

**“A Study on process flow of Cardiac Preventive
Health Check up Package in OPD, Fortis Escorts
Heart Institute, Okhla,
New Delhi”**

**A dissertation submitted in partial fulfillment of the requirements for the
award of
Post-Graduate Diploma in Health and hospital Management**

By

Abhilasha Singh

ENROLLMENT NO: PG/09/002



International Institute of Health Management Research

New Delhi

New Delhi – 110075

2009 – 2011

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Under the guidance of

**Dr. Raajiv Singhal
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ABSTRACT

“A Study on process flow of Cardiac Preventive Health Check up Package in OPD, Fortis Escorts Heart Institute, Okhla, New Delhi”

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AIM

To study the process flow of Cardiac Preventive Health Check up Package in OPD of Fortis Escorts Heart Institute, Okhla, New Delhi.

INTRODUCTION

Definition: Outpatient department, as the literature defines, is a part of the hospital with allotted physical facilities, medical & other staff in sufficient numbers, with regularly scheduled hours, to provide care for the patients who are not registered as in-patients¹.

An outpatient department is:

A hospital facility where non-urgent ambulatory medical care is provided, according to the National Hospital Ambulatory Medical Care Survey (NHAMCS).






A facility where the outpatient visits for receipt of medical, dental, or other services at a hospital and these patients are not lodged in the hospital. Each appearance by an outpatient to each unit of the hospital is counted individually as an outpatient visit, including all clinic visits, referred visits, observation services, outpatient surgeries, and emergency department visits.

The importance of the department lies in the following:

It contributes towards reducing the morbidity and mortality, and therefore, provides a stepping stone to health promotion and disease prevention, also.

By providing primary as well as comprehensive healthcare, an OPD can reduce the number of admissions for inpatient care. The cost of treatment in OPD being less than for inpatient services, cost-effectiveness and efficiency is ensured.





An OPD enables a hospital to deliver the following functions:

-  Control disease by early diagnosis and timely treatment.
-  Provide effective treatment on ambulatory basis.
-  Provide follow-up care to discharged patients and their rehabilitation.
-  Provide a facility for training of medical, paramedical and nursing staff.
-  Conduct activities in the field of preventive medicine such as well-baby clinics, obstetric consultations, parenthood and health clinics for schools.

GENERAL OBJECTIVE OF THE STUDY

- A Study on process flow of Cardiac Preventive Health Check up Package in OPD, Fortis Escorts Heart Institute.

SPECIFIC OBJECTIVE OF THE STUDY

-  To study various services provided under the package.
-  To bring the package into the TAT benchmark by looking into the lacunae that hinder achievement of the benchmark.
-  To ensure timely delivery of samples for assessing.
-  To identify the outliers.

STUDY SETTING

Department: Out Patient Department

Stakeholders of the study: Patient, Health Care Workers

Tools of the study: Cross sectional study (Cross-section analysis)

Data Collection:

Data collection methods used during the study includes concurrent observation data from registers kept at the executive centers, various test labs and tracking patients under sample of the study.

Statistical Analysis: Mean and percentage was calculated.

Sample Size: 60 Patients of Preventive Health Check Program.

CONCLUSION

This study reveals that productivity gap of first package is 1 hr 54 mins and second package is 2Hrs 17 mins.

The delay is mainly due to the time taken for final sugar pp report. Time and Motion study reveals the productivity gap for the two packages and the reason for the delay. Supporting data for my findings are enclosed with the annexure. My recommendations to reduce the delay are explained in the report.

ACKNOWLEDGEMENT

I would like to express my sincere thanks and gratitude to Fortis Escorts Heart Institute, New Delhi, for allowing me to complete my dissertation in the facility.

I would like to thank **Dr. Raajiv Singhal, Director FEHI** has always been a source of motivation & inspiration for me and for involving me in some of new initiatives and designing of future plans for the hospital.

Foremost, I would like to thank **Ms. Divya Chopra, OPD administrator**, EHIRC, New Delhi, who was kind enough to spare her valuable time and provided several important suggestions at every stage of my study. Her impeccable suggestions have added loads of value to my knowledge base.

Sincere thanks to all the staff at all levels, especially the OPD staff, for helping me at each and every step of my work. Heartiest gratitude to them for making my stay and work at this place a memorable one.

I am thankful to **Dr. V.R. Gupta, Medical Superintendent** for giving me the opportunity to complete my project at FEHI.

Last, but not the least, I would like to thank my guide and mentor **Dr. Dharmesh Lal, Associate Dean, IIHMR New Delhi** for all his support and guidance throughout.

Thank you to one and all.




























Abhilasha Singh

IIHMR, New Delhi.

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ABBREVIATIONS

-  **FEHI – Fortis Escorts Heart Institute**
-  EHC - Executive Health Check-up
-  ECG - Electro cardiograph
-  ECHO - Echocardiogram
-  CCU - Coronary / Cardiac Care Unit
-  CCU - Critical Care Unit
-  Cath. Lab. - Cardiac Catheterization Laboratory
-  CCC- Comprehensive Cardiac Check-up
-  F&B- Food and Beverages Department
-  HR- Human Resource
-  ICU -Intensive Care Unit
-  IPD- In-Patient Department
-  MRD - Medical Record Department
-  OPD- Out-patient Department
-  PFT - Pulmonary Functional Test
-  PTCA - Percutaneous Transluminal Coronary Angioplasty
-  PSA Test- Prostate Specific Antigen Test
-  PCS- Patient Care Services
-  PAP Smear- Papanicolaou Smear Test
-  TMT - Tread Mill Test
-  TAT- Turnaround time
-  USG - Ultra Sonography
-  FOS - Fortis Operating System
-  TPA- Third Party Administration
-  SDR- Same Day Review
-  LFT- Liver Function Test
-  CT - Computed Tomography

PART I

INTERNSHIP REPORT

ABOUT THE ORGANIZATION

PURPOSE STATEMENT-

"To create a world-class integrated healthcare delivery system in India, entailing the finest medical skills combined with compassionate patient care"

- Late Dr. Parvinder Singh (Founder Chairman, Fortis Healthcare Ltd.)

Fortis Escorts Heart Institute (FEHI) is a renowned name in the field of cardiac surgery, interventional cardiology and cardiac diagnostics. The institute formally came into existence in October 1988; FEHI was set up as a dedicated cardiac hospital to bring to India the best cardiac care, training of cardiac surgeons and cardiologists and also to conduct research of international standards. The Fortis group took over the hospital on 10th September 2005. Then, EHIRC was changed by the name FORTIS ESCORTS HEART INSTITUTE.

FEHI has a capacity of **285 beds, 9 Operation Theatres, 4 Cath Labs, 3 Heart Command Centers, 2 Heart Stations** besides an array of other world-class facilities. FEHI provides top end services in areas of acute care, invasive and non-invasive cardiology and state-of-the-art surgical procedures, besides playing a leading role in prevention, early detection and the reversal of heart disease. It is an **ISO 9001: 2000, NABH and JCI accredited** facility. The hospital has a total of **130 Critical Care beds** to provide intensive care to patients after surgery or angioplasty, emergency admissions or other patients needing highly specialized management including tele-cardiology (ECG transmission through telephone). The hospital is backed by the most advanced laboratories performing complete range of investigative tests in the field of Nuclear Medicine, Radiology, Bio-chemistry, Haematology, Transfusion Medicine and Microbiology.

The FEHI is unique in the field of Preventive Cardiology with a fully developed programme of Monitored Exercise, Yoga and Meditation for life-style management. The hospital is centrally air-conditioned and environmentally sealed to ensure optimum comfort with ideal asepsis and hygiene. A safe power generation and UPS system ensure that life saving equipment function without interruption. The hospital has a vast computer network of over 300 nodes linked through Ethernet, utilizing the latest IT tools striving to support the best care and service to the patients.






MISSION

Our Mission is to improve the quality of health care and become the most revered healthcare service provider in India by 2010.

VISION

To create a world-class integrated healthcare delivery system in India, entailing the finest medical skills combined with compassionate patient care.

This will be achieved by:






-  Providing state-of-the-art world standard health care that exceeds expectations of patients and families.
-  Pursuing independent as well as collaborative research in all aspects of cardio-thoracic medicine and surgery to develop affordable solutions for heart problems of this region.
-  Establishing a network of joint ventures and satellite centers to extend the availability of quality health care in India and other developing countries.
-  Providing expert training for medical, para-medical, nursing and other professionals in the field of heart care.
-  Networking with other organizations to promote health and wellness in society through education, preventive checkups and community outreach programs

VIRTUOUS VALUES







- **Vision:** Imbibe and share the vision
- **Integrity:** Lead through honesty and integrity.
- **Respect:** Earn respect.
- **Trust:** Gain patient trust.
- **Understanding:** Commit to compassion, care and understanding.
- **Own:** Own quality excellence.
- **Uphold:** Uphold innovation and continuous improvement.
- **Share:** Develop and share success.

FACILITIES AT FORTIS ESCORTS HEART INSTITUTE (FEHI):

Cardiac surgery

-  Bypass surgery (CABG)
-  Valve surgery
-  Laser surgery
-  Vascular surgery
-  Robotic surgery

Cardiology

-  Angiography
-  Electrophysiology (EPS)
-  Angioplasty & stenting
-  Atherectomy
-  Non-surgical repair of defects in the heart
-  Permanent Pacemaker Implantation

Anesthesiology

Paediatric cardiac care



Radio diagnosis and imaging

Cardiac rehabilitation centre

Heart command centres

Preventive health check-ups

Mobile coronary care units

-  Ambulance services
-  Air Ambulance services

Escorts heart alert service – Tele ECGs

Community outreach programmes

OPD DEPARTMENT OF FORTIS ESCORTS HEART INSTITUTE (FEHI)





















-  Timings: 8:00 am to 5:00 pm
-  The OPD department of the hospital is located as a separate complex around the hospital.
-  Since, Fortis Escorts Heart Institute is a cardiac super-specialty hospital; its OPD department mainly provides cardiac consultations, cardiac comprehensive packages and also, employee health check-up packages. These packages include a variety of diagnostic services such as electrocardiography (ECG), echocardiography (ECHO), chest x-ray, treadmill test (TMT), ultrasound and blood tests.
-  All the patients' coming for comprehensive cardiac packages gives blood samples, urine samples, undergoes chest X-ray and ECG examination. Then, the patient goes for cardiac consultations and on doctor's advice, may also undergo ECHO, TMT and ultrasound examinations.
-  Signage is available at various places inside and outside the OPD directing the patients.
-  Various investigation facilities are available close to each other reducing the distance and motion time.
-  Adequate waiting hall is available in the main lobby with LCDs at place, connected with public utilities.
-  Coffee shop is available in the basement of OPD while the other investigations are conducted on the ground floor.

TABLE 1: Staff pattern in the various departments of OPD

Department	No.	Consultant(s)	Technician(s)	Nurse(s)
Sample Collection Room	2	-	6	2
ECG Room	2	-	2	-
Chest X-ray Room*	1	1	2	-
ECHO Room	2	2	2	-
TMT Room	2	2	6	2
Ultrasound Room	1	1	1	-

*Radiologist available in chest x-ray room is responsible for making the x-ray reports for chest x-rays, bone x-rays and mammography, also.

FUNCTION OF OPD COORDINATOR

-  Taking of the appointments over the phone calls when they receive the filtered phone calls from the call centre.
-  Informing all the departments about number of appointments like F&B , Diagnostics, lab etc.
-  They call all the clients a day before to confirm their appointments.
-  Informing FHM Clients about precautions and other information related to their Packages on the phone is also what they do.
-  Handling any kind of a query which is related to Health Checkups.
-  Coordinating patients of various Health Check ups
-  Taking clients to various departments like sample collection room, x-ray, Ultrasound , ECG, etc.
-  Escorting the clients to the FHM Lounge for their breakfast.
-  Informing the clients about their re-consultations and reports after completing the FHM process.
-  Compiling of all the reports is done by the coordinator; they get the reports from all the departments and compile them.
-  Dispatching of the credit bill.
-  Generating a summary and handing it over to clients.

PART II

“A Study on process flow of Cardiac Preventive Health Check up Package in OPD, Fortis Escorts Heart Institute, Okhla, New Delhi”

CHAPTER 1: INTRODUCTION TO THE STUDY

As we know that the patients coming to the hospital are already in grief and pain, increased waiting times at different departments as well as for receiving the records after the completion of tests add to their grievances. So, the aim of the hospital should be to ensure a smooth flow of the patient with minimal wait time and hassles in the updation of records. Reduction in the waiting time and the turnaround time will improve efficiency of the hospital as more number of patients would be treated in the same period of time. Also, it will improve the patients' satisfaction and eventually revenue and profit of the hospital.

1.1 FORTIS ESCORTS HEART INSTITUTE

- **OPD**

It is very significant that, EHIRC is paying much attention to the proper planning, designing, organization and functioning of the outpatient department as any other department.

The outpatient department of Escorts Heart Institute and Research center Delhi has a separate building for outpatients with Upper Basement, Ground Floor and First Floor having all the important services X-ray, TMT, Echo, ECG, Surgical OPD, Pediatric cardiology, consultation, Executive Health Check(EHC), Comprehensive Cardiac Check (CCC), Pharmacy. It has no lab facilities but the sample are collected in the sample collection rooms in ground floor and basement and sent directly to the main building and the patients can collect the reports from the report room (37) in the ground floor of OPD. The EHC is done in the upper basement, CCC and Surgical OPD is done in the Ground

floor, Pediatric cardiology in the first floor. There are about 30 consultant doctors for consultation in the OPD.

FEHI has a separate OPD department with basement totally meant for preventive health check. It offers a wide range of preventive health check packages for various mindset. This area is exclusively designed for providing complete body check-up for.

1. Corporate executives.
2. Pre-employment check-ups
3. General health check-up for walk-in patients.

For corporate clients, Escorts have various health check packages that are pre-designed and customized by the respective company, according to their policies.

These procedures are conducted at the Rehabilitative Center, OPD block. The patients usually come with a prior appointment, empty stomach that is then undergone through a series of tests under the supervision of doctors. The package includes complimentary breakfast and doctors consultation both pre-post, valid up to 15 days from the date of visit. Executives coming from empanelled companies are required to bring along a letter of reference from their office, duly authorizing the check.

DEFINITION OF IMPORTANT TERMS:

Waiting Time is the time spent by the patient in the outpatient waiting area before entering the diagnostic or consultation cubicle.

Service Time is the time consumed in the diagnostic and consultation cubicles.

Turnaround Time is the time from the point of registration of the patient till the updation of last report of the patient.

Target Service Time is the time that should have been spent in providing services to all the patients that came to a clinic or investigation room.

Observed Service Time is the time actually spent in the provision of services to all the patients in an investigation room.

1.2 LITERATURE REVIEW

Foreword in India, the health care system is experiencing dramatic changes from what it was a few decades ago. Preventive, as opposed to curative, health care has become the preferred option in most developed countries as it allows employees to be more productive. However, preventive health care in India is still at an early stage. Sedentary lifestyle has led to heart diseases and high levels of stress. Preventive health care involves measures to identify and minimize the risk of diseases, and alter the course of existing ones for a healthy and productive life. This study, being the first of its kind in India, makes an important contribution to preventive healthcare practice in the corporate sector by examining the linkage between corporate preventive health care programmes and profitability. In order to assess the impact of preventive health care on the Indian Industry, a survey of some of the best- performing companies and a sample of employees from the manufacturing and service sector was undertaken. Finally, based on the findings from our surveys, certain policy recommendations have been made to promote preventive healthcare practice in India's corporate sector and ensure productivity and competitiveness of the Indian Industry.

Well-designed time and motion study brings fruitful inspirations and ideas on improvement of health care. This special issue offers practical techniques and procedures of time and motion study, plenty of analytic methods and effective advices on data base management of time and motion study. Almost all of the contents are derived from our ongoing commitment of time and motion studies. Readers will find some meaningful suggestions not only on time and motion study but also on health-care-job analysis and management. In the future, most of the information obtained by time and motion study will be provided by the hospital information system. However, the necessity of the health-care-job analysis will be everlasting. It is important for the researchers and the clinical staffs to talk over the goal of the study and the problems to be solved and to get concrete vision of appropriate job system. This chapter also covers following topics: the need for the consecutive time and motion study, an idea of location analysis from staff's flow line, a method of carrying out a focus-on time and motion study, planning a time and motion study for patients' traffic, the importance of job classification and description of patient's status, the future of the time and motion study.

A time motion study was conducted in 36 hospitals across the country.

Context: Nurses are the primary hospital caregivers. Increasing the efficiency and effectiveness of nursing care is essential to hospital function and the delivery of safe patient care.

Objective: We undertook a time and motion study to document how nurses spend their time. The goal was to identify drivers of inefficiency in nursing work processes and nursing unit design.

Design: Nurses from 36 medical-surgical units were invited to participate in research protocols designed to assess how nurses spend their time, nurse location and movement, and nurse physiologic response.

Main Outcome Measures: Nurses' time was divided into categories of activities (nursing practice, unit-related functions, nonclinical activities, and waste) and locations (patient room, nurse station, on-unit, off-unit). Total distance traveled and energy expenditure were assessed. Distance traveled was evaluated across types of unit design.

Results: A total of 767 nurses participated. More than three-quarters of all reported time was devoted to nursing practice. Three subcategories accounted for most of nursing practice time: documentation (35.3%; 147.5 minutes), medication administration (17.2%; 72 minutes), and care coordination (20.6%; 86 minutes). Patient care activities accounted for 19.3% (81 minutes) of nursing practice time, and only 7.2% (31 minutes) of nursing practice time was considered to be used for patient assessment and reading of vital signs.

Conclusion: The time and motion study identified three main targets for improving the efficiency of nursing care: documentation, medication administration, and care coordination. Changes in technology, work processes, and unit organization and design may allow for substantial improvements in the use of nurses' time and the safe delivery of care.

1.3 GENERAL OBJECTIVE OF THE STUDY

- A Study on process flow of Cardiac Preventive Health Check up Package in OPD, Fortis Escorts Heart Institute.

1.4 SPECIFIC OBJECTIVE OF THE STUDY

- To study various services provided under the package.
- To bring the package into the TAT benchmark by looking into the lacunae that hinder achievement of the benchmark.
- To ensure timely delivery of samples for assessing.
- To identify the outliers.

CHAPTER 2: DATA AND METHODS

1.1 METHODOLOGY:

STUDY DESIGN- Concurrent Observational study.

STUDY SETTING – Rehabilitation Center, OPD block, Escorts Heart Institute and Research Center, Okhla, New Delhi

SAMPLE SIZE- 60 Patients of Preventive Health Check Program

SAMPLING METHOD- Simple random sampling

INCLUSION CRITERIA-Patients for preventive health check with Escorts Health Checkup and Executive Health Checkup packages.

METHODS OF DATA COLLECTION- Registers kept at the executive centers, various test labs and tracking patients under sample of the study.

STUDY PERIOD: 20 days.

STATISTICAL ANALYSIS: Mean and percentage was calculated.

CHAPTER 3: RESULTS AND FINDINGS

Every patient coming for executive health check was considered and observed throughout all the procedures he/she undergoes, till the time their reports are compiled in the report room.

Average time taken for each package was calculated by combining the time spent by the patient for the tests, since the time his billing is done till he undergoes the last test and finally the time at which the reports are available.

The data was collected about 60 patients visiting the executive health check, which consist of company executives, executives for pre-employment medical checkup and the walk-in patients.

I observed preventive health packages and observed the process flow of ECCC patients. I observed the functioning of the various departments here. Time spend by the patients at various department and made comparative study of the standard time and actual time to find out the productivity gap. Preventive health check packages and process flow is as follows:

1.1 PREVENTIVE HEALTH CHECK PACKAGES

- 1. Escorts Health Check**
- 2. Escorts Executive Comprehensive Cardiac Check**
- 3. Escorts Comprehensive Cardiac Check**
- 4. Escorts Whole Body Check**
- 5. Escorts Complete Heart Check**
- 6. Escorts Diabetes Check**
- 7. Escorts Ortho Check**
- 8. Escorts Women Check**

Escorts Health Check

Tests include:-

- Doctor's consultation and full medical examination
- Blood tests:
 - Complete haemogram (Hb, TLC, DLC
 - ESR, Haematocrit, peripheral smear)
 - Blood group (ABO, RH)
 - Blood sugar (fasting and post prandial)
 - Blood urea
 - Serum uric acid
 - Lipid profile
- Urine examination
- X-Ray chest PA
- ECG
- PSA
- Ultrasound whole abdomen
- Eye examination (ophthalmology)
- Gynecology with pap smear test
- Stress screening by psychologist
- Post check-up consultation

Escorts Comprehensive Cardiac Check-up

- **Tests include:-**
- Doctor's consultation and full medical examination
- Blood tests:
 - Complete haemogram (Hb, TLC, DLC)
 - ESR, Haematocrit, peripheral smear)
 - Blood group (ABO, RH)
 - Blood sugar (fasting and post prandial)
 - Blood urea
 - Serum uric acid
 - Serum creatinine
 - Lipid profile
- Urine examination
- X-Ray chest PA
- ECG
- Exercise stress test (TMT)
- Faeces examination
- PSA
- Ultrasound whole abdomen
- Eye examination (ophthalmology)
- Gynaecology with pap smear test
- Stress screening by psychologist
- Post check-up consultation

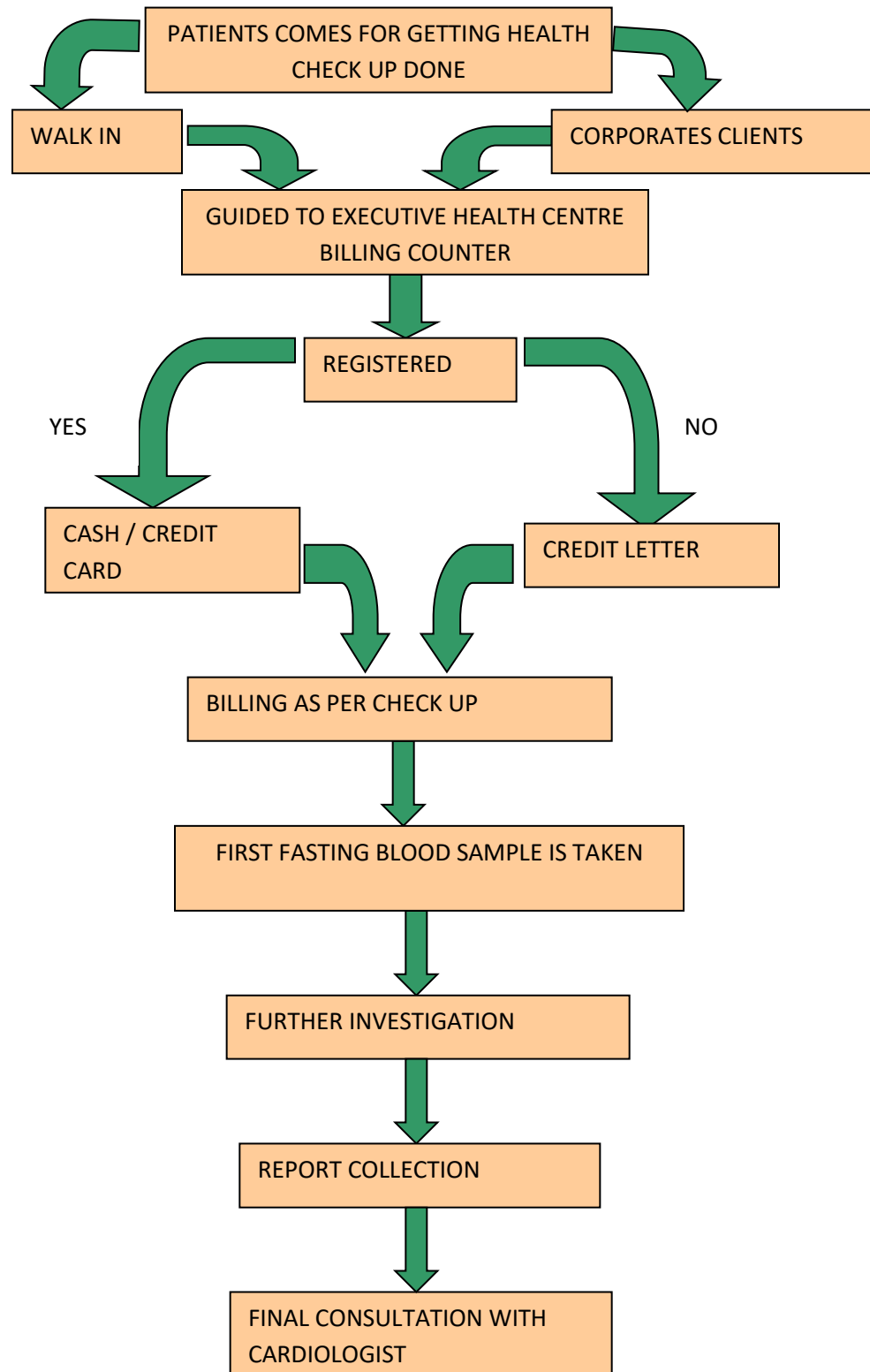
- **Escorts Executive comprehensive cardiac check-up**
 - **Tests include:-**
 - Doctor's consultation and full medical examination
- Blood Tests:-
 - Complete haemogram (Hb, TLC, DLC)
 - ESR, Haematocrit, peripheral smear)
 - Blood group (ABO, RH)
 - Blood sugar (fasting and post prandial)
 - Blood urea
 - Serum uric acid
 - Serum creatinine
 - Lipid profile
- Urine examination
- X-Ray chest PA
- ECG
- PFT
- Exercise stress test (TMT)
- Faeces examination
- PSA
- Ultrasound whole abdomen
- Dental examination
- Eye examination (ophthalmology)
- Gynaecologist with pap smear test
- Stress screening by psychologist
- Post check-up consultation

1.2 PROCESS FLOW:

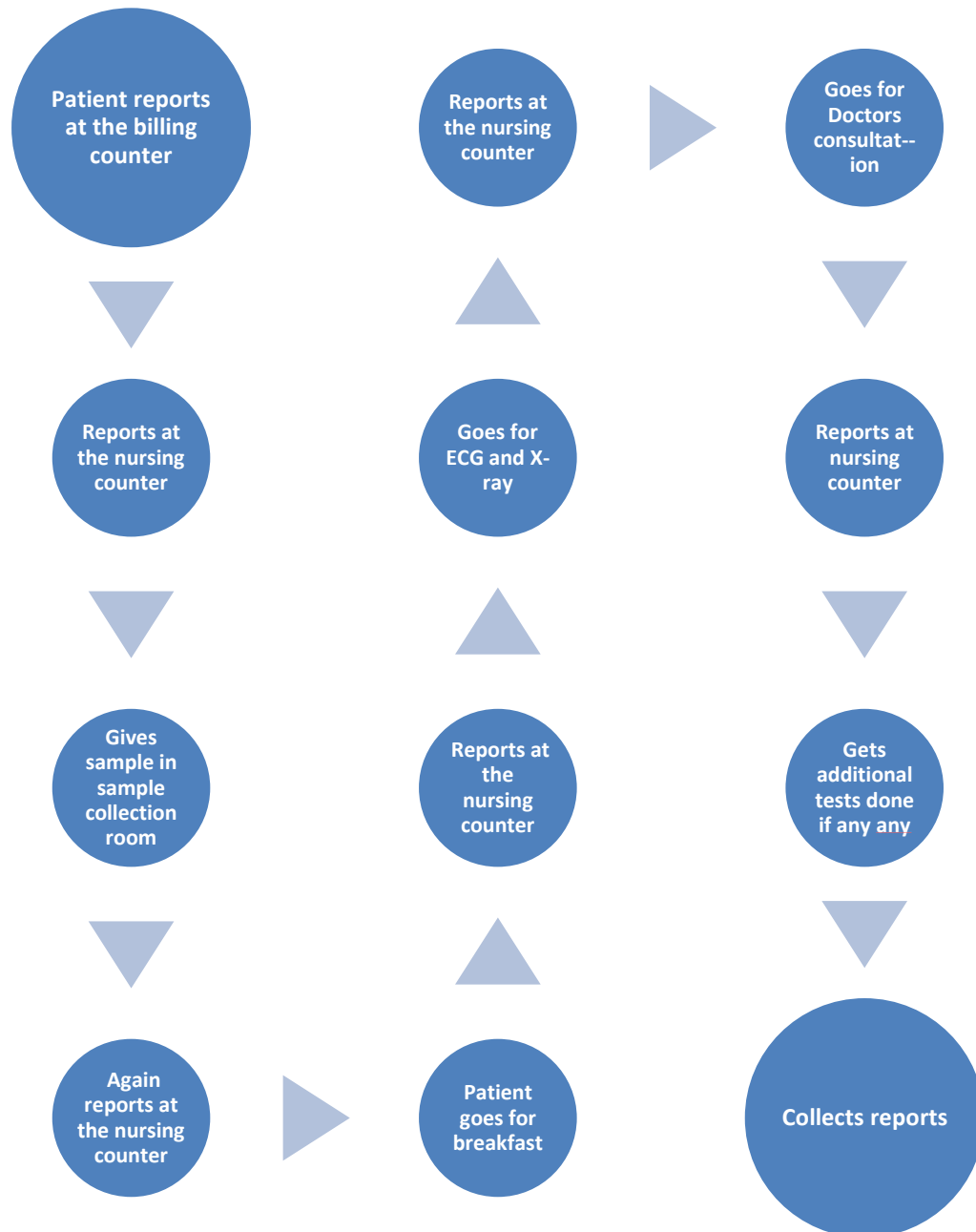
1. As soon as the patient enters the executive health check-area, he firstly chooses the package of tests he wants to undergo and the billing is done.
2. In case of a company patient, the package is pre-decided according to the company's norms and their respective companies reimburse the payment.
3. As per the health-check package, a tracker is prepared enlisting all the tests and consultations the patient will undergo. The tracker is given to the patient along with a blue card for doctor's notes.
4. Also, the staffs maintain a tracker register. A tick mark is put against each test when they are consecutively completed. If a patient wants to undergo a separate test (out of package), they are also performed with an additional payment.
5. There are two counters one at the front desk (coordinating medical examination, blood check, eye consultation, dental check up), the inner-executive counter (coordinating the cardiac and respiratory diagnostic test)
6. The reports of all respective tests are sent to the report room where they are compiled and given according to the company's criteria.
7. Post- consultation appointment is fixed within 15 days of patients visit.
8. Reports for the 1st, 2nd, 3rd packages are suppose to be made available to the patients on the same day (evening), except the reports for PAP smear, which takes approximately 2-3 days.
9. Patient could collect complete report from report room (37- ground floor).

- 10.** Patients have to do the post-checkup consultation with all reports on the same day or within 15days from check- up date.

PROCESS FLOW FOR EXECUTIVE HEALTH CHECK UP



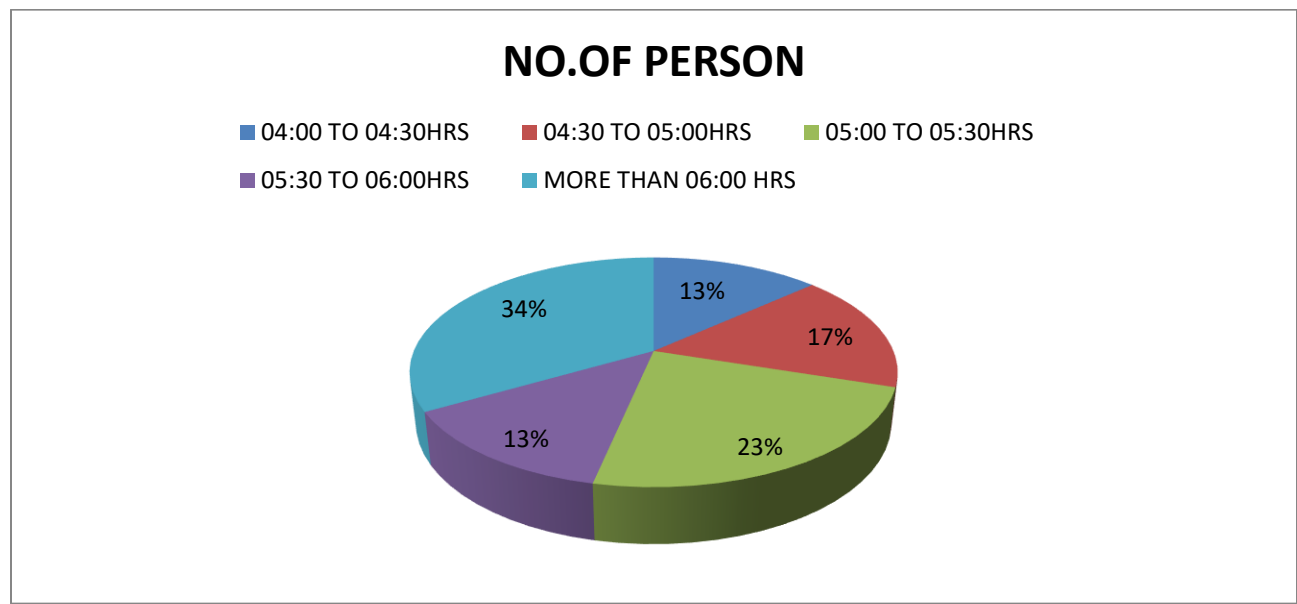
PROCESS FLOW FOR COMPREHENSIVE CARDIAC CHECK UP



1.3 DATA ANALYSIS AND INTERPRETATION

1. Escorts health check

TURN AROUND TIME	NO.OF PERSON	PERCENTAGE
04:00 TO 04:30HRS	4	13%
04:30 TO 05:00HRS	5	17%
05:00 TO 05:30HRS	7	23%
05:30 TO 06:00HRS	4	13%
MORE THAN 06:00 HRS	10	34%



This Pie Diagram shows the TAT, taken for patients undergoing escorts health check up. Here **4Hrs 10 min** is taken as the ideal time, after doing **Network analysis**.

Out of the 30 samples we took, only **13%** completed within **4 Hrs 30 min**.

17% completed in between **4 Hrs 30mins and 5 Hrs**.

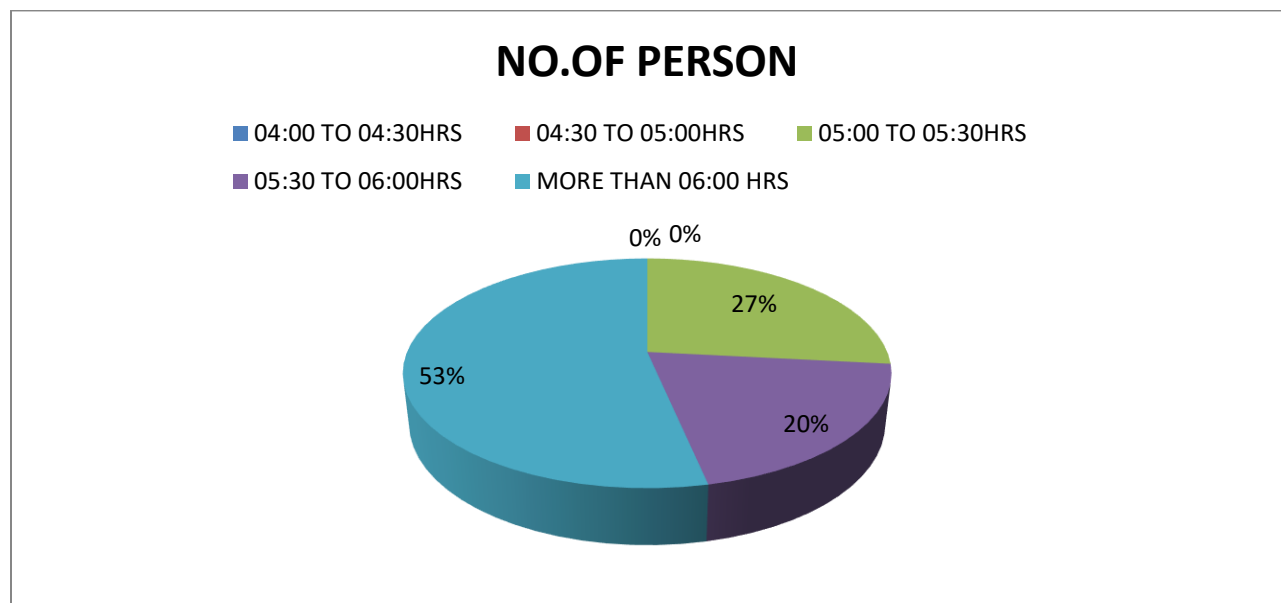
23% completed between **5 Hrs & 5Hrs 30 mins**.

13% completed in between **5Hrs 30 mins & 6Hrs**.

And it is alarming that **34%** took above **6 Hrs** to complete. (The supporting facts are given as annexure)

2. Escorts Executive Health Check

TURN AROUND TIME	NO.OF PERSON	PERCENTAGE
04:00 TO 04:30HRS	0	0%
04:30 TO 05:00HRS	0	0%
05:00 TO 05:30HRS	8	27%
05:30 TO 06:00HRS	6	20%
MORE THAN 06:00 HRS	16	53%



This Pie Diagram shows the TAT, taken for patients undergoing **Escorts Executive health check**. Here **4Hrs 10 min** is taken as the ideal time, after doing **Network analysis**.

It's alarming that, out of the 30 samples we took, **nobody was able to complete the process within 5 Hrs.**

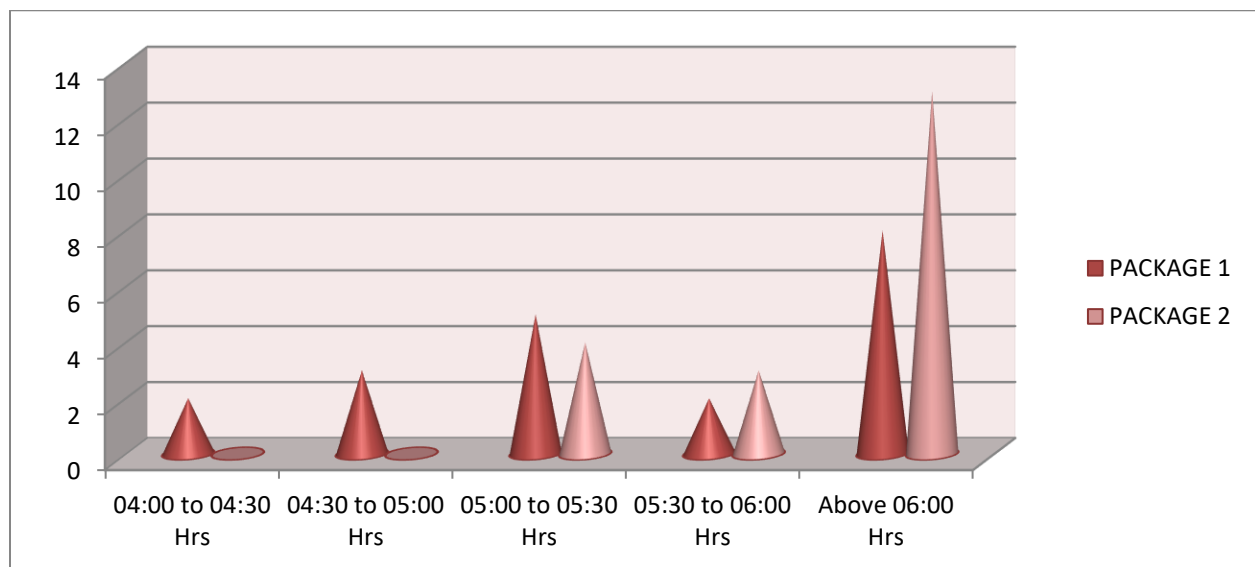
27% completed between **5 Hrs & 5Hrs 30 mins.**

20% completed in between **5Hrs 30 mins & 6Hrs.**

And it is alarming that **53%** took above **6 Hrs** to complete. (The supporting facts are given as annexure)

COMPARISON OF TAT OF TWO PACKAGES

TURN AROUNDTIME	PACKAGE 1	PACKAGE 2
04:00 to 04:30 Hrs	4	0
04:30 to 05:00 Hrs	5	0
05:00 to 05:30 Hrs	7	8
05:30 to 06:00 Hrs	4	6
Above 06:00 Hrs	10	16



Comparative study reveals that only Escorts health check could be able to complete the process within 04Hrs and 30mins and that is only 13%.

More than 30% of the both executive health check and comprehensive health check completed after 06:00Hrs.

In between **04:30 and 05:00 Hrs**, 13% of 1st package, 0% of 2nd package got completed.

In between **05:00 and 05:30Hrs**, 23% of 1st package, 27% of 2nd package got completed.

In between **05:30 and 06:00 Hrs**, 13% of 1st package, 20% of 2nd package got completed.

Above **06:00 Hrs**, 34% of 1st package, 53% of 2nd package got completed.

1.4 RESULT

The sample was collected randomly and the following results have been obtained:

S.no	Indicator	Time taken
1.	Average time taken for completion of test of 1st package.	03:00 Hrs 42 mins.
2.	Average time taken for completion of test of 2nd package.	03:00 Hrs 48 mins.
1.	Average time taken for completion of 1st package reports	06:00Hrs 04 mins.
2.	Average time taken for completion of 2nd package reports	06:00 Hrs 27 mins.

- **Productivity gap for 1st package is 01:00Hrs 54mins**
- **Productivity gap for 2nd package is 02:00Hrs 17mins**

Findings:

- Lack of communication between the personnel at nursing counter and the sample collection room regarding the verification of the PP sample timings of the patient.
- Non-recording of the reason why a patient came late for giving his/her sample.
- Delay in sample delivery to the lab.

Observed delays:

- Lack of proper instructions to the patient about the procedures to be undergone and guidelines to be followed. Especially during the days of large number of patients often confusion occurs that results in delaying the tests.
- The frequency for dispatch of sample varies, often resulting in long delays when patients are more in number.
- Disparity in the breakfast time from 10min to half an hour.
- There is a disparity in the final report generation after the last the test (sugar PP) from half an hour to 3 hours.

CHAPTER 4: DISCUSSION

SWOT ANALYSIS FOR PREVENTIVE HEALTH CHECK-UP

The acronym SWOT stands for Strength, Weakness, and Opportunity & Threats.

SWOT analysis helps an organization to formulate an appropriate strategy to achieve the planned objective and goals.

SWOT analysis involves scanning of external environment, which provides opportunities on one-hand & poses threats on the other. This will help finding out an appropriate niche for the organization in the environment. It also requires assessment of the internal factors to reveal the strength & weakness of the organization to identify distinctive competence of the organization by assessing the importance and impact of the key factors (strengths, weakness, opportunities and threats) relevant strategy is formulated.

STRENGTHS

Is a resource or capacity available with the organization, which can be used effectively to achieve the objective .

WEAKNESS

Is a limitation, fault or defect in the organization, which comes in the way of effective and efficient use of the resources of the organization.

OPPORTUNITY

Any favorable situation in the organization external environment, which the organization can take advantage of .

THREAT

A situation potentially damages to the organization and its strategy. It is a barrier or constraint.

STRENGTHS

1. Separate OPD Infrastructure:

EHIRC has a separate OPD infrastructure with base meant for executive health checkups. It has integrated facilities with separate test rooms for ECG, TMT, USG, ECHO, PFT and sample collection room too. Separate OPD parking area is also there. A subway, which connects the main building and OPD, and shuttle service, meant for patients.

2. Affordability:

Preventive health check-up package is of EHIRC is of 8 different types varying from a tariff of Rs.2500 to 14500Rs. This is affordable for both domicile as well as international patients.

3. Choice of Selection:

Packages are need oriented. It suits the needs of people with different mindset and for corporate too. Eight packages provide a great choice of selection, which others don't have.

4. Response:

EHIRC believes in fast response. Whenever patient touch with executive center the appointment will be immediate. Even in Internet and telephone appointment can be done.

5. ISO-9001, NABH and JCI Accreditation.

WEAKNESS

1. Delay in Report Delivery:

Sometimes reports are not delivered on time. So this process needs streamlining.

2. Prolonged Process Time:

The process time is taking more than six hours for 80% of patients against the ideal time of 4 hours 30 mins.

3. Same Day Review Is Rare:

Same day review is very rare (about 10-20%). So the person has to spend at least two days for a preventive health check up.

4. Lack in Modernization:

- ELECTRONIC HEALTH CARD is not yet introduced.
- PNEUMATIC TRANSIT SYSTEM is still in the table of debate only.
- PICTURE ARCHIVING AND COMMUNICATION SYSTEM & DIGITAL IMAGING and COMMUNICATION IN MEDICINE SYSTEM are not in use yet.

OPPORTUNITY

1. Pioneer in Cardiology:

EHIRC has a place in world map since the last 20 years, which attracts international patients from all over the world.

2. Medical Tourism:

Uplift of Medical Tourism made India a global healthcare destination. So this enhances the opportunity of attracting more International patients.

3. Corporate Tie-Ups:

EHIRC has already tie-ups with 102 corporate companies, which strengthens the opportunity of getting more Preventive Health Check-ups from corporate world.

4. Health Insurance:

With significant increase in the number of people going for health insurance, given a new market for the health checkups.

THREAT

1. Reduction in Inflow:

Statically data reveals sudden reduction in inflow of the patient

2. Competitors:

Preventive health check is a new strategy, which competitor also put emphasis on.

3. High Turnover of Skilled Staff:

Turnover of skilled staff is high in last two years.

CONCLUSIONS

Fortis Escorts Hospital, Okhla is a Super specialty hospital with an effective time and motion of the patient.

This study reveals that productivity gap of first package is 1 hr 54 mins and second package is 2Hrs 17 mins.

The delay is mainly due to the time taken for final sugar pp report. Time and Motion study reveals the productivity gap for the two packages and the reason for the delay. Supporting data for my findings are enclosed with the annexure. My recommendations to reduce the delay are explained in the report.

Management studies have proved that with loyal customers the profits raise upto 60% . Service recovery helps in addressing the patient's issues and clear understanding of their requirement.

It also helps in:

- ✓ Following business goals.
- ✓ Customer loyalty/retention.
- ✓ Expansion and building of profitable relationship with our customers/patients.
- ✓ Continuous learning and improving our services.
- ✓ Delivering services tailored to patient need.

The loyalty of the customer comes in with satisfaction of the patient in this case. Retention of a customer is a more difficult task as compared to acquisition. Therefore time and motion study of patient during a visit to the hospital has a vital role to play in customer retention.

As per the observations made by me, what OPD functioning requires is nothing more than a little more stress on collecting the feedback from the patients and then to work on those grounds. Time and motion of the patients have been clearly defined. I have also mentioned the proposed activity for the same.

The hospital has acquired NABH Accreditation, ISO 9001 & ISO 14001 Certification.
Overall a great place to learn on all the aspects of the Hospital as a system.

I hope that, with the special consideration of SWOT ANALYSIS and the implementation of Scientifically sound suggestions; we will be able streamline the preventive health checks in near future.

RECOMMENDATIONS

TO REDUCE DELAY IN ARRIVAL


A- Advise to come between 8:30 and 9:30 at the time of appointment

TO REDUCE DELAY IN REGISTRATION

A- Provide brochures with description of various tests which enables the walk-in patients to distinguish between various packages and to choose according to their needs.

B- Provide LED display of doctors available on that particular day, make ease for the patient to choose their consultant

TO REDUCE DELAY IN LAB

 CONDUCT A FEASIBILITY STUDY OF PNEUMATIC TRANSIT SYSTEM – Pneumatic tubes are systems in which cylindrical containers are propelled through a network of tubes by compressed air or vacuum. In FEHI the samples are transported from collection centre to main lab by HDT Logistics (Human Based Transport).

RISKS AND PROBLEMS THAT ENTAIL HDT LOGISTICS

- DELAY
- THEFT
- EXPOSURE
- BIO-HAZARD
- PERSONNEL
- ENERGY

In order to overcome the above problems and risks and to incorporate automation and logistic optimization in healthcare, there is a unique solution available- Hospital pneumatic tube systems are economical, hi-tech, swift, secure, safe solution. It will take only 1 to 2 min to transport a sample from a department to laboratory.

TO REDUCE DELAY IN USG

- Provide a bottle of water at the time of registration, to Deduce delay in USG.
- Advise patient to take water from home at the time of appointment.

TIME MANAGEMENT TEAM OF PATHFINDERS

Now a days, a patient after every test has to come to executive centre and from there they are guided to next test. Time management team with 'pathfinders' or team leaders for a team of patients with 3 or 5 members, Controlled by the reception centre

Advantages

- It will reduce time delay for test.
- Pathfinders could reshuffle tests according to the queue for various tests and enable to finish the tests within targeted time of 4.5 hrs.

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ANNEXURE

Patient name	Reg no	Pack age	Billi ng Time	First Sam ple given	First Sample dispatc hed	EC G	Xra y	US G	Breakf ast	PP Sam ple given	Test finishi ng time	PP sample dispatc hed	Final Repo rts given	TAT fro m billi ng
Mr.Brahmpal Chuhan	237079	1 st	08:15	08:20	08:30	08:42	10:07	NA	09:15	11:15	03:00	12:00	13:22	05:07
Mr.Mohammed Qasim	359964	1 st	12:20	12:27	13:10	12:35	14:02	12:50	13:50	15:50	03:30	16:30	18:13	05:53
Mr.S.B.S.Tyagi	172616	1 st	08:35	08:45	09:10	09:01	10:49	09:25	09:50	11:55	03:20	12:00	13:35	05:00
Mr.Deepak Aggarwal	360060	1 st	11:30	11:45	12:00	11:50	14:20	12:13	14:15	16:15	04:45	16:30	21:36	10:06
Mr.P.S.Ahluwalia	358999	1 st	08:55	08:56	09:05	09:05	13:21	12:40	13:00	13:05	04:10	03:25	17:23	08:28
Mr.Dalip Kumar	360210	1 st	09:12	09:20	09:35	09:46	10:15	NA	09:45	11:40	02:28	11:50	14:40	05:28
Mr.Manjit singh Gill	310561	1 st	10:00	10:04	10:05	10:20	11:30	10:50	11:20	13:20	03:20	13:20	14:20	04:20
Mrs.Ramlesh gupta	360203	1 st	08:25	08:35	08:35	08:56	09:29	09:50	10:15	12:20	03:55	12:30	15:40	07:15
Mrs.Anita midha	360351	1 st	09:12	09:15	09:20	09:20	11:00	11:30	11:55	13:55	04:43	13:55	14:42	05:30
Mr.Rajan vaid	360299	1 st	10:20	10:30	10:45	10:35	10:55	11:30	11:55	13:55	03:35	14:10	15:47	05:27
Mr.Pradeep singh jain	360621	1 st	08:40	08:45	08:45	09:02	11:00	09:25	09:50	11:50	03:10	12:20	13:30	04:50
Mr.pradeep khajarnath	312752	1 st	08:36	08:40	08:50	08:54	10:30	09:05	10:00	12:00	03:24	12:20	14:27	05:51
Mr.R.C.Gulati	260061	1 st	08:10	08:15	08:25	08:23	10:00	08:30	09:30	11:30	03:20	12:10	13:27	05:17
Mrs.Suraiya Zaidi	151852	1 st	09:15	09:20	09:30	09:25	10:00	11:00	11:30	13:30	04:15	13:30	15:26	06:11
Mr.Manmohan Kalra	359694	1 st	08:55	09:00	09:00	09:10	10:12	11:15	11:30	13:30	04:35	13:30	16:11	07:16

Mr.Kamal bakshi	7860 4	1 st	09:0 0	09:05	09:30	09: 10	09: 45	10: 10	10:30	12:10	03:10	12:30 16:00	07:0 0
Mr.Raghuveer Singh	3597 06	1 st	10:0 0	10:20	10:40	10: 30	11: 00	11: 45	12:15	14:15	04:15	14:30 14:08	04:0 8
Mr.Mamta Makkar	3597 61	1 st	08:3 5	08:35	08:35	08: 45	10: 00	10; 30	11:00	13:00	04:25	13:30 15:35	07:0 0
Mr.Ashoke Dutta	3610 49	1 st	08:0 8	08:15	08:25	08: 20	09: 40	08: 40	09:20	11:20	03:12	11:45	
Mr. Andleep Zehra	3597 82	1 st	10:0 0	10:10	10:30	10; 20	10: 40	11: 00	11:45	13:45	03:45	13:45 16:43	06:4 3

Patient name	Reg no	Pack age	Billi ng Time	First Sam ple give n	First Sampl e dispatc hed	EC G	Xra y	TM T	US G	Bre ak fast	PP Sam ple give n	Test finish ing time	La st tes t	PP sample dispatc hed	Final Repo rts give n	TAT (fro m billi ng)
Mrs.Jugnu Sethi	3599 40	2nd	09:5 8	10:1 0	10:45	10: 20	11: 20	11: 50	11: 30	12: 02	14:1 7	04:19	14: 17	14:30	15:01	05:0 3
Mrs.B.S.Bisho yee	3599 37	2nd	09:5 0	09:5 6	10:10	10: 10	11: 00	12: 10	10: 25	10: 50	13:0 0	03:10	13: 00	13:30	15:09	05:1 9
Mrs.S.Baral	3599 36	2nd	09:4 7	09:5 8	10:10	10: 15	11: 05	11: 50	10: 20	10: 50	13:0 1	03:14	13: 01	13:30	15:09	05:2 2
Mr.Kau Shalender	3599 60	2nd	11:3 0	11:5 2	12:00	12: 11	14: 08	13: 06	12: 35	14: 00	16:0 5	04:35	16: 05	16:30	19:06	07:3 6
Mr.Narendra Kothari	3127 7	2nd	08:1 5	08:2 0	08:30	08: 34	09: 28	10: 10	NA	09: 00	11:0 0	02:45	11: 00	12:00	13:22	05:0 7
Mrs.Seema Singh	3599 62	2nd	11:3 2	11:5 5	12:00	12: 14	14: 02	15: 00	12: 45	14: 00	16:0 0	04:28	16: 00	16:30	18:16	06:4 4
Mr.Ramkumar Anand	8228 0	2nd	08:1 8	08:2 0	08:35	08: 51	10: 16	11: 35	09: 03	09: 25	11:2 5	03:07	11: 25	12:00	14:56	06:3 8
Mr.VipulGupta	3600 12	2nd	08:2 5	08:3 0	08:35	08: 47	09: 40	10: 25	09: 35	10: 45	12:4 5	04:20	12: 45	13:00	15:15	06:5 8
Mr.Subash Jain	3600 13	2nd	08:2 7	08:3 0	08:35	08: 56	10: 48	10: 35	09: 17	10: 45	12:4 5	04:18	12: 45	13:00	16:03	07:3 6
Mr.Frank Joseph	3600 28	2nd	09:3 5	09:5 7	10:15	10: 20	10: 52	12: 04	NA	10: 15	13:0 0	03:25	13: 00	13:00	15:15	05:4 0
Mr.Satish Garg	3600 23	2nd	09:3 2	09:4 3	10:15	10: 30	12: 43	12: 30	10: 45	11: 30	13:3 0	03:58	13: 30	13:40	17:05	07:3 3
Mr.Ramesh Chandra	3600 31	2nd	09:4 0	10:0 0	10:15	10: 08	11: 27	13: 00	11: 37	12: 00	14:0 0	04:20	14: 00	14:10	16:07	06:2 7
Mr.Sabina kumar	3601 16	2nd	09:1 0	09:1 4	09:40	09: 33	11: 40	11: 50	10: 03	10: 50	12:5 0	03:40	12: 50	13:00	15:37	06:2 7
Mr.Pawan kumar	3601 17	2nd	09:1 5	09:1 5	09:40	09: 25	11: 42	11: 50	10: 13	10: 50	12:5 2	03:37	12: 52	13:00	15:20	06:0 5
Mr.Anil kumar goel	1161 47	2nd	10:2 7	10:3 0	10:50	10: 36	14: 55	13: 00	11: 45	12: 00	13:0 0	02:33	13: 00	13:00	17:23	06:5 6

Mr. Aravind Sahni	6627	2nd	08:28	08:30	09:05	08:52	09:25	10:05	11:05	11:30	13:30	05:02	13:30	13:45	16:15	07:47
Mr.Vivek Agarwal	324690	2nd	08:18	08:20	08:35	07:07	11:04	11:30	09:00	09:35	11:35	03:17	11:35	12:20	14:06	05:48
Mr.Jaya Agarwal	360105	2nd	08:18	08:20	08:35	09:03	11:05	11:35	09:12	09:35	11:35	03:17	11:35	12:20	14:06	05:48
Mrs.Seema Sahni	360110	2nd	08:28	08:30	08:35	08:55	09:49	10:25	10:50	11:30	13:30	05:02	13:30	13:45	15:41	07:13
Mr.Deepak Kumar	345277	2nd	10:14	10:15	10:50	10:32	13:20	NA	11:55	12:20	14:00	03:46	14:00	15:20	17:23	07:09

