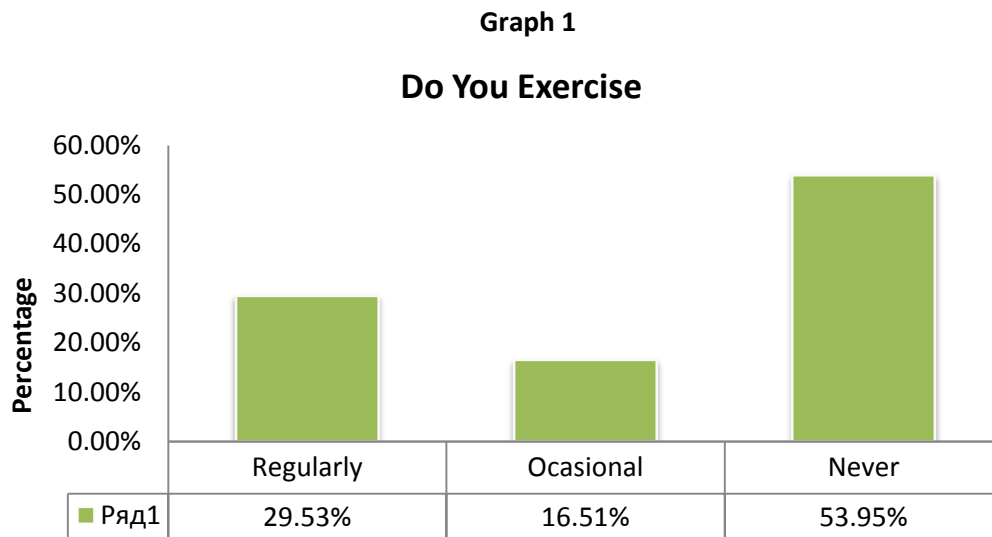
Weight (Kgs)

8. Findings According to Goals:

Goal 1:-

INCREASE THE NUMBER OF CUSTOMERS REPORTING AN IMPROVEMENT IN THEIR FITNESS LEVEL.

It is done through questioning “Do you exercise?” which is categorized for 430 sample size as Regularly, Occasionally and Never which comes out as 127, 71 and 272 respectively which is show in below graph 1 as percentage.

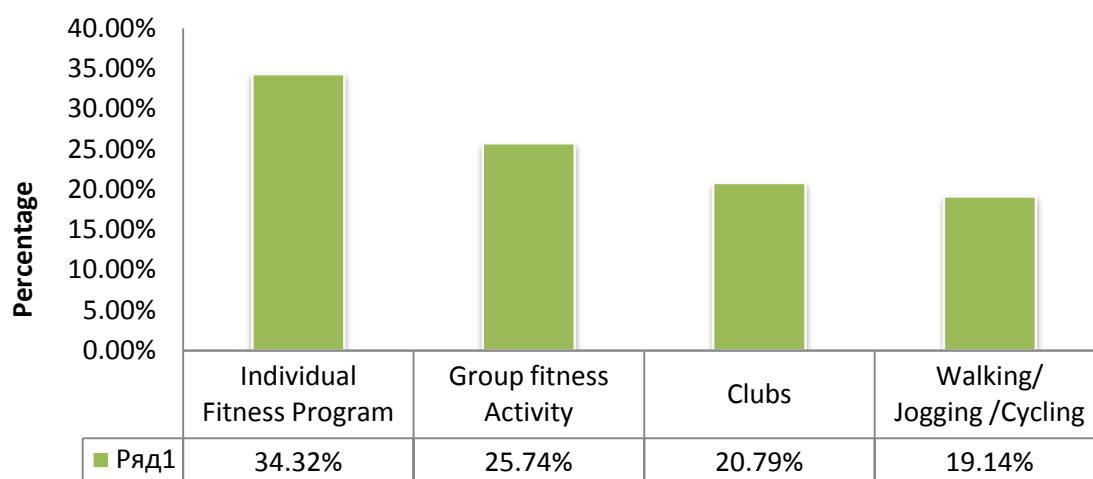


Rationale for choosing goal:

Is mainly targeted to the customers who didn't answered “Regularly” which accounts 303 out of which 71 answered “Occasional” and 232 answered “Never”.

- 34.32% were interested in an “Individual Fitness Program”
- 25.74% were interested in “Group Fitness Activity”
- 20.79% were interested in “Clubs”
- 19.14% were interested in “Walking/Jogging/ Cycling”

Graph 2

Categorisation of Occasional and Never Exercise

How will you measure success in reaching this goal?

- Conduct a random survey of customer's once/year.
- Determine if membership at the Centre for Healthy Living has increased.
- Track number of visits to the Centre on a weekly basis.

Objectives set to accomplish goal:

- Implement and establish base-line participation for an activity-centered incentive program by April 6, 2014.
- To offer an individual fitness program consultation for a minimal fee to all interested customers by whether they are members to the fitness facility or not.
- To increase participation in our walking club to 100 members by December, 2014.
- To increase participation in our leagues and special events by 10% by December, 2014.

Programs, activities, interventions planned to meet objective:

- Offer fitness program consultations to all customers.
- Promote our Walking Club and tie it in with our activity-centered incentive program.
- Implement an activity-centered incentive program.

Timeline for programs:

- Consultations available to customers beginning April, 2014.
- Activity-centered incentive program implemented by April, 2014

- Walking Club promoted and incentive program incorporated in with our overall activity-centered program.
- League and special event changes to precede the beginning of new leagues and prior to special events.

Resources needed to conduct programs:

- Funding for incentives prizes.
- Tracking system for incentive program
- Personnel to run the programs.

Methods and tools to evaluate programs:

- Meeting criteria for regular participation in appropriate physical activity.
- Conduct evaluations after the conclusion on each league and special event and make adjustments accordingly. Track number of participants. Informally interview customers if they participate and if not why.
- Track number of participants in the activity-centered incentive program to determine how many have increased their activity levels.

GOAL 2:

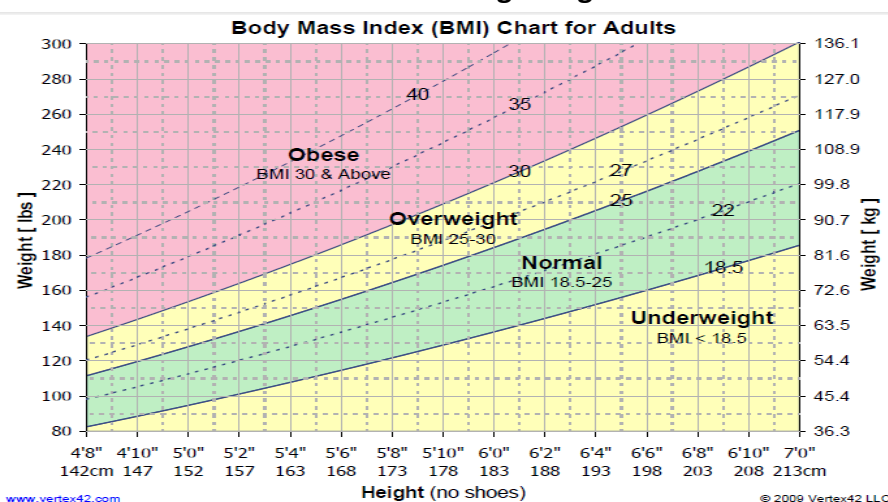
DECREASE THE NUMBER OF CUSTOMERS WHO REPORT BEING ABOVE THEIR IDEAL WEIGHT

It is done through doing Body Mass Index (BMI) which is categorized for 430 sample size according to the following parameters which is shown in table 1 and graph 3 also.

Table 1 Body Mass Index Parameters and Range

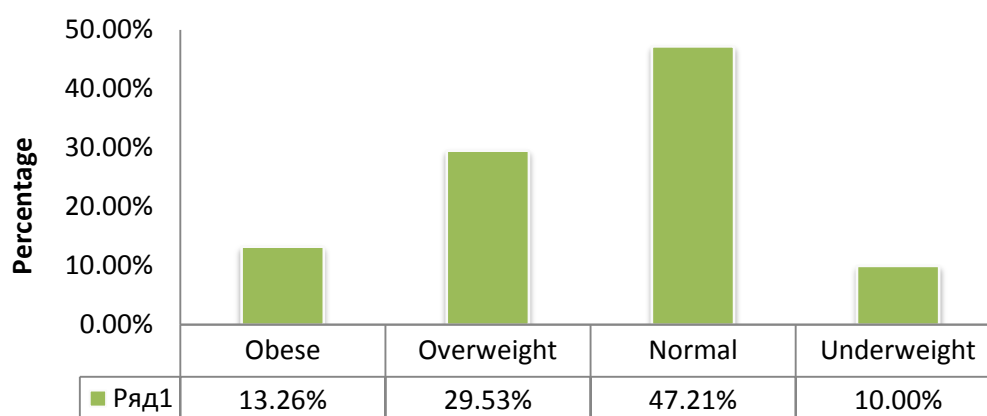
S.No	Parameters	BMI Range	No of Customers
1	Obese	30 & above	57
2	Overweight	25 – 30	127
3	Normal	18.5 – 25	203
4	Underweight	<18.5	43

BMI Score is calculated according to Figure shown below



Graph 3

BMI



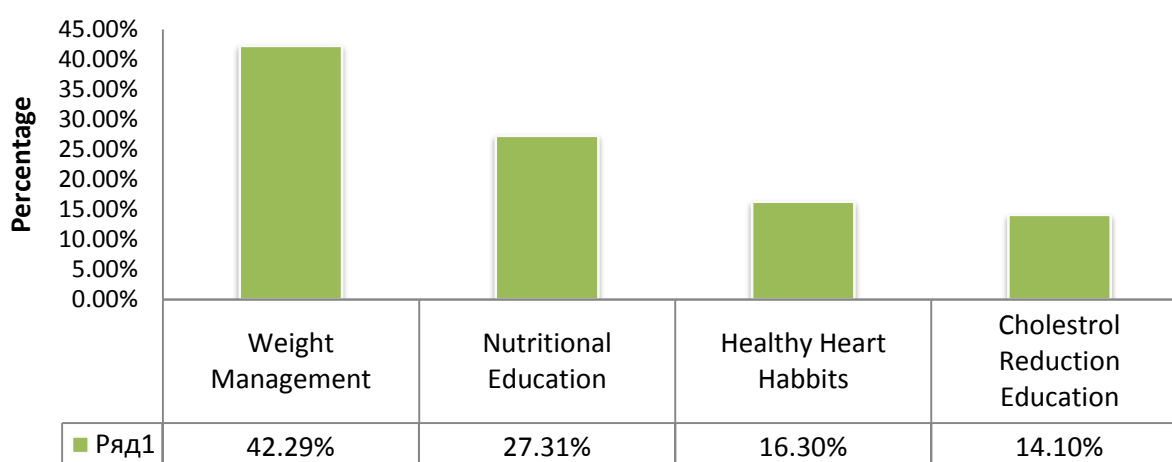
Rationale for choosing goal:

Is mainly targeted to the customers who are not in normal category in BMI which accounts 227 out of which 57 were obese, 127 were overweight and 43 were underweight which is shown below in graph 4 as percentage.

- 42.29% were interested in “Weight Management”
- 27.29% were interested in “Nutritional Education”
- 16.30% were interested in “Healthy Heart Habits”
- 14.10% were interested in “Cholesterol Reduction Education”

This categorization was done for **Obese, Overweight & Underweight Exercise in BMI index.**

Graph 4

Categorisation of Obese, Overweight & Underweight Exercise

How will you measure success in reaching this goal?

- Have questions on future needs/interest surveys asking participants if they are above their ideal weight.
- Track all the individuals who have fitness tests to determine if their body composition has changed.

Objectives set to accomplish goal:

- Offer weight management and nutrition programs at least four times per year beginning in January 2015.
- Offer on-going follow-up classes.
- Give presentation on “what is ideal body weight” and on “body image”
- Give presentations on the importance of being physically active in relation to weight management.

Programs, activities, interventions planned to meet objectives:

- Nutrition programs offered at least three times per year that include information on “Weight Management”, “Healthy Cooking”, “Nutrition Education”, “Healthy Heart Habbits” and “Cholesterol Reduction Education”
- Program detailing the benefits of an activity program on weight management and/or weight loss. Program will also outline how to incorporate activity into busy lifestyle.

Timeline for programs:

- Begin weight management/nutrition programs in January of 2015.

Resources needed to conduct programs:

- Presenters on nutrition, weight management, exercise, cholesterol, healthy cooking and healthy heart habits.

Methods and tools to evaluate programs:

- Estimate body composition
- Conduct weigh-ins
- Conduct pre- and post- tests to determine if participants have changed their eating and/or activity habits.

GOAL 3:-

INCREASE THE NUMBER AND FREQUENCY OF SCREENINGS OFFERED TO CUSTOMERS.

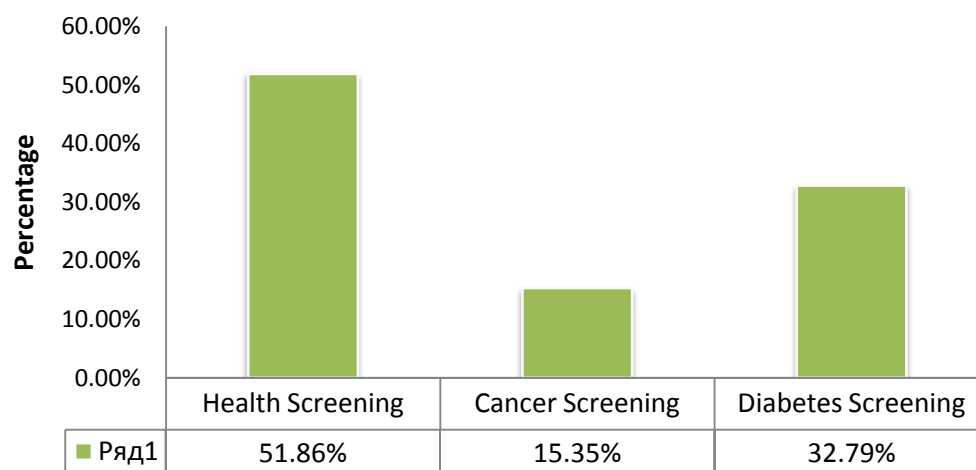
Targeted to all the 430, customers and Categorization is done different screenings which is shown in below Graph 5 in percentage.

Rationale for choosing goal:

- 51.86% were interested in “Health Screenings”
- 15.35% were interested in “Cancer Screenings”
- 32.79 % were interested in “Diabetes Screenings”

Graph 5

Categorization of Sample For Different Screenings



How will you measure success in reaching this goal?

- If number and frequency of health screenings available to customers has increased.
- If number and frequency of Diabetes screenings available to customers has increased in C-DOC (Diabetes Centre).

Objectives set to accomplish goal:

- Collaborate with the Cancer Centre to offer cancer screenings to all interested participants by February 2015.

Programs, activities, interventions planned to meet objective:

- Work with the laboratory to offer screenings.

Timeline for programs:

- Discuss screenings with various departments and our partner in January 2000.

Resources needed to conduct programs:

- Laboratory technicians available for screenings.
- Promotional information
- Possible financial resources

Methods and tools to evaluate programs:

- Determine if the number health screenings offered to customers has increased.

9. Suggestions:

1. Tie Up with Sports clubs and Gyms

- Customer will be enrolled for minimum six months and free health checkup which will be designed according to the all customers need; once in 6 months.
- Diet Counseling will be given while doing exercise once in two months by Fortis dietician.

2. Organize Camps and Health talks with local residential in South Delhi Area which help the hospital to promote their services and products in detail.

3. Introduce motivational and attractive methods to delight the customers.

- Example 1: Biggest weight loser competition.
- Example 2: Marathon twice in a year.

- Example 3: Cycling Run
- 4. Provide Discounted Coupons to the customers for PHC those who have enrolled for Gyms and sports club which have tie-up with Fortis.
- 5. Management support and involvement
 - Participate and make lifestyle changes
 - Support marketing and promotional activities.
 - Without management support the program is likely to gain little exposure.
- 6. Customers involvement in the decision making process
 - More likely to participate if ownership
 - Survey customers
 - Systematically record feedback
 - Involving the customers is particularly important in the developmental stage of the program.
- 7. Ensure program is relevant to your organization's need
 - Quantitative analysis of health indicators
 - Health assessments
 - Previous health assessment programs
 - Qualitative feedback
- 8. Consider promotional materials to encourage healthy food choice
 - Teach diners about portion sizes, nutritional balance, types of foods.
- 9. Program evaluation
 - Participation rates
 - Perception scores
 - Survey scores
 - Health measurement change
 - Decrease in high risk results
 - Absenteeism, presenters

Section E

PROJECT REPORT

ON

**Inventory control by ABC, VED and ABC-VED Matrix
Analysis of Drugs of a tertiary care hospital in Delhi**

1. INTRODUCTION

The goal of any hospital supply system is to ensure that there is adequate stock of required items, so that uninterrupted supply of all essential items is maintained. Health care industry is a labor intensive organization. While salaries and fringe benefits account for roughly 60 percent of operating costs in a hospital, 30-35 percent of costs are incurred on materials and supplies like drugs etc. A logistic expenditure is possible on materials and supplies therefore, controlling these expenses¹. A study in India has revealed **that not only quantity of medicine received in the health centers falls short of their requirements but the** supply is often erratic. Even common medicines are out of stock and remain so for a considerable period². Of the various explanations for non availability of even simple medicines in the third world countries, a large number are related to materials management³. The present study was conducted at a Fortis Flt. Lt. Rajan Dhall hospital, New Delhi to study the drug management through the application of inventory control techniques like ABC, VED and ABC-VED matrix analysis. Since health sector perennially faces a resource crunch it is essential that health managers use scientific methods to maximize their returns from investment at a minimal cost.

2. REVIEW OF LITERATURE

Approximately 35.0% of annual hospitals budget is spent on buying materials and supplies, including medicines [1]. This requires effective and efficient management of the medical stores. Efficient priority setting, decision making in purchase and distribution of specific drugs, close supervision on drugs belonging to important categories, and prevention of pilferage depend on the drug and inventory management.

Quality of care in tertiary care hospitals is also sensitive to the timely availability of facilities including drugs. Huge budget and key element in the provision of care make drugs as an important component of hospital care. The medical store is one of the most extensively used facilities of the hospital and one of the few areas where a large amount of money is spent on purchases on a recurring basis. This emphasizes the need for planning, de-signing and organizing the medical stores in a manner that results in efficient clinical and administrative services [2]. The goal of the hospital supply system is to ensure that there is adequate stock of the required items so that an uninterrupted supply of all essential items is maintained. A study conducted by the Department of Personnel and Administrative Reforms in India has revealed that not only does the quantity of medicines received fall short of the requirement but also the supply is often erratic. Even common medicines are out of stock and remain so for a considerable period [3]. Of the various explanations for non-availability of even simple medicines in the third world countries, a large number are related to materials management. A

study from a 1500-bedded state-funded hospital has claimed that review and control measures for expensive drugs brought about 20% savings [4].

Drug inventory management aims at cost containment and improved efficiency [5]. Inventory control is very essential in a developing country like India [6]. India is a country of scarce resources and it is the primary responsibility of each hospital to ensure optimum utilization of available resources to provide good service or quality patient care. Usually, the hospital management is faced with choosing the alternative of either lowering the quality of care or adopting ways and means to reduce the cost of inventories. Therefore, the need of the hour is that we follow the principles of rational drug use and inventory management techniques so that in the existing budget we can cater to more number of patients.

It is essential that health managers use scientific methods to maximize their returns from investment at a minimal cost [6-9]. Inventory analysis seeks to achieve maximal output with minimal investment input, based on the economic principle of stretching the limited means to meet unlimited ends. Each item may be considered critical and there is a perceived need to supply very high levels of service [10].

There is no denying that stocking hospital pharmaceuticals and supplies can be expensive and tie up a lot of capital, and bringing efficiencies to such important cost drivers—often 30% - 40% of a hospital's budget—can present meaningful savings [11]. Thus, a hospital materials manager must establish efficient inventory system policies for normal operating conditions that also ensure the hospital's ability to meet emergency demand conditions [12]. The study of use pattern helps in designing appropriate corrective measures. ABC analysis is an important tool used worldwide, identifying items that need greater attention for control [6-9,13]. The limitation of ABC analysis is that it is based only on monetary value and rate of consumption of the items. Sometimes, particularly in a hospital an item of low monetary value and consumption may be very vital or even life saving. Their importance cannot be overlooked simply because they do not appear in category A of inventory. Therefore, another parameter of the materials is their criticality. This could be in item of the therapeutic value of a drug or intrinsic value of the material in achieving the objectives of the hospital system.

We undertook this analysis of inventory control of drugs to identify areas for further improvement as well as to find corrective interventions to achieve this end result, we did the analysis of inventory control of drugs of the tertiary care Hospital providing the Neuropsychiatric care in Delhi, India for the last completed financial year, 2008-2009.

We attempted to narrow down the areas, where management supervision and control measures are needed for optimal utilization of the available resources.

3. OBJECTIVES

General objective:

- To identify the categories of drugs and medical consumables which need stringent management control.

Specific objectives of this study were to:

- To analyze the annual consumption of items of medical store and expenditure incurred on them for the year 2013-2014.
- To evolve a priority system based on ABC and VED and ABC-VED matrix analysis
- To identify the item categories requiring greater supervisory monitoring.

4. MATERIAL AND METHODS

The study was conducted at Fortis Flt. Lt. Rajan Dhall hospital in New Delhi. It is an apex tertiary care institution of psychiatry, neurology and behavioral sciences utilizing a multidisciplinary approach. The data of annual consumption and expenditure incurred on each item of the medical store for the financial year 2013-2014 were collected and then transcribed and analyzed in MS Excel.

a. ABC Analysis

The annual consumption of all the drugs was calculated after multiplying unit cost by annual consumption and the resulting annual expenditure of individual items was arranged in descending order. Next step was to calculate the items cumulative cost of all the items, as well as the cumulative percentage of expenditure and the cumulative percentage of number of items. The drugs were then classified into three categories: A, B and C, based on the cumulative cost percentage of 70%, 20% and 10%, respectively.

b. VED Analysis

(Vital, Essential and Desirable)

Criticality analysis of all the drugs in the medical store was conducted and then these drugs were classified based into three groups. Those drugs which are critically needed as the life saving drugs and those that must be available at all times were included in the **V** category. The items having lesser criticality needs as well as those that may be available in the hospital were included in the **E** group. The items with lowest criticality, or those whose shortage may not pose a threat to the health of the patients, were included in the **D** group.

c. ABC-VED Matrix Analysis

The data was coupled into an ABC-VED matrix by cross tabulating the ABC and VED analysis. This resulted in categorization of drugs into (I, II and III). Category I comprised of items belonging to AV, AE, AD, BV and CV subcategories. The BE, CE and BD sub-categories were included in category II, and the category III was represented by items in the CD subcategory. The first alphabet of these subcategories represents its position in the ABC analysis, whereas the second alphabet represents its place in the VED analysis.

The term stringent control is defined as the control by the top management of the hospital.

5. RESULTS

The present study was conducted in Fortis, Delhi (a 200 bed tertiary care hospital catering to the major portion of northern India), to identify the categories of drugs needing strict management control.

The drug formulary of the hospital comprises of 2447 items. The total annual expenditure of the medicines in 2013-2014 was Rs. 87668195.96

a. ABC Analysis

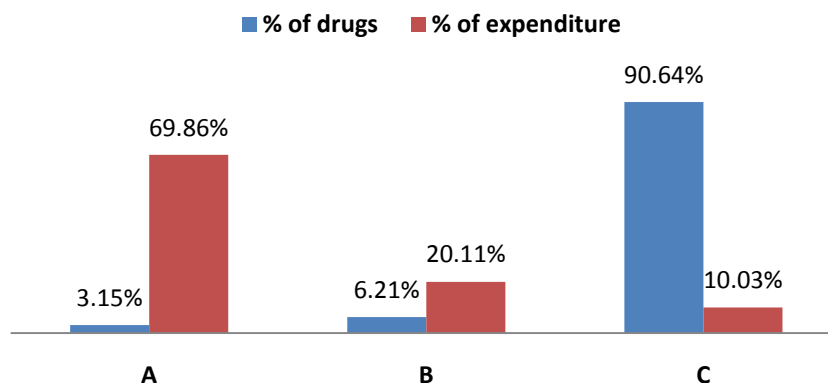
ABC analysis revealed that, 3.15% (77), 6.21% (152) and 90.64% (2218) items represented A, B and C category items, respectively, amounting for 69.86% (Rs. 61241277.36), 20.11% (Rs. 17630039.92) and 10.03% (Rs. 8796878.68) of annual drug expenditure of the medical stores **Table 1** and below in Graph 1.

Table 1- ABC category wise number of drugs and expenditure incurred on them in 2013-14 annual year with their percentage.

Category	No of Drugs	% of items	Annual Drug Expenditure	% of Annual Drug Expenditure
A	77	3.15%	61241277.36	69.86%
B	152	6.21%	17630039.92	20.11%
C	2218	90.64%	8796878.68	10.03%
Total	2447	100%	87668195.96	100%

Graph 1

Comparison Of ABC Drugs Against Expenditure



b. VED Analysis

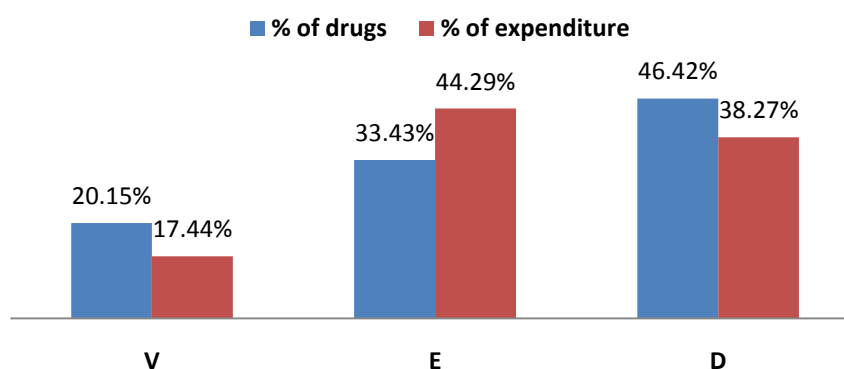
About 20.15% (493), 33.43% (818) and 46.42% (1136) items were found to be V, E and D category items, respectively, amounting for 13.14% (Rs. 11516613.73), 44.29% (Rs. 38830402.08) and 38.27% (Rs. 33552739.57) of annual drug expenditure of the medical store **Table 2** and **Graph 2**.

Table 2- VED category wise number of drugs and expenditure incurred on them in 2013-14 annual year with their percentage.

Category	No of Drugs	% of items	Annual Drug Expenditure	% of Annual Drug Expenditure
V	493	20.15%	15285055.04	17.44%
E	818	33.43%	38830402.08	44.29%
D	1136	46.42%	33552739.57	38.27%
Total	2447	100%	87668195.96	100%

Graph 2

Comaprison of VED Of Drugs Against Expentiture



c. ABC-VED Matrix Analysis

ABC-VED matrix analysis is depicted in **Table 3**. This matrix yields nine different subcategories (AV, AE, AD, BV, BE, BD, CV, CE and CD) and further these subcategories were coupled into three main categories, categories I, II and III.

AV+BV+CV+AE+AD=CATEGORY (I)

BE+BD+CE=CATEGORY (II)

CD=CATEGORY (III)

There were 528 (21.58%) items in category I, 881 (33.14%) items in category II and 1108 (45.28%) items in category III, amounting for 83.15% (Rs. 72894847.15), 14.35% (Rs. 12576110.11) and 2.15% (Rs. 21972389) of annual drug expenditure of the medical store, respectively **Table 4** and **Graph 3**.

Occurrence of drugs and expenditure in each of ABC-VED categories

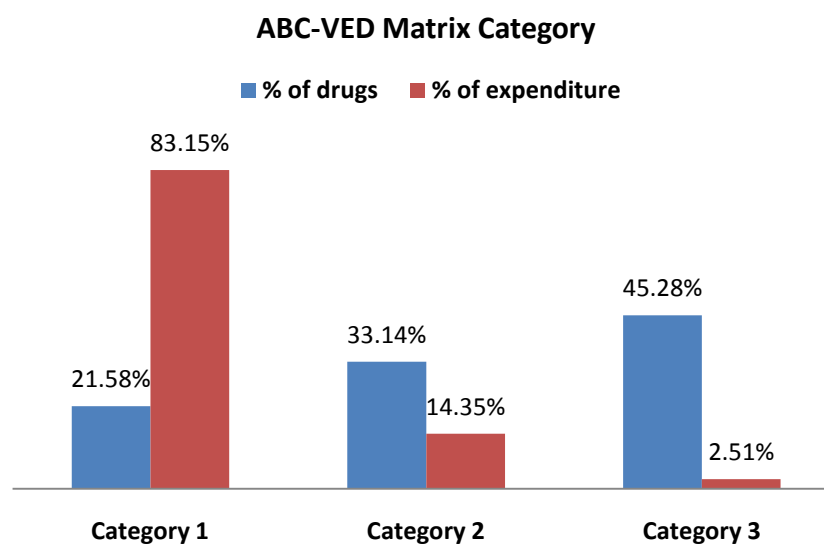
	AD	AE	AV	BD	BE	BV	CD	CE	CV
% of Drugs	0.49%	0.94%	1.72%	0.65%	2.62%	2.94%	45.28%	29.87%	15.49%
No. of drugs	12	23	42	16	64	72	1108	731	379
% of Expenditure	2.51%	25.72%	31.00%	1.79%	8.22%	10.10%	2.51%	4.33%	3.19%
Expenditure	2197238.7	22547831	27176832	1571201.9	7205099.4	8853738.6	2197238.7	3799808.8	2799831.2

Table 3 - ABC-VED Matrix

Category	A	B	C
V	42	72	379
E	23	64	731
D	12	16	1108

Table 4- ABC-VED Matrix Analysis according to the categories.

Category	No of items	% of items	Annual Drug Expenditure	% of Annual Drug Expenditure
C1	528	21.58%	72894847.15	83.15%
C2	811	33.14%	12576110.11	14.35%
C3	1108	45.28%	21972389	2.51%
Total	2447	100%	87668195.96	100%

Graph 3

6. DISCUSSION

In the healthcare delivery system the hospitals are dynamic institutions and spend their major portion of budget for material/logistics which rank second only to the employees' salaries. The entire system and sub-system of the hospital are dependent on the materials and without materials availability the patient care function of the hospital can come to stand still. Hence it is of great importance that materials of right quality are supplied to all users in right quantity at the right time and place. Inventory is one of the methods, which helps in achieving this goal.

The inventory control is one of the important elements in materials management and an effective measure for containing cost of materials. Hence the control of the inventory is essential for efficient and effective supply management, which is vital to the patient care function [14].

The aim of the hospitals is to make medical services available timely and continuously. The regular availability of drugs is the topmost priority for any hospital. In case of drugs, we cannot achieve this aim by focusing only on one factor, whether cost or criticality. When we matrix yields nine different subcategories (AV, AE, AD, BV, BE, BD, CV, CE and CD) and further these subcategories were coupled into three main categories, categories I, II and III.

a. ABC Analysis

The results of the present study showed that if we consider the ABC analysis alone for inventory management, it would help to effectively control 77 (3.15%) items in the A category, which represent 69.86% of annual drug expenditure of the medical store for drugs.

b. VED Analysis

The results of the present study revealed that if we consider VED analysis alone then we can effectively control the vital and/or essential items, accounting for 99.62% of annual drug expenditure of the medical store[5, 15-18].

c. ABC-VED Matrix Analysis

It is quite evident from the results of the present study that the combination of ABC and VED analysis, in terms of the ABC matrix enhances the ability to narrow down our attention on 881 (33.14%) items belonging to category I for strict managerial control; these items are either costly or vital. The annual expenditure of category I items was 83.15% of annual drug expenditure of the medical store. This category if further divided into 2 subgroups—subgroup I comprises of AV, AE and BV and there are total 137 items (5.6%) that are expensive (66.62% of ADE). It is difficult to manage the medical services if these drugs are out of stock because they are either vital or essential. Further it is very important to prevent the locking up of capital due to these costly items, hence we need to maintain low buffer stock for these items as well as keep a strict vigil on the consumption level and the stock in hand. A two-bin method of ordering needs to be ensured for these as this will eliminate the risk of item shortage. The drugs belonging to CV (31%, 21.4%) are drugs of low cost but high criticality and take up 3.19% of ADE of the medical store. As they are representing very small percentage of the total expenditure hence they can be procured once a year and can be stocked as their carrying cost is low.

Category II (33.14%) items represent 14.35% of the ADE. These items can be ordered once or twice a year, thereby saving on ordering cost and reducing management hassles at a moderate

carrying cost and without blocking substantial capital. Category III (45.28%) items consume 2.15% of the ADE. These items can also be ordered once a year and hence save on ordering cost[5, 15-18].

7. CONCLUSION

During the year 2013-2014, the inventory expenditure of the medical store on drugs of Fortis, Vasant Kunj Hospital at New Delhi was Rs. 87668195.96. There is a need of application of scientific inventory management tools for effective and efficient management of the medical stores and close supervision on items belonging to important categories. ABC-VED matrix analysis identifies the drugs requiring stringent control for optimal use of funds and avoids out-of-stock situations in the medical stores.

Category 1: Needs close monitoring & stringent control by top management.

Category 2: Moderate control by the middle level management.

Category 3: Control at the lower managerial level.

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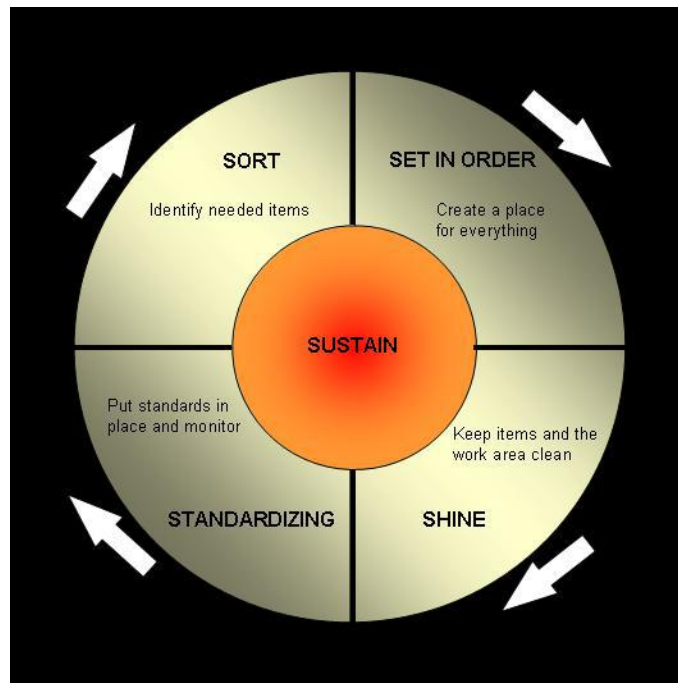
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Section F

PROJECT REPORT

ON

Implementation of 5S in Store and Purchase Department



1. Introduction

This is a report on 5S Workplace Organization and Standardization. It sheds light on how organizations have successfully created a 5S system or the obstacles and solutions they used to overcome them. This is a clear indication that there is much room for improvement. There are many suggestions and comments presented here to help coach and guide organizations as they improve their 5S systems. The level of cooperation for 5S initiatives is initially low but increases with time. Contrary to this is that upper management is generally supportive of a 5S system, but the top reasons for obstacles for implementation are “lack of management support” and “not enough time.” Another finding is that the amount of training spent on 5S training is relatively low. It seems that organizations have a hard time quantifying benefits from 5S (other than 5S Audits). Companies that did calculate the financial benefits proved that the return on investment far exceeds the cost of training, supplies and manpower. The lack of reward & recognition and the ability to engrain 5S into the organization’s culture is another impediment that must be overcome. Over 50 “best practices” are shared and many suggestions on how to properly create a 5S system or improve your current one are included.

2. Introduction

This report is for you. Many organizations have difficulties sustaining their 5S system or have difficulties with their 5S efforts; this may help. This paper is about sharing best practices for 5S, learning, and continuous improvement.

Learn from other organizations as they instill world-class 5S principles on their journey to organizational excellence.

5S System

Many organizations know that 5S is essential to creating a lean enterprise. Yet, many companies and individuals struggle with creating a world-class 5S system. We use the word “**system**” here because we feel strongly that 5S should not be considered a “program” or something that you do to your organization or a one-time process. 5S as a “system” enables operational excellence within a company -- something that is part of the culture, a way of life.

3. General 5S Information

What's in a name?

There are different terms that organizations use for workplace organization. The most common of these is “5S”, which are five words that begin with the letter “S”. The source for these words is Japanese and has been translated to English.

Japanese	English	Translation	Other*
Seiri	Sort	Organization	Sorting
Seiton	Set-in-order	Neatness	Simplify
Seiso	Shine	Cleaning Sweep	Scrub
Seiketsu	Standardize	Standardization	Systematize
Shitsuke	Sustain	Discipline	Self-Discipline

5S Summary

1. **Sort:** Remove those items (unnecessary supplies, equipment, and junk) that you do not need to do the job. This will remove clutter, free up floor space, and aid in improving workspace efficiency.
2. **Set in order:** Have a place for everything and everything is kept in its place. Place items in proximity (point of use) to make the caregiver's job easier. Label and identify the exact location for equipment and supplies to make this easy to maintain.
3. **Shine:** Sorted and straightened areas are easier to keep clean. Shine, another word for “scrubbing and cleaning,” is important to everyone, not to mention making patients and their families feel the are intrusting their lives to an organization that values cleanliness.
4. **Standardize:** You must standardize regular maintenance and upkeep of the 5S process. It is essential to be deliberate in your ongoing efforts and to create guidelines for sort, set in order, and shine.
5. **Sustain:** The true value of the 5S process is to sustain your customer/patient and Joint Commission ready approach at all times. Use simple but effective audit processes to accomplish this. Sustaining is the most important “S,” and it requires the most discipline.

A common derivation on the original term is “6S” where the term “safety” was added to the original 5S's. The thought behind this was companies that wanted to emphasize safety as part of their culture added another “S”. An alternative reason was that organizations that already had a safety program or committee could more easily combine these concepts together.

The initial focus of 5S included safety. Toyota, along with other companies, is widely credited with popularizing the 5S methodologies. Toyota believed that if a workplace (such as an

automobile factory) was unsafe, the employees could not give their full attention to their task; thus creating additional waste. 5S was instilled to create a safe work environment and respect for people.

Other adaptations include “7S” that adds in “security” (as in protection of the facilities, intellectual property, etc.), “spirit” or “smile” (as in keeping a positive attitude, morale, etc.).

4. 5S Benefits

5S drives a cleaner work environment and organizes the workplace. It is a Lean tool that should be implemented along with process improvements identified when value-stream mapping your business processes. When implementing 5S, you rapidly affect your work or production environment with a minimal expenditure. Most organizations report 5-10% efficiency improvement in several months, which is sustainable over time. 5S provides some of the following benefits:

- A cleaner workplace for enhanced safety and reduced clutter
- An organized, efficient workplace for increased productivity
- An always-ready environment that fosters and promotes compliance with regulatory standards
- The reduction of inventory and supply costs
- The recapture of valuable space and minimizing overhead costs
- The impact of “how we feel” about our workplace, organization, and ourselves

There will be naysayers that may argue that their messiness is beneficial to them; some point to the fact that time spent keeping their environment organized distracts from the important things in their jobs like time analyzing or thinking and defining new approaches to care.

However, they miss the point; truly organized people are not organized just for the sake of order.

Instead, their organization is a result of having a process to manage all of the things in their lives.

These folks avoid interment in paper or e-mails in their inbox by having a clear approach for handling all of the responsibilities in their lives. By managing things effectively, they avoid clutter and chaos.

5. 5S Implementation

Level of Cooperation

Like many new initiatives or systems there may be resistance at first. It’s how you handle the implementation and resistance that can have an immense impact on your initial success.

As expected, organizations had more resistance in the beginning trying to implement 5S. The resistance was reduced over time, although there is a very strong indication that companies are

still not getting the full amount of cooperation needed or required to have an effective 5S system.

6. Obstacles to Implementation

Three of the most common themes from the survey for the biggest obstacles to 5S implementations were: 1) lack of management support, 2) not enough time, and 3) resistance to change.

7. Fortis Hospital 5S Program

- **SPARKLE** ~ ensuring our Hospitals are hygienic
- **Short term goal:** Cleanest hospitals in the country”
- Long term goal: To move towards a medical centric programme- to help reduce incidence of infection due to environmental factors
- Tag line: “**Udti Titliyaan Nayi Umang Nayi Tarang**”

8. Fortis Sparkle Sign:



9. Results:

1 'S' – Sorting

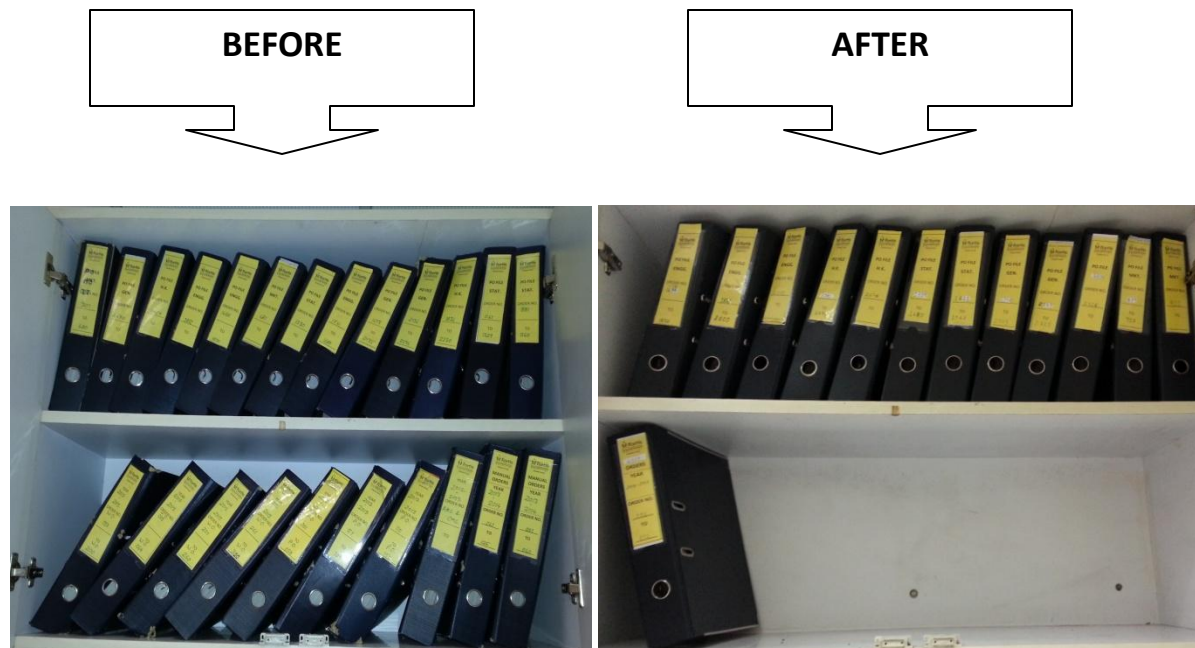
Sorting means that you remove all items from the workplace that are not needed for the current production (or clerical operations). Remove those items (unnecessary supplies, equipment, and junk) that you do not need to do the job. This will remove clutter, free up floor space, and aid in improving workspace efficiency.

It corresponds to “Only WHAT is needed, Only How Much is needed, Only When it is needed”

Benefits – 1 'S':

Creation of Space & Money

Fact: 50% of our work place is occupied by only unwanted. Things which were either not used for a long time or not considered for review / decision by top management.



**BEFORE****AFTER**

2 'S' – Set In Order

“Place for Everything & Everything on its Place”

Place items in proximity (point of use) to make the caregiver’s job easier. Label and identify the exact location for equipment and supplies to make this easy to maintain.

- It means putting things in order after analyzing why getting things out and putting them back takes so long.
- It is done with the objective of minimizing search time and errors.
- Label and identify the exact location for equipment and supplies to make this easy to maintain.

Benefits - 2S:

- Search Time Elimination
- Place for everything and everything on its place with the proper identification, quantity, component, area and everything.



AFTER-2'S

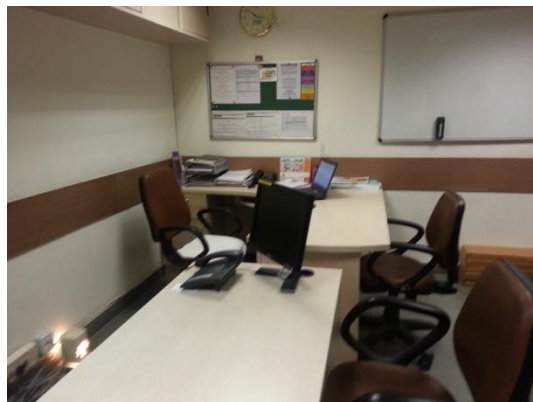
3 'S': Shine / Clean

Sorted and straightened areas are easier to keep clean. Shine, another word for “scrubbing and cleaning,” is important to everyone, not to mention making patients and their families feel they are entrusting their lives to an organization that values cleanliness.

- Create a spotless workplace
- Identify and eliminate causes of dirt and grime-remove the need to clean
- Sweep , dust , polish and paint



BEFORE



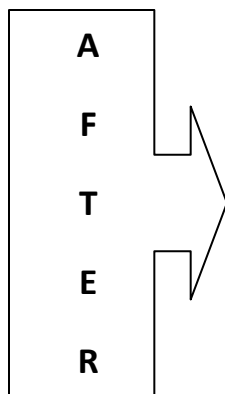
AFTER

4 'S': Standardize

You must standardize regular maintenance and upkeep of the 5S process. It is essential to be deliberate in your ongoing efforts and to create guidelines for sort, set in order, and shine.

Benefit to Company:

- There is a Place for Everything & Everything on its Place.
- Generate a maintenance system for the first three S's .
- It means that racking, labeling , operational layouts are designed in a standard fashion.
- Continue to assess the use and disposal of items.



5 'S': Sustain / Discipline

The true value of the 5S process is to sustain your customer/patient and Joint Commission ready approach at all times. Use simple but effective audit processes to accomplish this. Sustaining is the most important "S," and it requires the most discipline.

- Means inculcate courtesy and good habits
- Driving force behind all S's
- Involve the whole workforce
- We Sustain when we have developed habits of always using the first 4 S's together on a daily basis.

10. SUGGESTIONS:

Teams

- Including a maintenance person on the 5S event team. Having a map and before pictures to help work through the vision for the after area.
- Plant 5S audit boards.
- Selection of the right group of team members before the training starts is highly important.
- The less motivated members need to be limited to only one per group.
- Involve the employees working in the area. Do NOT go in and upend someone's work space without having them help design the solution.
- Have plant leaders lead a zone - at least for the first 12 months. This gets them engaged and ensures they can support 5S long-term.
- Assign zone coordinators; have them meet weekly, then bi-weekly, then monthly to share successes, learning's, and challenges.
- Hold a close-out presentation by the 5S team. Team presents to management. Great for increasing visibility of effort, engaging management, providing positive encouragement to team members.
- Our 5S teams consist of managers as well as hourly operators who identify the primary area for a 5S activity. From that team a "core" team of specialists or users are selected to map the issues and then create a "perfect world" scenario which becomes the ultimate objective.

Training

- Utilizing a numbers game during training to help re-enforce the concept
- Garage 5S video, really brought it home to staff, because they can see how it would work in their personal lives.
- Typically use real life situations or areas to get the point across a broad audience, for example: use a grocery store layout to compel thoughts on how well it works, what it would be like if there were no order, cleaning, and routines involved.
- After initial training having the employees try 5S at their home in a junk drawer or cabinet.

Reward & Recognition

- This may sound funny, but having breakfast and lunch catered as part of the event is something that really motivates employees.
- Personal recognition for excellence in 5S implementation or in the creation of a good best practice. "Best Practice" is competition of departments. 5S trophy which was

passed to the department that scored the highest on the monthly audits. This gained everyone's participation.

- Took pictures of "before" and "after" in many areas. Posted the pictures of the before shots on the outer walls of the cubicles, so you know at a glance if the owner of the area is following the 5s protocol.
- Have teams present their results in a formal report-out (~10minutes) at a monthly management meeting. Two team members show before and after photos along with metrics and explain how 5S has impacted their area.
- Link the 5S activity with process mapping. It helps to define the process that you are trying to support with 5S and identify what the inputs to each process step are to identify what is really needed in the area.
- Before and after photos posted on teams personal video displays and on the intranet helps spread the word and installs some pride within the team.
- Every 2 weeks I visit every 5S-zone to see how the zone looks like and to talk with the 5S-coordinator.

Supplies

- We created a 5S cart with the most widely used supplies including: camera, video camera, label maker, standards, kanban pouches, sign pouches, tags, floor tape, etc.
- 5S cart stocked with supplies for common 5S activities. Saves cost ordering in volume for the whole company and allows for "unplanned" 5S activity when there is time since materials do not have to be ordered.

Audits

- For 2 years we required regular audits of each area. And the management team would audit areas on a bi-annual basis. This really forced action & follow-through & brought visibility to the program and our expectations.
- Involve everyone; groups are assigned to audit another area for 5S compliance. Share results immediately, encourage feedback.
- A manager is assigned each day to conduct 5S audits. The findings are discussed with personnel in the area. A score is reported in the daily operations meeting.
- Act like it's your home. Reward

Suggested Checklist:**5 S Checklist**

Evaluated by:	
Month:	

Color	Marks	Result
Green	81-100	Good
Yellow	50-80	Fair
Red	0-49	Not Good

5 S	Definition	S. No.	Checkpoint	Marks	IPD			OPD		
					Pathology	Radiology	Diagnostic	Pathology	Radiology	Diagnostic
Seiri (Sort)	Divide the things into necessary type and unnecessary things should be kept away from working area	1	Only necessary things should be available near counter.	10						
		2	Racks and almirahs should contain only necessary items	10						
Seiton (Set in order)	Keep things in right place in right order. Layout to be made accordingly	1	All items should be separated according to the placards in place	10						
		2	Missing items/ reports from the racks	10						
Seiso (Shine)	I will keep my area always clean	1	Check whether reports are in order or not?	10						
Seiketsu (Standardize)	I will standardize and follow good work place	1	Check 5 'S' checklist available or not?	10						
		2	Check responsibility given or not?	10						
		3	Action plan for 5 'S' there or not?	10						
Shitsuke (Sustain)	I will follow rules, regulations & discipline strictly	1	People are aware of 5 'S' or not?	10						
		2	Action on 5 'S' is visible or not?	10						