Summer Training at
Indraprastha Apollo Hospitals
New Delhi.
(April 7th 2012 - June 6th 2012)

By
Neha Arora

Under the guidance of
Dr. Neetu Purohit

Post Graduate Diploma in Hospital and Health Management
2011-2013

Institute of Health Management Research,
Jaipur
2012

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Certificate

This is to certify that Dr. Neha Arora from Institute of Health Management Research, Jaipur has undergone Summer Training at Indraprastha Apollo Hospitals, New Delhi from 6th April, 2012 to 5th June, 2012.

The candidate herself carried out the project. Her approach to the study has been sincere, scientific and analytical. This summer training is partial fulfillment of the course requirement is recommended for the award of post graduate diploma in health and hospital management.

I wish her success in all her future endeavors.

Dr P. R. Sodhani
Dean Academics and Student Affairs
IHMR, Jaipur

Dr. Neetu Purohit (Mentor)
Assistant Professor
IHMR, Jaipur

Indraprastha Medical Corporation Limited

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Date: 05.06.2012

Summer Internship Completion Certificate

This is to certify that Dr. Neha Arora, student of Institute of Health Management Research, (IIHMR) Jaipur has successfully completed her Summer Internship Program, which is a part of her course curriculum in PGDHM Program, from April 06, 2012 to June 5, 2012, at our Hospital.

During this period she has completed the following projects:

- Cost & Quantity wise categorization of Surgical consumables used in Coronary Artery bypass Graft Surgery
- Net Promoter Score
- Marketing Survey of different strategies

We wish success in all her future endeavors.

for **Indraprastha Medical Corporation Limited**
(Indraprastha Apollo Hospitals)

Anupam Srivastava

Anupam Srivastava
Dy. Manager – HR

Note: Contents of above mentioned studies are confidential in nature and not for public domain.

ISO 14001 : 2004

Certificate

This is to certify that Ms. Neha Arora from Institute of Health Management Research, Jaipur has undergone Summer Training at Fortis Escorts Hospital, Jaipur from 7th April, 2012 to 6st June, 2012.

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Dr. Neetu Purohit
Associate Professor
IHMR, Jaipur

Dr. P.R. Sodani
Dean (Academic and Students Affairs)
IHMR, Jaipur

ACKNOWLEDGEMENT

I would like to express my gratitude towards my mentor Dr. Neetu Purohit who guided me about the key areas of focus in my summer internship.

This report would not have been possible without the immense guidance and support of U.B uberoi (Head of Quality department), Indraprastha Apollo Hospitals, New Delhi.

I would also like to take this opportunity to thank Mrs Preetindira(Deputy manager) and Dr. Pawan kumar Gupta (Deputy manager) Quality department who gave his valuable inputs at every step and steered me through to complete this study.

Dr. Neha Arora

TABLE OF CONTENTS :

ABBREVIATIONS:

- CABG – Coronary Artery Bypass Graft Surgery
- IPD – Inpatient Department
- OPD – Outpatient Department
- NPS – Net Promoter Score
- 2T1 – 2nd Floor Tower 1
- 2T2 – 2nd Floor Tower 2
- 2nd Extension – 2nd Floor extension
- 3T1 – 3rd Floor Tower 1
- 3T2 – 3rd Floor Tower 2
- 4T1 – 4th Floor Tower 1
- 4T2 – 4th Floor Tower 2
- 5T1 – 5th Floor Tower 1
- 5 T2 – 5th Floor Tower 2
- 6 T1 – 6th Floor Tower 1
- 6 T2 – 6th Floor Tower

Part 1 : INTRODUCTION

AIM OF THE STUDY:

To study the administrative and the managerial functions of the Indraprastha Apollo hospital by observing various departments of the hospital

OBJECTIVES:

- To survey the hospital, its various departments to gather maximum information about their functioning.
- To get acquainted with the hospital functioning by providing assistance in the daily operational management activities of the respective department.

METHOD OF DATA COLLECTION:

Both Quantitative as well as qualitative data was collected for study of hospital functioning.

METHODS:

- Observational studies using informal discussion were conducted.
- Secondary data collection by reviewing the past documents.

APOLLO GROUP PROFILE

MISSION STATEMENT

"Our mission is to bring healthcare of international standards within the reach of every individual. We are committed to the achievement and maintenance of excellence in education, research and healthcare for the benefit of humanity"

Dr. Pratap C Reddy

Founder chairman

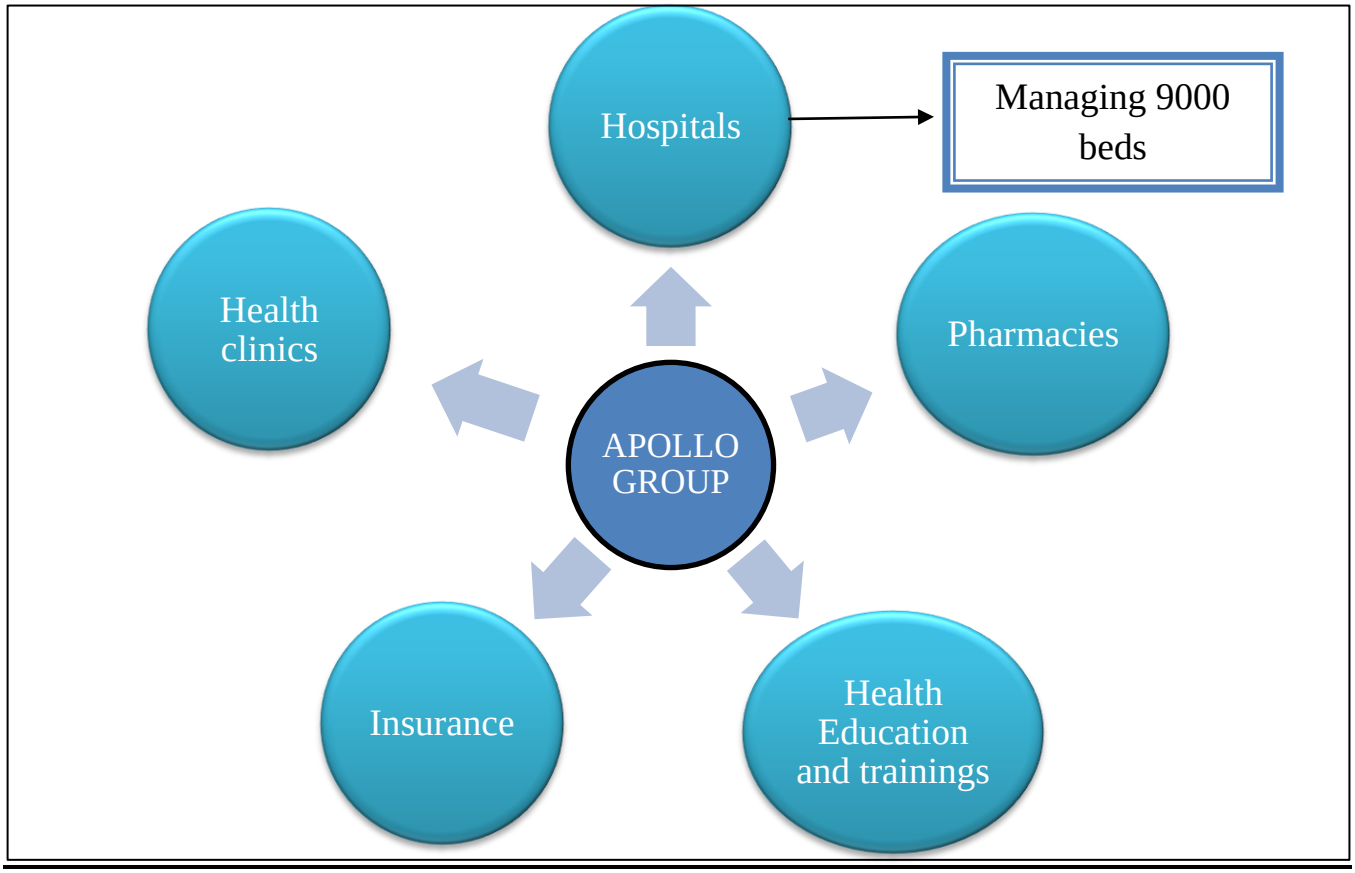
Apollo hospitals group

THE HISTORY OF APOLLO GROUP

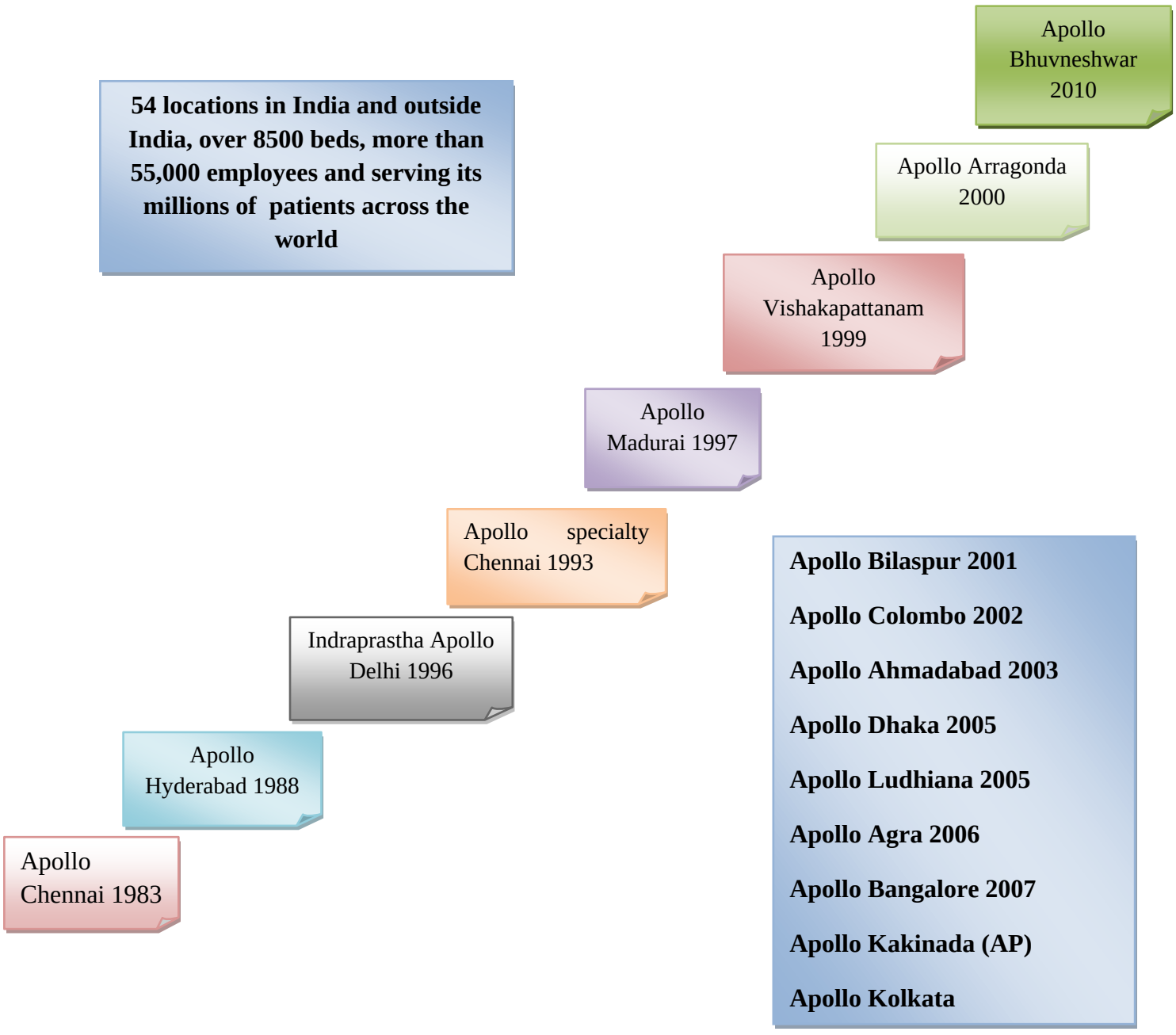
- The Apollo hospitals group was started by Dr. Pratap C. Reddy in 1979.
- The group started its first hospital in Chennai in 1983 with initial bed strength of 150.
- With over 53 managed and owned hospitals, the bed strength today stands at over 9000 and Apollo today is **Asia's largest healthcare Corporate Group.**
- Apollo believes in four pillars of philosophy - experience, excellence, expertise and research.

The largest achievement of the Apollo Group has been to take quality health care across and outside India, of touching millions of lives and giving hope to an entire segment of the Indian population who did not have an option beyond limited medical infrastructure

APOLLO GROUP



THE JOURNEY OF APOLLO HOSPITALS



HOSPITAL PROFILE

Indraprastha Apollo Hospital, A JCI Accreditated Hospital, situated on Delhi-Mathura road, is one of India's most comprehensive diversified and multi-specialist health care institutions which caters to health care requirements of a large number of people of Delhi.

Personal commitment, care, technical knowledge and expertise along with a clean understanding how to effectively utilize technology, to help people and solve their health problems, are among the major strengths of the hospital.

Indraprastha Apollo Hospitals Limited is a 695-bedded multi – specialty tertiary care hospital, with the provision for expansion to 1000 beds in future. A joint venture between the Apollo Hospitals Group and the Government of Delhi, it was founded in 1996. The hospital is equipped with the latest technology and high end medical equipments such as 64 slice CT scan, 3 Tesla MRI, Spect/CT and Hyper baric chamber, Gamma Camera, X-knife and Linear accelerator.

The Hospital is spread over 12 acres of land and has a built-up area of over 600,000 square feet with 2 basement, besides ground plus five floors, with eight elevators and a separate engineering service floor.

Hospital provides Blood Bank services, 24 Hours Accidents & Emergency Services, 24 Hours Ambulance Facility, Operation Theatres for Advance Surgery, Physiotherapy, Cardiology, Clinical Laboratory, Dialysis Unit service, Ultrasound service, Whole body CT scan service, Holter service etc. Indraprastha Apollo Hospitals is also on the panel of CGHS, DGEHS, Haryana Govt, Sikkim Govt, ONGC, BHEL, Oil India, Indian Oil Corporation etc.

Hospital consists of a 6 floor building and is divided into different towers. Different departments and units are present on these towers which are divided accordingly, like, all laboratory services are present on the ground floor and in-patient wards and rooms are present on all the floors except 1st floor which is having all ICUs and OTs. OPD, govt. ICU, govt. wards and several other departments are present on tower3. Hospital also has a family welfare department which encourages family planning in the community.

Centres of Excellence

- Heart Institute
- Cancer Institute
- Institute of Neurosciences
- Institute of Orthopaedics
- Institute of Gastrosciences
- Transplant Institute
- Emergency
- Nephrology and Urology
- Spine Surgery
- Institute of Preventive Medicine
- Critical Care

APOLLO'S CORPORATE CULTURE

Tender, loving, care (TLC)

T: Team spirit, Total care

L: Loving, leadership & Loyalty to organization

C: Continuous Quality Improvement, Corporate culture, Care & Concern

Medical Structure

- Coordinators
- Sr. Consultants
- Consultants
- Emeritus consultants
- Visiting Consultants

- DNB students
- Residents, Sr. Residents
- Registrar, Sr. Registrars
- Research fellow, Fellows
- Junior consultants
- Associate consultants

Committees at Apollo

1. Accreditation committee
2. Ethical committee
3. Infection control committee
4. OT users committee
5. Clinical audit committee
6. Appraisal committee
7. Transplant Authorisation committee
8. DNB committee
9. CME committee
10. Drug committee
11. Safety committee
12. Code blue committee
13. Training committee

CODES:

There are some codes followed at Apollo which signify an important event. These codes are announced on a Public Announcement System in the entire hospital. The codes are as follows:

CODE BLUE	Individual disaster
CODE GREY	Internal disaster
CODE RED	External disaster
CODE PINK	Infant abduction/baby missing
CODE PURPLE	Likelihood of physical alteration

CODE ORANGE	Indication of deterioration in patient condition
CODE BLACK	Bomb threat

The basic purpose of these codes is to avoid panic and at the same time convey the important information toi the hospital staff.

Code Blue:

"Code Blue" is an emergency mode of alerting all medical , nursing , paramedical and alive healthcare services personnel for CPR following emergencies causing sudden collapse of patients, Such as myocardial Infarction, Neurosurgical emergencies, Multiple Trauma Cases.

Code Blue Team:

- Medicine Registrar
- Anesthesia Registrar
- Surgical Registrar
- Nurse Manager
- Staff Nurse

Code Red:

An external disaster is any catastrophe causing injury or illness simultaneously to at least 30 people who are requiring hospital emergency treatment. These include the disasters occurring outside the hospital premises requiring intervention by the hospital example; earthquake, accident and warfare.

- All doctors available must reach emergency triage.
- Preliminary examination and sorting of the patients is to be done in the triage by the emergency medical officer.
- Brief documentations of all the patients should be done.
- First aid should be given to all, with priority to seriously injure.
- Specialty wise referrals are to be made where necessary.
  Patient Identifiers:

- Use at least two patient identifiers (room number is not included) whenever taking samples, administering medication or blood samples.
- Inpatient: Patient Name and UHID no.
- Outpatient: Patient name and DOB.
- Emergency admin with no. ID: Unknown 1/2/3 with UHID #

COLOR CODE IN TRIAGE

There is also color code being followed in the emergency department. It is as follows:

Red: Most Urgent

Yellow: Urgent

Green: Non-Urgent

Black: Dead

TELEMEDICINE AT APOLLO

After treatment at Apollo hospital Delhi, patients can continue to consult the doctors through the telemedicine facility. Indraprastha Apollo hospitals also reach out to remote areas through telemedicine so that rural hospitals and medical centres can disperse correct and advanced medical care to patients who have no access to advanced healthcare.

MEDICAL TOURISM IN APOLLO

India profile offers medical tourism in India, in association with the Indraprastha Apollo hospitals. All the travel arrangement to the various Apollo hospitals in India is taken care of. Flight and accommodation arrangements and other travelling needs are also taken care of by the hospital. From the moment the patient arrives to the moment of departure, it is assured that the patient is in safe hands.

HOSPITAL MANUALS

Green book: Infection control Manual

Red book: Safety Manual

Blue book: ICU manual

Yellow book: Radiation safety manual

For JMS: The Hospital Manual

FIRE SAFETY:

R.A.C.E.

- **Rescue:** Rescue the patients or any person if in immediate danger.
- **Alarm:** Raise alarm.
- **Confine:** Close door and windows to keep the fire contained.
- **Extinguishment/ Evacuation:** Use extinguisher if trained in its use.

GENERAL FIDINGS

CLINICAL SERVICES

OPD DEPARTMENT

Apollo has got 7 centralized OPD wings:

Functions:

Offers a complete facility of health care to the individuals of all ages in accordance with hospital policy.

The scope and complexity of services:

- The medical consultancy and paramedical facilities of different specialties are provided to patients.
- The department acts as an intermediately to admission and interfacing with different department in the hospital.

Quality Indicators:

- Patient seen within scheduled appointment time.
- Turn over time between two patients.
- Patient satisfaction.

Shortcomings observed:

- Poor maintenance of traffic flow of patients.
- High waiting time after patient arrival.

EMERGENCY DEPARTMENT

The EMR department at Apollo is located on the ground floor, facing the main road and has a separate entrance. It has a waiting lounge at its entrance and EMR reception. It has 10 beds.

EMR department is divided into two divisions:

1. Observational: It has 5 beds. Here minute and less severe cases are taken care of; these cases do not require admission and can be discharged within a few hours.

2. Triage: It has 5 beds. Here severe cases are taken care of. This area is well equipped with all kinds of equipments to perform even a minor surgery.

   EMR is provided with its own drugs and stores.

   Staffing:
   EMR Department has;
   1. 1 HOD
   2. 5 CMO's
      Patient to nurse ratio is 1:1 at any time.
      The bed charges in EMR are Rs 800 per hr.

DIALYSIS

The Dialysis department was located in the gate no. 4 at ground floor.

Function:

- To provide life saving Dialysis to the patients suffering from Renal Disorders through the expertise of doctors, technicians, nurses and utilization of technology.

The Dialysis Department has 16 beds. There are also 2 beds in HDU for inpatients.

It has:

- Two special Rooms
- Two isolation rooms for hepatitis/ HIV patients

  Duration of Dialysis: 4hours

  Timings:

  7:00 hours to 11:00 hours

  12:00 Hours to 16:00 hours

  17:00 hours to 21:00 hours

  22:00 hours to 2:00 hours

  Thirty minutes are dedicated to washing and cleaning of equipments.

Price Per Dialysis: Rs.3200

Staffing:

- 1 doctor per shift in three shifts per day.
- 3-4 housekeeping staff in each shift.
- 4 technicians in each shift
- 3 nurses in each shift

Major Equipments Used

- 16 Haemodialysis machines
- Monitors
- Infusion sets
- Reverse Osmosis Water system

OPERATION THEATRE

Apollo hospital has 16 OT's distributed in three locations namely OT complex1,OT complex 2 on the first floor and ortho OT complex located on the ground floor next to EMR.

Functions

OT is committed to provide the highest standards of surgical care to the patients

Scope and complexity of services

- Cardiac
- Neuro
- Opthal
- ENT
- Gynae
- Plastic
- Ortho
- Micro disc
- Laproscopies
- Transplant
- Oncological and other general surgeries

Days and hours of operations:

The OT department is functional from 8:00 hrs to 20:00 hrs six days a week and EMR cases are taken on Sunday.

Quality indicators

- Cases load/ month
- Needle stick injuries
- Same day cancellation/100surgeries
- Unplanned returns to OT/100 surgeries
- Number of recovery room delays/100 surgeries

INTENSIVE CARE UNIT

An intensive care unit is a specialty staffed and equipped separate and self contained section of the hospital for the management of patients with life threatening or potentially life threatening clinical conditions.

Apollo has the following ICUs

- Surgical
- Medical
- Neuro
- Peadiatric
- Stroke
- Coronary Care Unit
- Gastro and liver
- Organ transplant
- Neonatal ICU etc.

  It has over 100 ICU beds in total.

SUPPORT SERVICES

RADIOLOGY DEPARTMENT

Administrative Functions:

- Provides complete diagnostic and imaging services of high quality and minimum error
- Has established goals, objectives and standards of performance that is consistent with both the hospitals philosophy of patient care and practice of professional service delivery and match international standards
- Has developed standard operating procedures (SOP)
- Has developed and supported a professional environment which allows each employee to do their best work, feel personally satisfied and reach his and her full potential
- Has system to get regular customer feedback

Services provided:

The radiology department provides large variety of services

1. Common X-rays
2. Fluoroscopy
3. Ultrasound
4. Colour Doppler
5. Fatal medicine unit
6. CT unit
7. CT single slice
8. CT 64 slice
9. MRI 3 tesla
10. Ultrasound and CT guided invasive procedures
11. Nuclear medicine

The equipments:

1. X-ray machine : 4- portable, 2- departmental, 1- Fluoroscopy, 1- MHC
2. Mammography : 1- departmental
3. Ultrasound: 4 – department, 1- portable, 1- MHC,1- fetal medicine

4. CT single slice : 1- departmental
5. CT 64 slice : 1 Departmental
6. MRI 3 TESLA: 1 departmental

Quality Indicators

- Regular review of randomly selected patients
- Daily system check (CT/MRI)
- Daily helium check (MRI)
- Maintenance and calibration scheduled
- Records regarding breakdown and action taken

BLOOD BANK

Goal of the department:

1. To have sufficient blood of all types to support an EMERGENCY, IPD, OPD and OT
2. To maintain highest level of standards in all products and activities following GLP (Good laboratory practices) and GMP (Good Manufacturing Practices)
3. To upgrade Aphaeresis technology and maintain its continuous supply
4. To create ready accessible records of in house eligible donors according to their blood group

Scope and Complexity of services:

- The Department is involved in providing safe blood/blood components to the hospital
- To ensure the safety of blood by following stringent rules
- Storage and distribution of blood
- Department has well established immunohematology laboratory for screening, compatibility testing
- Department provides consultation for all transfusion related requirements of patients

Days and Hours of Operation:

24 hours working 365 days a year

Quality indicators

- Platelet counts is sent to Haematology lab for verification
- Fixed SOP for every procedure
- Equipment calibration
- Chart maintained for temperature monitoring

MEDICAL RECORDS DEPARTMENT

Goal of the department

To provide efficient storing, maintaining, coding and verification of medical records

Services provided:

- Storing of all the medical records
- Verification of all the records
- Issue of duplicate records
- Receipts and reply of mails
- Preparation and coordination in providing records for court cases and consumer cases
- Maintenance of MTP records
- Maintenance of MLC, birth and death registers
- Coordinating in completion of insurance claims
- Coordinating in completion of insurance claims/certificates
- Census preparation
- Coordination with IT department for backup of scanned records
- Attending court cases
- Coding and indexing of disease as per international classification of diseases

Quality indicators

File completion at MRD after discharge of patients- 99.4%

Accuracy of coding -100%

UTILITY SERVICES

CENTRAL STERILE SUPPLY DEPARTMENT

Function:

Provides steady and effective supply of sterile linen and instruments of various departments in the hospital

Services provided:

The department sterilizes linen and blunt instruments using :

1. Autoclave
2. 36 SR
3. Micro star
4. High speed
5. ETO machine

Days and hours of operations of the department

- 8:00am to 2:00 pm all days of the week
- TSSU functional 24hrs
- Sterile suppliers are dispatched twice a week a day to the wards and according to the requirement and used instruments are collected for cleaning and autoclaving by CSSD staff
- Sterile supply is supplied to the OT and emergency a day prior before 8pm and as and when required
- CSSD and TSSU supplies sterile linen, autoclave instruments to OT complex 1 and 2

BIOMEDICAL ENGINEERING DEPARTMENT

There are more than 200 equipments in Apollo. For maintenance and technical evaluation of equipments at Apollo no annual medical contracts (ANC) or comprehensive medical contracts are maintained. Apollo has its own biomedical engineering department which provided comprehensive, cost effective

and effective services. The maintenance round is done every 6months for whole hospital. It checks and orders for equipments and other supplies

HOSPITAL INFORMATION SYSTEM

For maintaining vast pool of information and database, Apollo has its own HMIS for proper efficient services and maintenance of records. The entire hospital is divided into Front Desk Operations (FDO) and Back Desk Operations (BDO).

The FDO deals with direct patients care activities while BDO provides support to these care activities. FDO comprises of In-Patient management module and Out Patient management module.

FOOD AND DIETARY SERVICES

The food and dietary services of IPD patients as well as the staff is managed by food and beverages department. This department is divided into 4 sub departments:

- Food Production
- Patient Food Services
- Non Patient Food Services
- Kitchen Steward

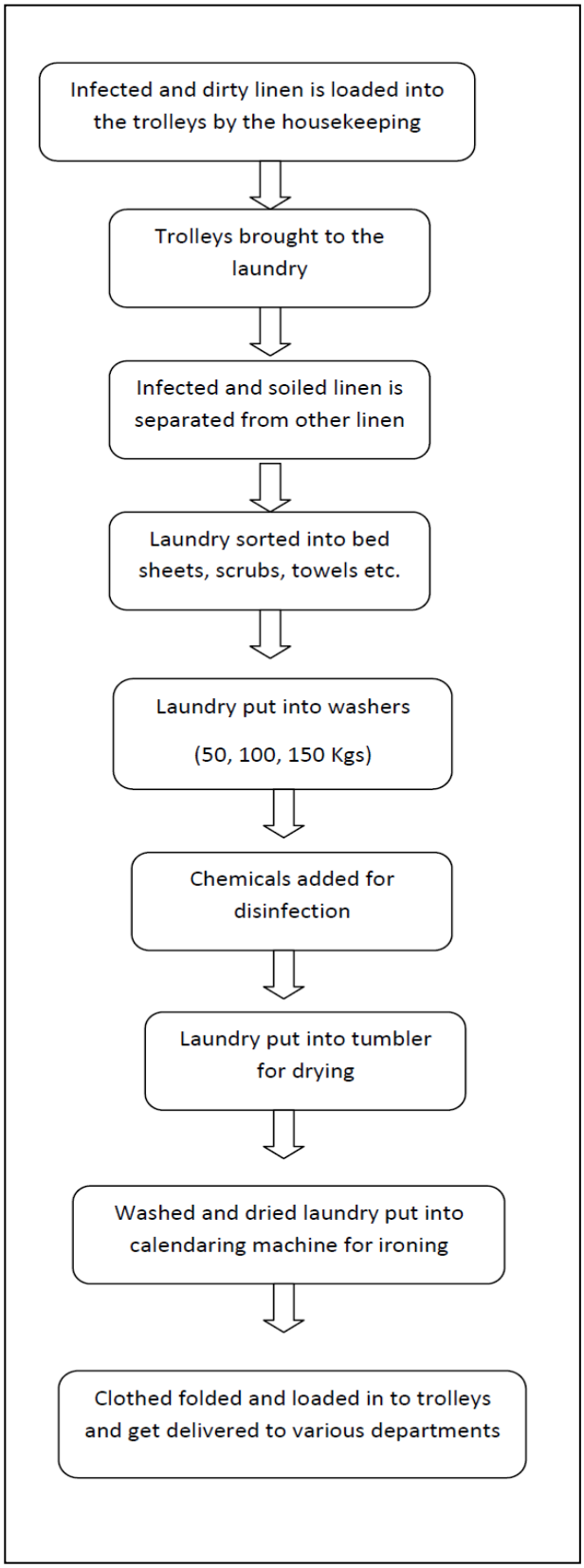
The department proficiently delivers to more than 4000 meals daily. To provide efficiently timely and hygienic environment department has a team which includes:

- Deputy In charge
- Assistant Manager
- Executive
- Chief (Operation In Charge)
- Administrative Officer

LAUNDRY

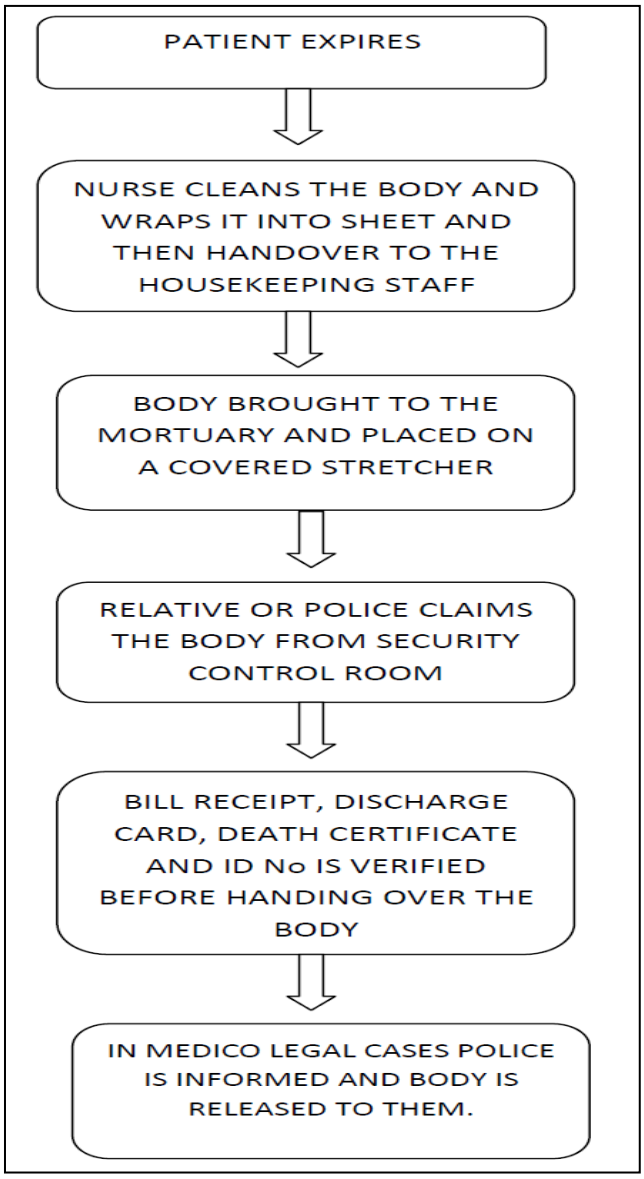
Laundry service is one of the most important departments which provide fresh linen to the whole hospital. It has a major role in maintaining hygiene environment and role in infection control. The staffs of laundry department are a mix of contract labour and IMCL workers. The process flow as follows:

Flow chart of Laundry Department Functioning



MORTUARY

Mortuary is a place where dead bodies are kept before they are claimed by the relative of the patients or handed over to the police in the medico legal cases. It is located into the basement with a capacity of keeping 6 dead bodies at a given time. The security guards posted at the nearby control room are responsible for releasing the body to the concerned person. No autopsy is performed in the hospital.



ADMINISTRATIVE SERVICES

MEDICAL SUPERINTENDANT OFFICE

Medical superintendant comes next to the Director Medical Services in hospital Administration hierarchy and has the responsibility of managing hospital medical operations and clinical team. MS is head of all bodies managing patient and medical staff.

Team and departments managed by MS office are as following:

- Emergencies
- Clinical care coordinators
- Medical operations
- Junior medical staff
- Paramedical staff
- Legal issues

For proper management and smooth functioning of these departments and managing bodies, there are twelve employees appointed in MS office who work as per MS orders.

Junior Medical Staff

Junior medical staff reports to the MS for administrative purposes and MS takes care of:

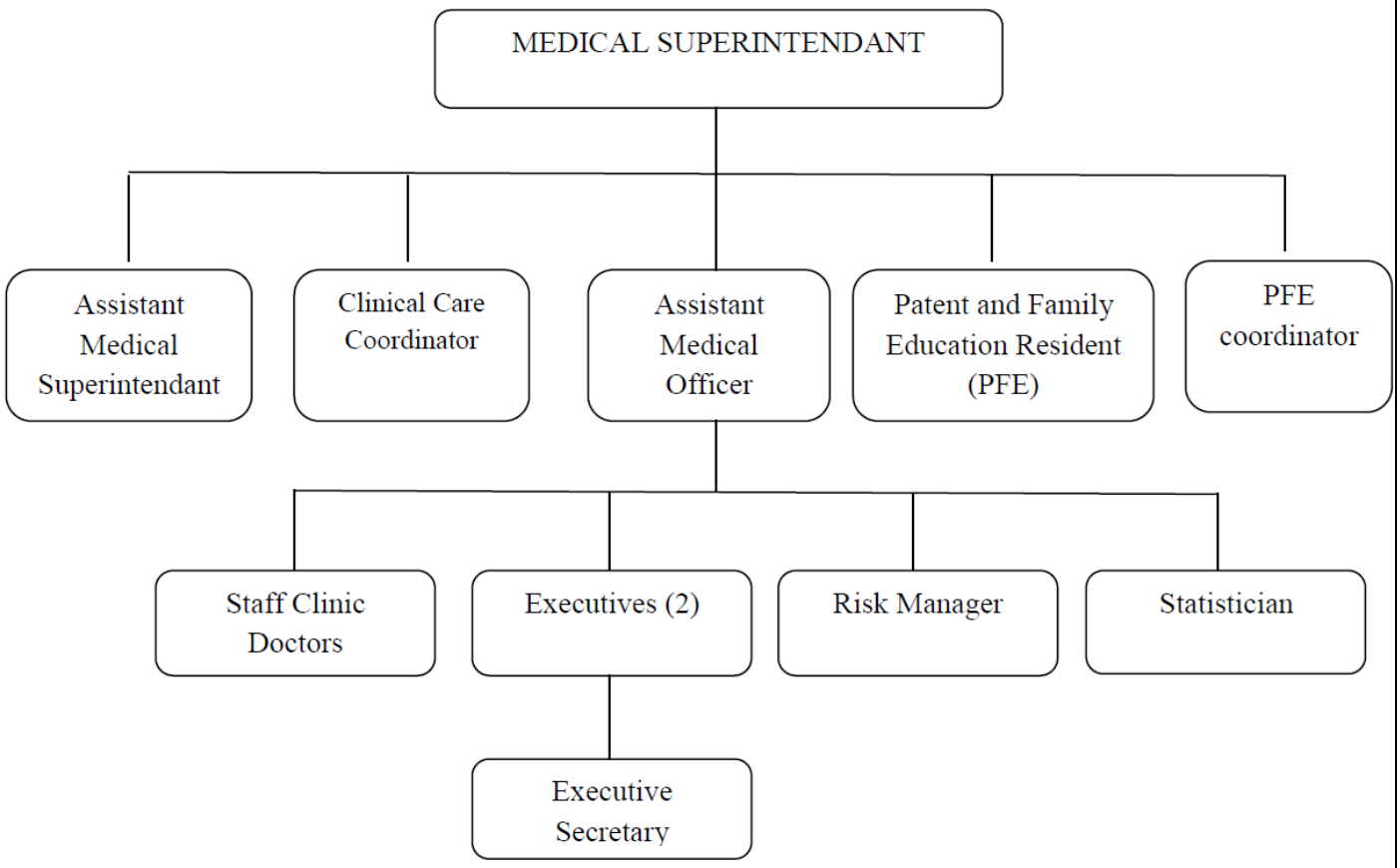
1. Recruitment and maintaining of JMS records
2. Orientation of JMS, done by providing induction classes
3. Training: as Apollo is JCI Accredited there is continuous training of JMS
4. Managing JMS work schedule

Other than senior consultants, all other medical staff is managed by the MS.

- Junior medical staff comprises of:
- Associate consultant
- Senior resident
- Junior consultants
- Residents
- Fellows
- Research fellows

- Senior consultant
- Emergency Medical Officer
- Registrars
- Intensivists
- Clinical Care Coordinators

Organogram of MS Office:

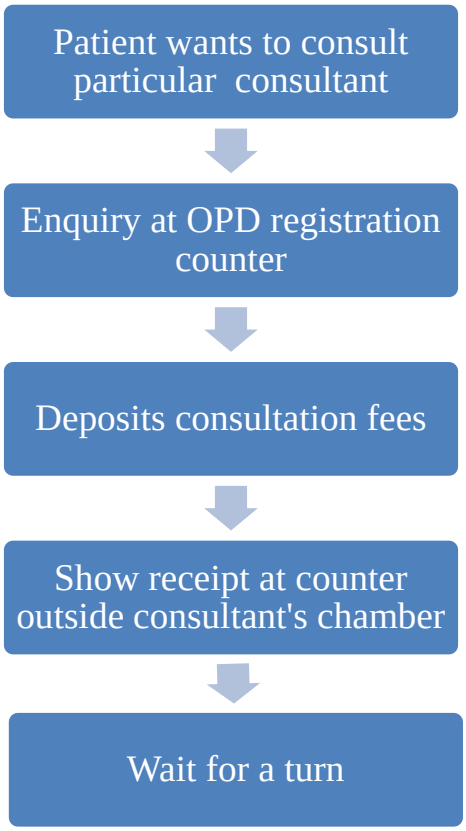


FINANCE DEPARTMENT

The main activities carried out by the finance department are:

- I.P.D Billing
- O.P.D. Billing
- Recovery of bill of insured patients
- Recovery of bill from patients who have not paid

O.P.D. Billing



I.P.D. Billing:

The billing procedure is carried out at I.P.D. billing desk and filed in each patient's file. At the end of the treatment, the bill has to be settled and only on producing of the receipt slip, the patient can be discharged from the hospital.

RECOVERY OF UNPAID BILLS:

Sometimes the patient is unable to pay the bill in time. These patients sign an undertaking stating the time by which they will level the bills. Such patients are followed up through reminders telephonically.

MATERIALS MANAGEMENT DEPARTMENT

Involves activities that control the transmission of physical through the value chain:

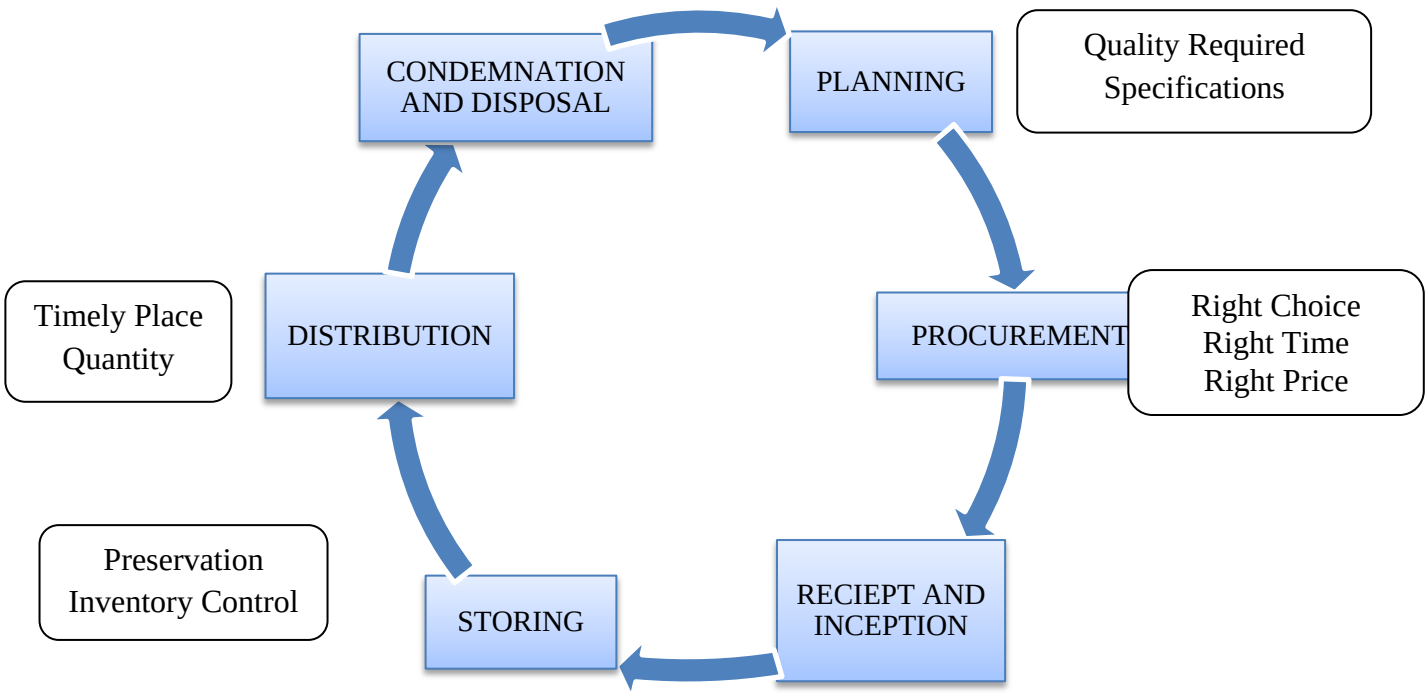
PROCUREMENT ⟶ PRODUCTION ⟶ DISTRIBUTION

Core Activities of the materials department:

It involves planning, review and control of:

- Demand Forecasting
- Procurement
- Budgeting and materials planning
- Receipt and inception
- Storage
- Inventory Control
- Issuing and Distribution
- Consumption
- Maintenance
- Condemnation and Disposal
- Pilferage

MATERIALS CYCLE:

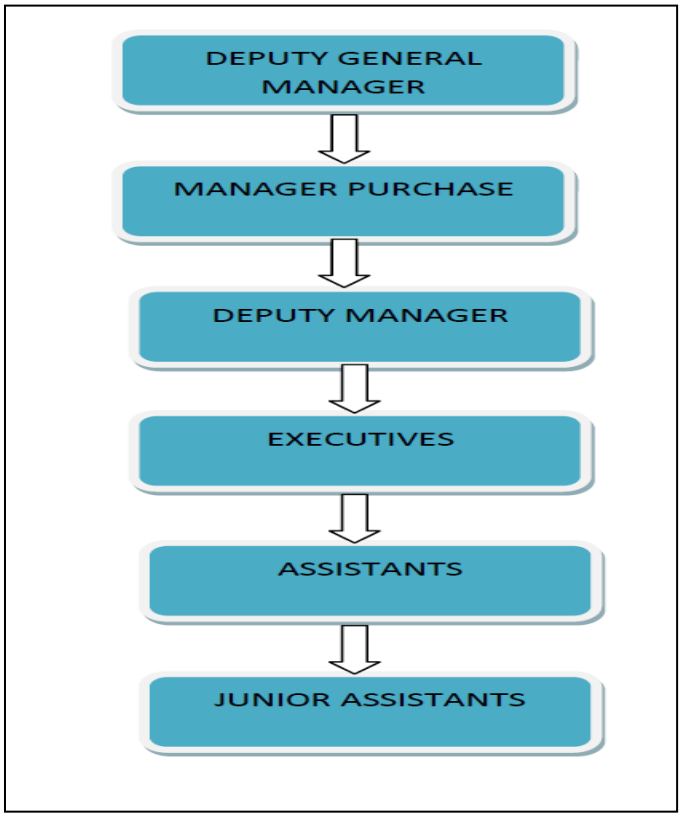


TYPES OF STORES IN THE HOSPITAL:

1. Main Store:
    a. Printing and stationary store
    b. Housekeeping Store
2. Food And Beverages
3. Engineering
4. Cath-Lab
5. OT
6. Central Records
7. Nephrology

The materials department reports to MD. It has 33 staff employees.

Hierarchy of the material department



MARKETING DEPARTMENT

Indraprastha Apollo hospitals run many promotional activities to market its services and aim to cover larger segments under various plans.

Apollo has developed strategies to target several markets inside as well as outside India :

- Delhi and NCR
- Rajasthan
- Uttar Pradesh
- Madhya Pradesh
- Haryana
- Punjab
- Uttaranchal
- Himachal Pradesh

- Jammu and Kashmir

Outside India :

- Afghanistan
- Uzbekistan
- Many countries of south Africa
- Russia
- Pakistan
- Mauritius

HUMAN RESOURCE DEPARTMEN

Functions of the HRD are:

1. RECRUITMENT AND SELECTION:

As the turnover rate for nurses and junior medical staff is very high at Apollo, the recruitment and selection is a continuous process. Walk –in interviews are conducted for the nurses every Thursday and Saturday. The interview is conducted by the HR Representative and HOD of the concerned Department. Similarly, the junior Medical Staff is recruited by the MS.

Establishment Office- JCI places emphasis on Staff Qualification. Thus the personal files are maintained in this section with qualification papers of all the staff.

2. CONTRACT LABOUR

Apollo outsources some of its services, namely:

- Housekeeping
- Security
- Food and Beverages
- Laundry
- Transport

This section of the HRD looks after the working, payment and grievances of these contract Laborers.

3. TIME OFFICE

This section issues identity cards to the member of the hospital

4. TRAINING AND DEVELOPMENT CELL

JCI emphasizes a continuous development of the staff, thus training is an ongoing process at Apollo. Apart from Training, this cell is also involved in other HR Activities, namely:

- VOICE OF THE EMPLOYEE : Conducted monthly, this survey studies the satisfaction levels of the employees
- REWARD AND RECOGNITION: At every Department are placed the WOW cards. These can be filled by any patient who feels that any of the member of the Apollo Staff has done their job extremely well to help the patient
- INDUCTION: As mentioned earlier, recruitment is a continuous process. Each Wednesday, an induction program is conducted by the cell. The newly joined employees are oriented to the Apollo group, HR policies, and fire safety plan for Apollo, the infection control program, functioning of the blood bank.

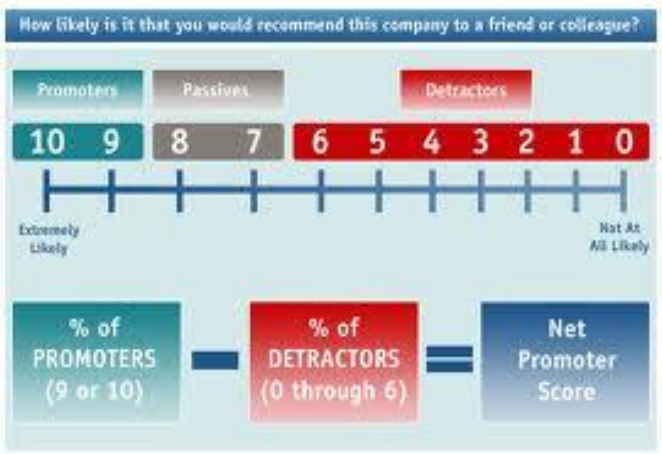
PROJECT – 1

Projecting Hospital Promotion On The Basis Of Patient's perception : A Case Study In Apollo Hospital

Executive Summary

"Net Promoter Score" is a customer loyalty metric developed by (and a registered trademark of) Fred Reichheld, Bain & Company, and Satmetrix .A 'Net Promoter Score' (NPS) is an indicator of customer satisfaction demonstrating what percentage of your customers are 'promoters' (who would actively promote you to their friends or colleagues), and what percentage are 'detractors'.

Net Promoter Score can be calculated through a customer satisfaction survey as part of your Voice of the Customer program



NPS can be as low as −100 (everybody is a detractor) or as high as +100 (everybody is a promoter). An NPS that is positive (i.e., higher than zero) is felt to be good, and an NPS of +50 is excellent. Companies are encouraged to follow this question with an open-ended request for elaboration, soliciting the reasons for a customer's rating of that company or product. These reasons can then be provided to front-line employees and management teams for follow-up action.

Thus, Net Promoter approach can be used to motivate an organization to become more focused on improving products and services for customers it's a very useful metric which can help organization focus on operational processes that maximize promoters and minimize detractors

1. INTRODUCTION

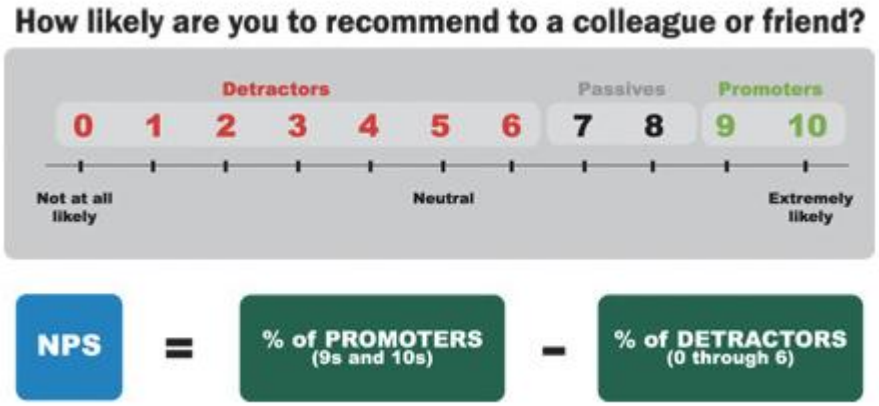
Net Promoter is a customer loyalty metric introduced in 2003 Harvard Business Review article "One Number You Need to Grow".

The most important proposed benefits of this method derive from simplifying and communicating the objective of creating more "Promoters" and fewer "Detractors" — a concept claimed to be far simpler for employees to understand and act on than more complicated, obscure or hard-to-understand satisfaction metrics or indices.

The only path to profitable growth may lie in a company's ability to get its loyal customers to become .in effect its marketing department .These people who would recommend the company are its promoters who would keep their reputation in risk while recommending it to other people where as those who would disengage from spreading the good word around but by being critical of the company /its services or products is known as a detractor. Recommendation is one of the best indicators of loyalty because of the customer's sacrifice.

In addition, proponents claim the Net Promoter method can reduce the complexity of implementation and analysis frequently associated with measures of customer satisfaction, providing a stable measure of business performance that can be compared across business units and even across industries, and increasing interpretability of changes in customer satisfaction trends over time.

Proponents of the Net Promoter approach claim the score can be used to motivate an organization to become more focused on improving products and services for customers. company's Net Promoter Score correlates with revenue growth as well.



2. REVIEW OF LITERATURE:

Net Promoter is a customer loyalty metric developed by (and a registered trademark of) Fred Reichheld, Bain & Company, and Satmetrix. It was introduced by Reichheld in his 2003 *Harvard Business Review* article "One Number You Need to Grow". The most important proposed benefits of this method derive from simplifying and communicating the objective of creating more "Promoters" and fewer "Detractors" — a concept claimed to be far simpler for employees to understand and act on than more complicated, obscure or hard-to-understand satisfaction metrics or indices. In addition, proponents claim the Net Promoter method can reduce the complexity of implementation and analysis frequently associated with measures of customer satisfaction, providing a stable measure of business performance that can be compared across business units and even across industries, and increasing interpretability of changes in customer satisfaction trends over time.

The NPS method is revolutionary, because it comes from a single customer question that is then analyzed in a very specific manner. It helps in establishing the following:

- Comparing different facilities given to patient against each other in terms of customer referrals. This provides a unique perspective on which companies are taking care of their customers and which ones are letting them down.

- Second, because of the link between NPS and business growth, the NPS data also gives a solid predictor of future growth

3. OBJECTIVES:

1. To find out the satisfaction level of patients with services provided by Indraprastha Apollo hospitals, New Delhi
2. To predict the hospital promotion on the basis of patient's recommendation

4. PROJECT METHODOLOGY:

A cross sectional study was carried out in inpatient wards of Indraprastha Apollo Hospital ,Delhi which is a 650+ bedded hospital. It has got inpatient wards on 2^{nd} ,3^{rd} ,4^{th},5^{th},and 6^{th} floors of the hospital. The 2^{nd} and the 3^{rd} floor are general ward ,4^{th} floor is a mix of general and semi private ward and 5^{th} floor has semi private twin sharing rooms and 6^{th} floor has both twin sharing and suites for the patients .These patients are from all the specialities of the hospital including medicine ,oncology ,gynaecology and obstetrics, orthopaedics, transplant unit etc.It involves using a simple tracking survey to constantly get feedback from active customers. In the survey, 1007 face-to-face interviews were conducted to gauge

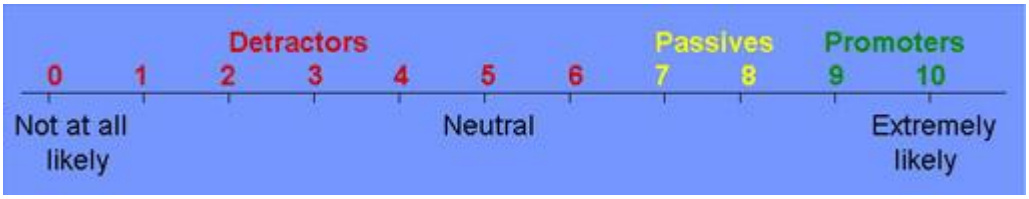
customer loyalty across a number of categories including In-patient admissions & inpatient admissions who have spent 24-48 hrs with the hospital.

The form had two questions:

1. How satisfied are you with your experience and the services provided by our hospital on a scale of 0-10

2. How likely would you recommend our hospital to your friends and dear ones, if necessary

Respondents are asked to respond using a 0 to 10 scale where 5 is neutral. An effective Net Promoter process is not simply based on asking customers a single question and ending the survey. It is important to understand why each respondent gave you the score they did. Understanding what needs to be improved (or specific actions taken) to raise your score to a 9 or 10 gives you actionable information which can be targeted for corrective action or process improvement. Understanding why a customer gave you a 9 or 10 helps you to better understand your core competencies. Our qualitative analysis of follow-up comments from Promoter, Passives, and Detractors is the key to increasing customer loyalty and profitable growth.



The NPS methodology is more than a score. Each score represents an opportunity. Each response is tied back to a specific individual. Examining the underlying reason behind the score and developing effective customer-centric solutions can convert the Passive customer into a Promoter and minimize Detractors.

The Net Promoter process involves four stages of implementation:

- **<u>Stage1: Identification of touch points</u>**
  Regardless of whether the surveys are to be transactional or relationship based, understanding the touch points and their impact on the "customer's experience" is the jumping off point for your NPS journey.

- **Stage 2: Developing your NPS infrastructure**
  There are several key actions required. Determine the type of survey you will deploy, Transactional vs. Relationship; sampling methods; and naturally the data collection method- Telephone or Online. Lastly it is important to identify the linkages between the survey questions, and your company's Key Performance Indicators.
- **Stage 3: Determining the Drivers of Customer Loyalty**
  The results of each study are evaluated and presented using a scorecard. Your scorecard quickly points you in the direction to take action. Each report includes a Net Promoter drive analysis. This analysis provides you with a clear understanding of what is influencing the behaviors and feelings of Detractors, Passives, and Promoters based on their individual customer experience. Post survey actions may include customer follow-up to clarify the feedback. Your customer care personnel will receive training on how to effectively engage customers after a survey to gain greater insight and strengthen the relationship with your customers.
- **Stage 4: Closing the Loop**
  Front Line, Middle Management, and Executive involvement is necessary to have a fully effective closed loop system. Front line personnel such as sales, customer service, and technical support personnel are trained in techniques on how to follow-up with respondents in order to improve the customer relationship. Frontline personnel play a key role in developing Promoters and neutralizing Detractors. Middle Managers receive training on internal and external benchmarking, performance coaching, and how to manage excellent customer experiences across all customer touch points. Managers are also given tools to help improve process level performance. Executive coaching is provided to help executives develop appropriate forms of recognition, communication, and strategy deployment.

Designing the survey :

The Net Promoter Score is obtained by asking customers a single question on a 0 to 10 rating scale, where 10 is "extremely likely" and 0 is "not at all likely": "How likely is it that you would recommend our company to a friend or colleague?"

Based on their responses, customers are categorized into one of three groups:

1. Promoters (9–10 rating),
2. Passives (7–8 rating),
3. and Detractors (0–6 rating).

The percentage of Detractors is then subtracted from the percentage of Promoters to obtain a Net Promoter score (NPS). NPS can be as low as -100 (everybody is a detractor) or as high as +100 (everybody is a promoter). An NPS that is positive (i.e., higher than zero) is felt to be good, and an NPS of +50 is excellent. Companies are encouraged to follow this question with an open-ended request for elaboration, soliciting the reasons for a customer's rating of that company or product. These reasons can then be provided to front-line employees and management teams for follow-up action.Local office branch managers at Charles Schwab Corporation, for example, call back customers to engage them in a discussion about the feedback they provided through the NPS survey process, solve problems, and learn more so they can coach account representatives.

Proponents of the Net Promoter approach claim the score can be used to motivate an organization to become more focused on improving products and services for customers. They further claim that a company's Net Promoter Score correlates with revenue growth. A revised Independent research confirms the fundamental claim of a relationship between relative competitive Net Promoter Scores and competitive growth rates.

NPS measures customer recommendation levels and, because of a proven link between this measure and increased customer demand, a high NPS is positively correlated to increased future growth. NPS is calculated by asking a sample of customers how likely they would be to recommend a brand to others.

5. CALCULATIONS:

NPS score is derived in three steps:

1. Divide all responses into three buckets: promoters, detractors, and others. Promoters are anyone who chose 9 or 10 on the "likely to recommend scale" and detractors are those who chose any number from 0-6.
2. Figure out the percentage of respondents that fall into the promoter and detractor buckets.

Subtract your detractor percentage from your promoter percentage. The result is your score. Thus**, NPS = P% - D%**

6. DATA RESULT & FINDINGS

Total Forms: 1000

Floor wise -Net Promoter Score, to find the areas which still needs improvement to increase the promoters and also the future growth of the hospital

Frequency Distribution of Promoters, fence sitters and detractors in different floors of the hospital

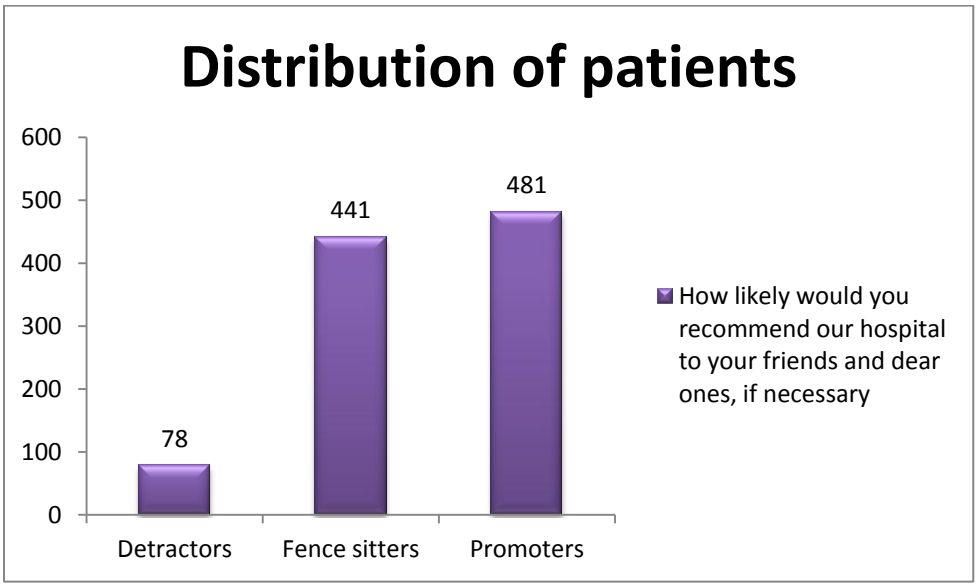
Floor No.	2 T1	2 T2	2nd Ext	3 T1	3 T2	4 T1	4 T2	5T1	5T2	6T1	6T2
Total Forms	235	70	110	135	33	104	57	59	68	51	78
Promoters	116	28	28	28	16	46	28	32	33	32	40
Fence sitters	105	28	28	28	16	49	22	24	30	18	35
Detractors	14	14	14	14	1	9	7	3	5	1	3
NPS	102	14	14	14	15	37	21	29	28	31	37

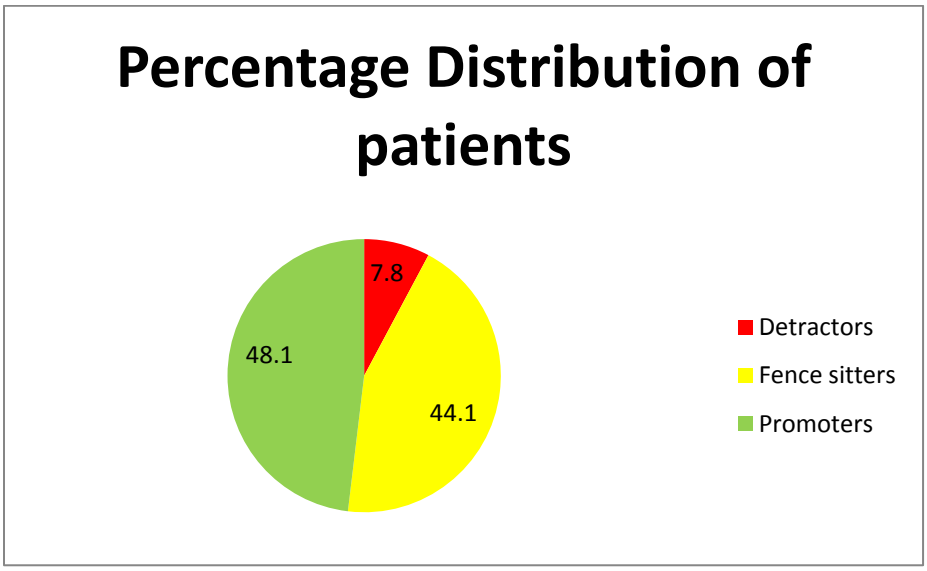
Percentage Distribution of Promoters, fence sitters and detractors in different floors of the hospital

Floor No.	2 T1	2 T2	2nd Ext	3 T1	3 T2	4 T1	4 T2	5T1	5T2	6T1	6T2
Percentage	23.5%	7%	11%	13.5%	3.3%	10.4%	5.7%	5.9%	6.8%	5.1%	7.8%
Promoters(%)	49.4	40	40	40	48.5	44.2	49.1	54.2	48.5	62.7	51.3
Fence sitters(%)	44.7	40	40	40	48.5	47.2	38.6	40.7	44.1	32.3	44.8
Detractors(%)	5.9	20	20	20	3	8.6	12.3	5.1	8.3	1.9	3.8
NPS(%)	43.4	20	20	20	45.5	35.8	36.8	49.2	41.2	47.4	47.4

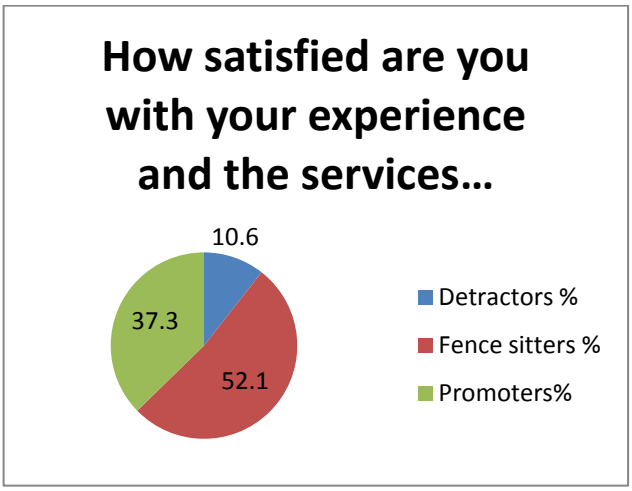
7. DISCUSSION

The Following graph gives the projection of future growth of the hospital on the basis of recommendation by the patients

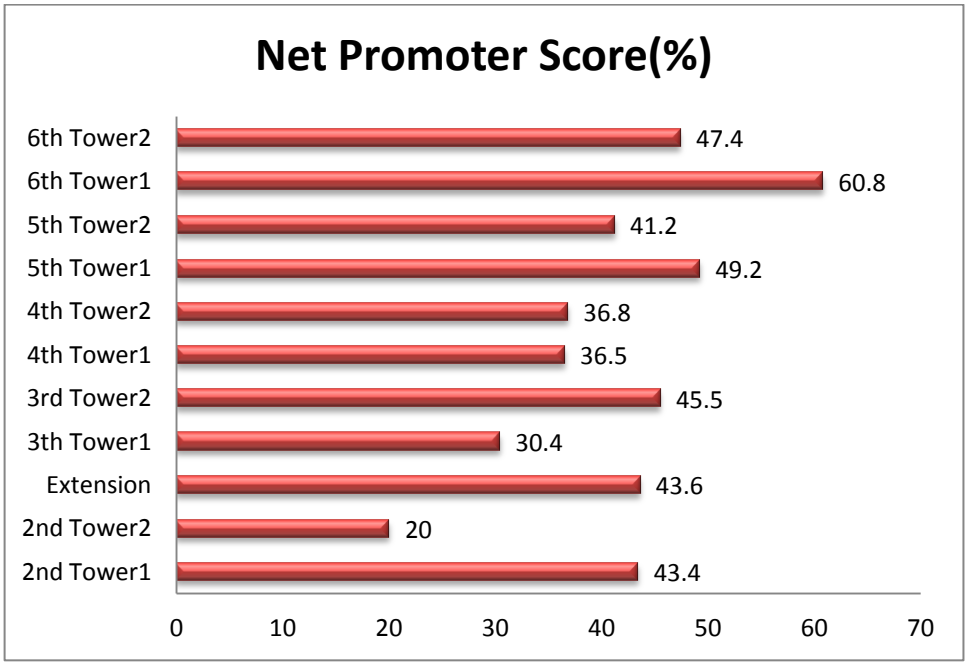




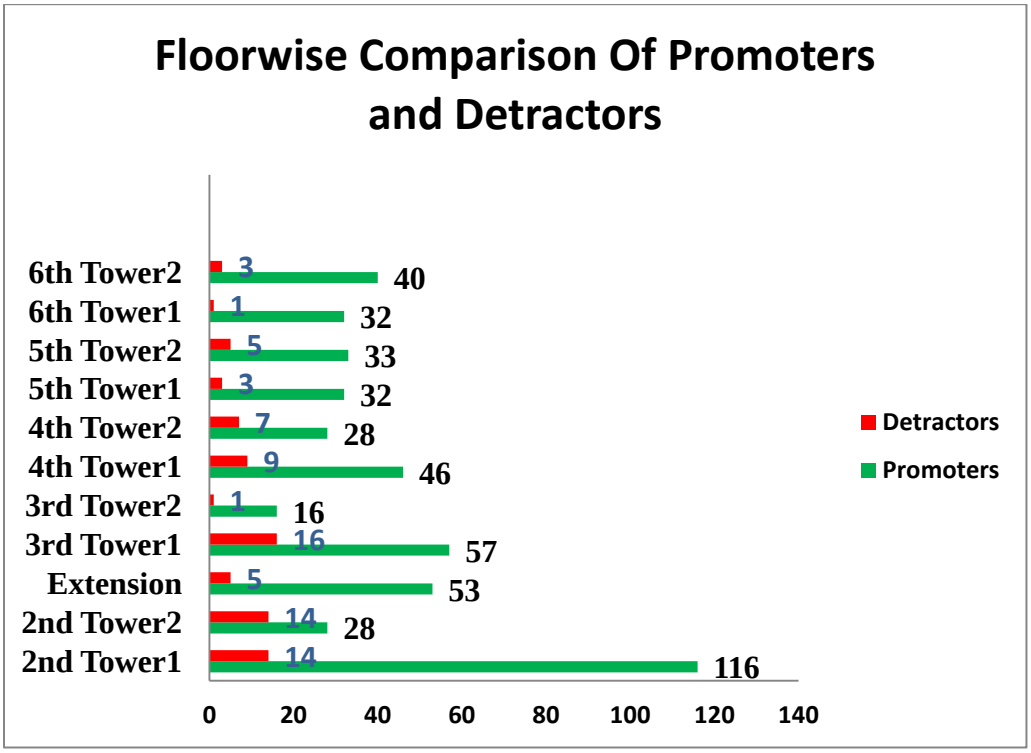
Categorization of Patients according to their satisfaction level by the services provided by the hospital :



- **Given below is the comparison of NPS scores obtained by respective floors**



- **Given below is a comparison in number of Promoters and Detractors of different floors**



8. CONCLUSION

As a result of data analyzed, we come to the conclusion

- **The number of Fence Sitters is maximum i.e 488 out of 1007 and there is a great scope of converting them into promoters and hence ensuring the good future growth of the hospital**
- **NPS score of 6th floor Tower 1 is highest i.e – 60.8, there is no need to make much changes in this floor.**

9. RECOMMENDATIONS

As per the findings the percentage of the fence sitters is quite high, almost approaching the number of promoters. This group poses the maximum challenge for the hospital as this group might change their loyalty as soon as there is a better player available who provided more value to them.

In this scenario the maximum efforts need to be directed towards the fence sitter who needs to be converted into the hospitals promoters. For this special emphasis has to be put on maximizing customers satisfaction with the services in a manner that they feel a sense of being a part of Apollo family. By working with these people and addressing their concerns you will not only secure the long term survival of change, but also will you uncover issues that will shape the change initiative itself.

An essential part of this persuasion is effective communication. It is only through communicating with the people affected by the change that the pro-change forces can be enhanced and the anti-change forces overcome.

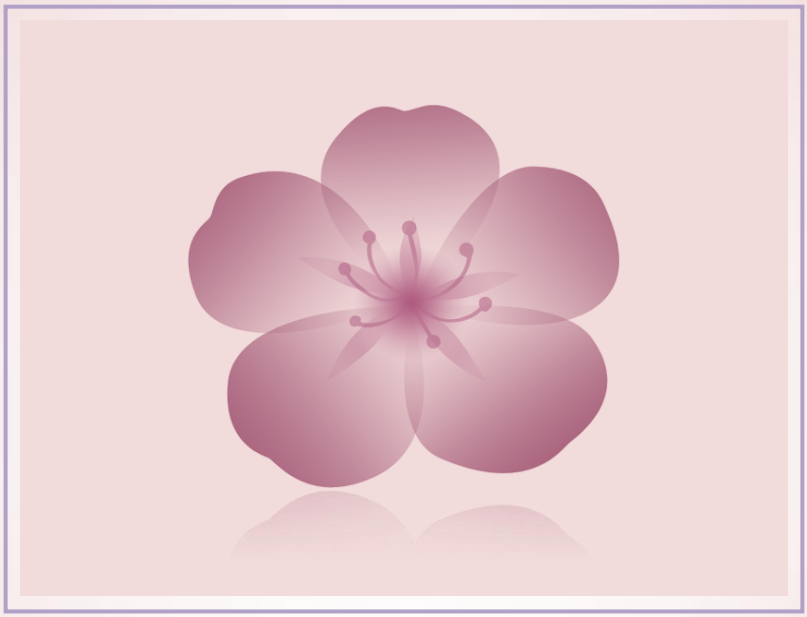
A counseling team can be created which are present to address the needs of the patients whenever required, instead of patients waiting for their respective doctors or care coordinators who are generally busy with the day to day clinical activities.

This team can also provide an orientation to the patients informing them of all processes and procedures involved, this in turn would reduce the burden on nurses and other clinical staff.

Recurring patients should be tended to with more concern, at the time of admission we can ask them a detailed record of their bad experiences (if any) in their last visit. This record should be studied so that none of the complaints get repeated as dissatisfied recurring are the ones who majorly become fence sitters.

The team who has been created to fulfill these activities should not feel internally threatened; they need to be ensured that they have their internal management support and that they can freely voice honest comments which the patients have brought forward to them.

PROJECTING HOSPITAL PROMOTION ON THE BASIS OF PATIENT'S PERCEPTION: A CASE STUDY IN A DELHI HOSPITAL



DR. NEHA ARORA

MARKETING CASE STUDY

1. INTRODUCTION

Hospital marketing is a specialized field that deals with connecting patients, physicians, and hospitals in mutual relationships.

To maintain viability hospitals must spend money to function and provide patient care. The main categories of expenses include salaries, supplies, depreciation, amortization, interest, and bad debt expenses. Amidst such a scenario there is clearly a need for analysis, strategy and communication to make the most of limited resources while providing compassionate health care. This is what hospital marketing does. But before deciding upon the hospital's marketing strategies some amount of market research is a must.

Market research is any organized effort to gather information about markets or customers. It is a very important component of business strategy. The term is commonly interchanged with marketing research; however, expert practitioners may wish to draw a distinction, in that marketing research is concerned specifically about marketing processes, while market research is concerned specifically with markets.

Market research is a key factor to get advantage over competitors. Market research provides important information to identify and analyze the market need, market size and competition. One of the element of doing market research is to know from where does the patients come or what prompts a patient to choose one hospital than the other as this is the key determining area where the marketing strategies should direct.

2. OBJECTIVES

1.To elicit various reasons for deciding upon Apollo hospital, Delhi by the patients as their care providers.

2.To analyse the result of this study for making strategies for future marketing focuses by the hospital.

3. METHODOLOGY

A cross sectional study was done at Apollo hospital at various outpatient departments and for the inpatients as well to elicit the reasons for choosing this hospital as their care providers. For this purpose random sampling was done and forms were handed over to patients for marking against the option that they thought was their reason to come to Apollo hospital Delhi. The data from these forms was evaluated and future strategies were recommended based upon the findings.

The SURVEY was conducted in Indraprastha Apollo Hospital in the months of March-April 2012 for a total of 1044 patients in both Inpatient area as well as Doctor's Offices block.

The patients were asked the following questions:

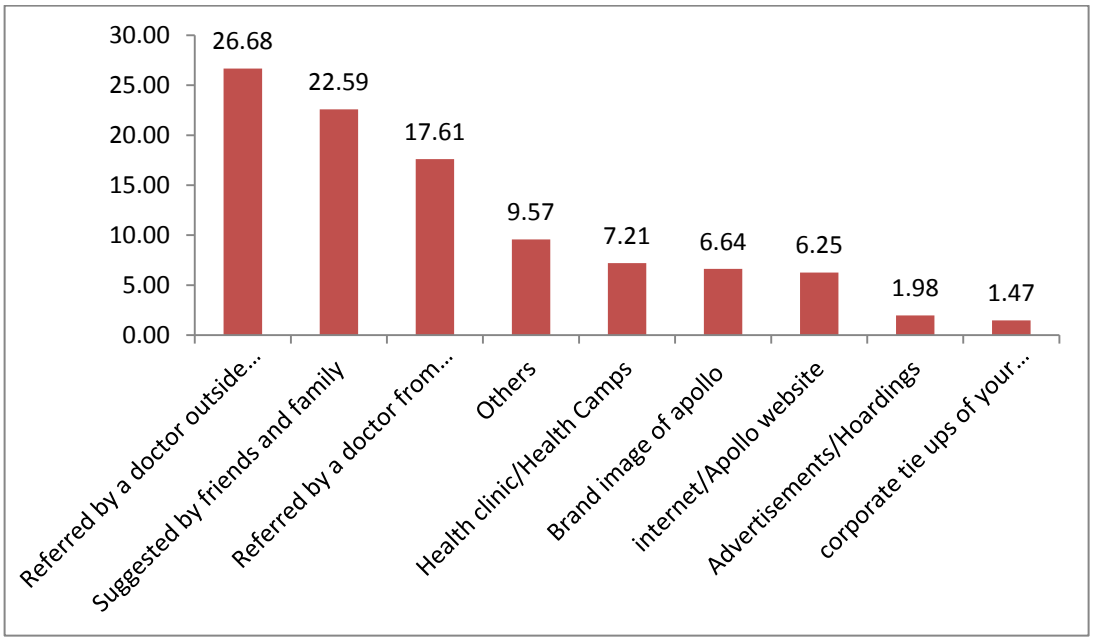
1. What made you choose Apollo Hospitals for your Healthcare?
    - Brand image
    - Internet/Apollo Website
    - Suggested by Friends/Relatives
    - Referred by a doctor outside Apollo hospitals
    - Referred by a doctor from Apollo hospitals
    - Corporate tie-up of your company with Apollo
    - Health Clinic/Health camps
    - Advertisement/Hoardings
    - Others
2. Are you a resident of Delhi/NCR?

4. RESULT AND FINDINGS :

Following graph shows frequency distribution of different sources for choosing Apollo Hospitals:

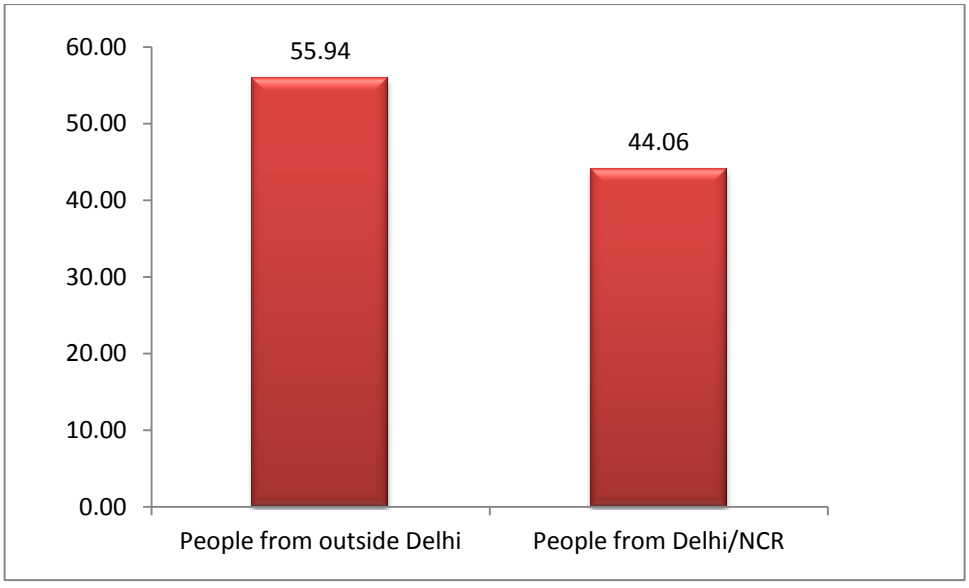
Total forms-1044

Total Responses - 1567



Distribution of people seeking healthcare facilities from Apollo hospital :

DELHI/OUTSIDE DELHI

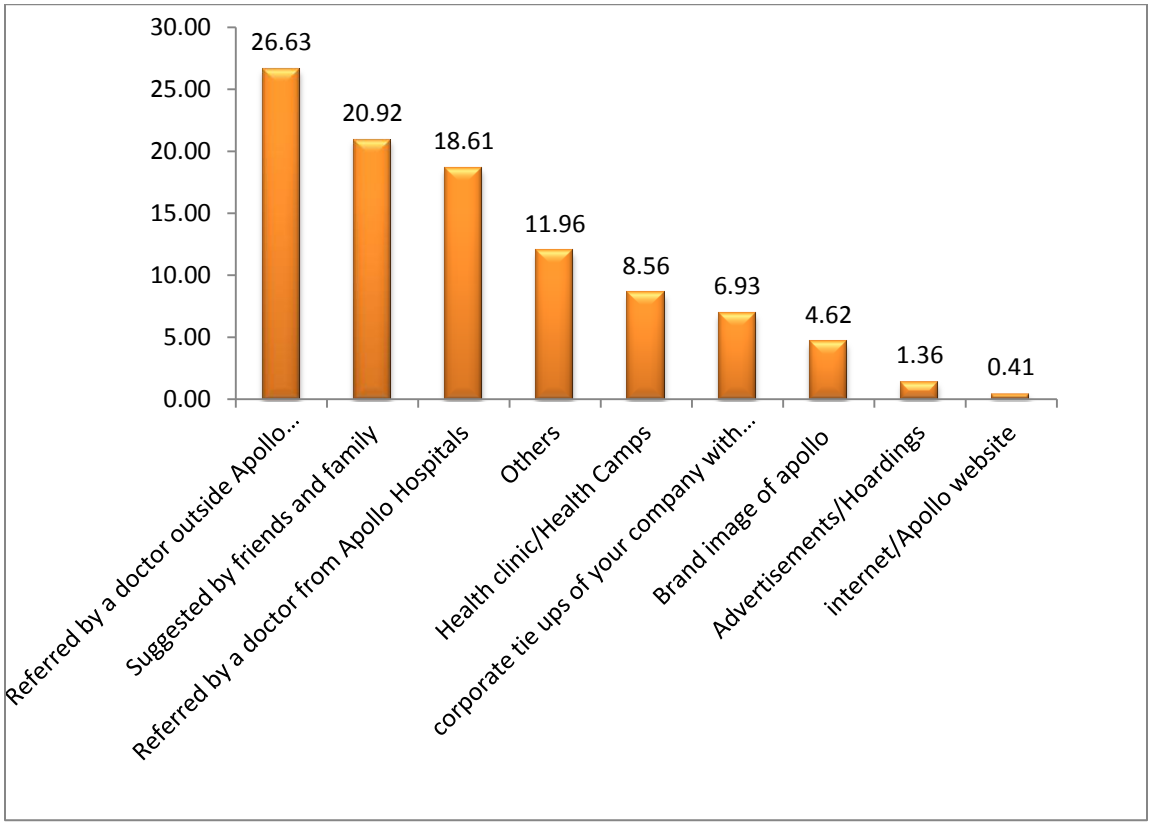


Following graph shows the frequency distribution of different sources for choosing IPD of Apollo Hospitals :

Inpatient Department

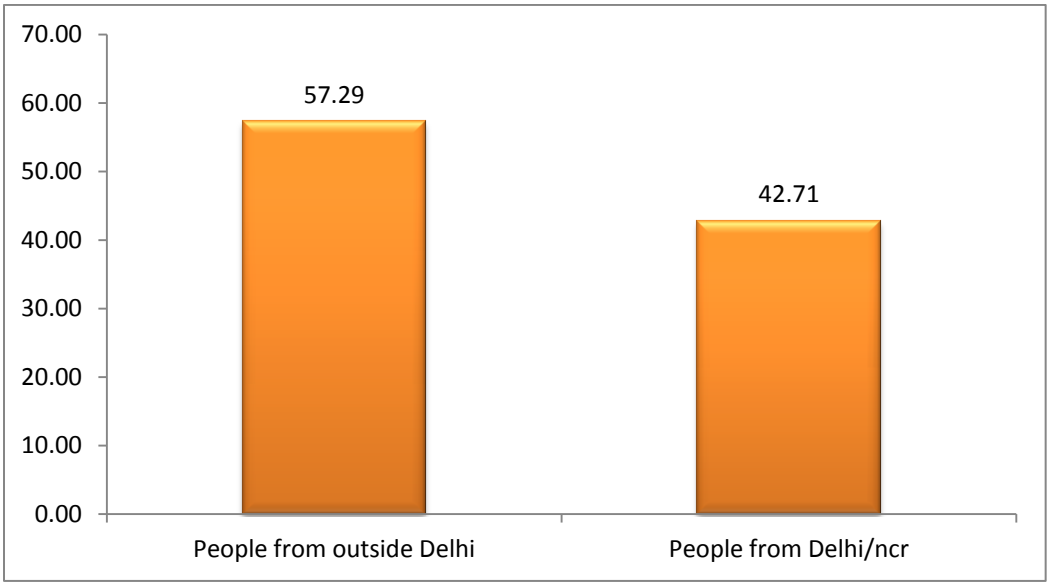
TOTAL FORMS – 487

TOTAL RESPONSES-736



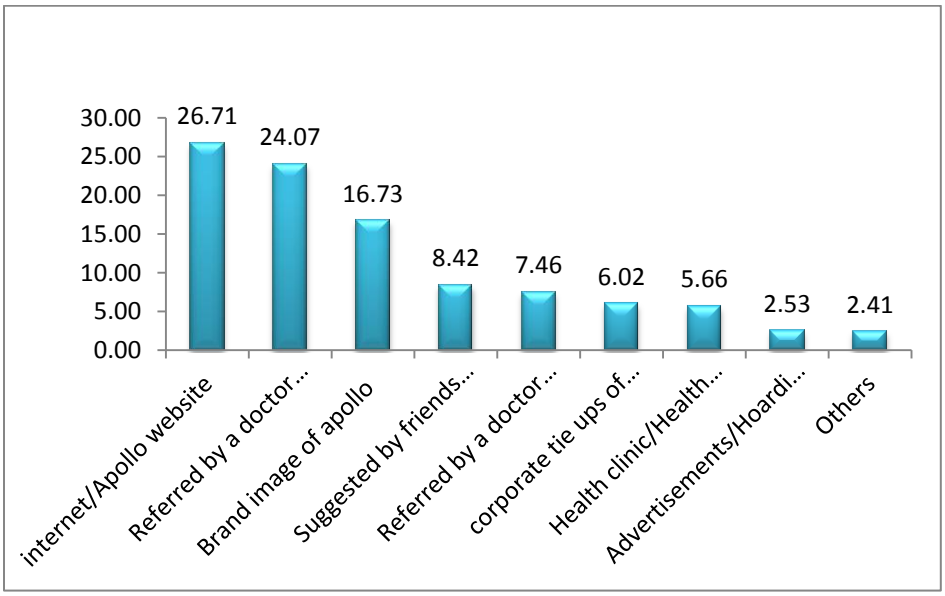
Inpatient Department

DISTRIBUTION: DELHI/OUTSIDE DELHI



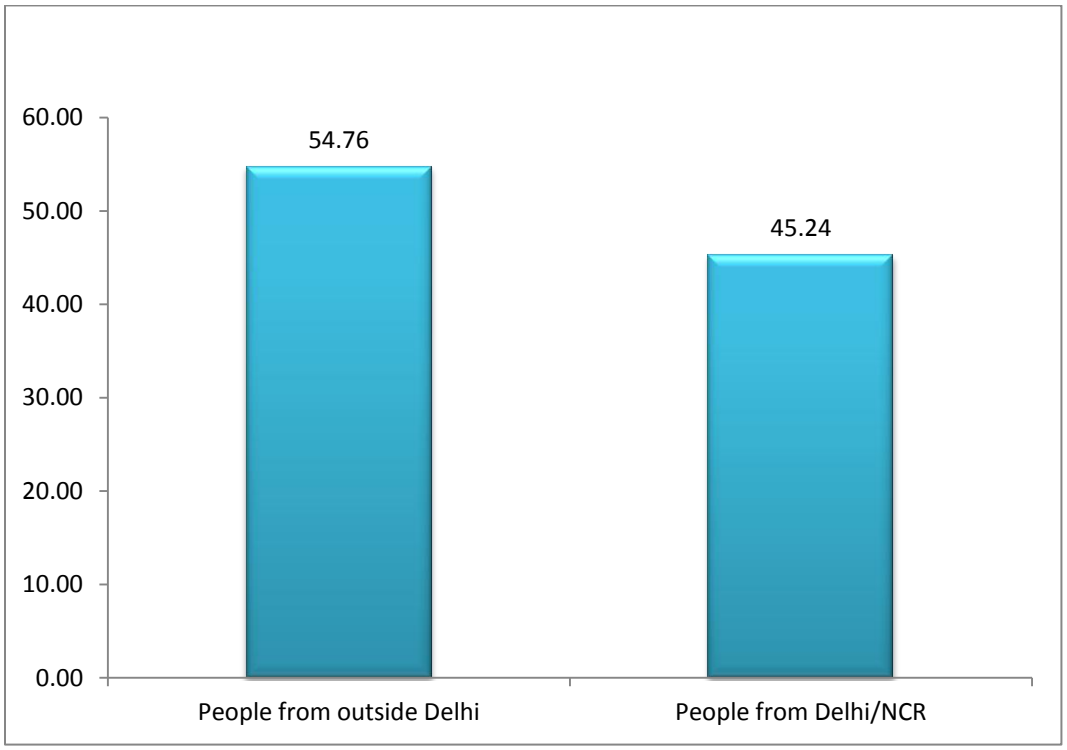
Doctor's Offices (Out –Patient's Department)

TOTAL FORMS- 557



Doctor's Offices

DISTRIBUTION: DELHI/OUTSIDE DELHI



DISCUSSION

As can be clearly seen from the findings, the maximum number of the patients are coming because they were suggested to come to Apollo Hospitals by their family and friends in which they have maximum trust. Second most common reason is the brand image of the hospital which has been a constant endeavor by the hospital in touching lives in the best possible manner which has gained a very positive image in the patients mind. Very close to is the reason that their treating doctor outside Apollo Hospital is referring the patients, who are very much entrusted by them. The number of people visiting Doctor's offices is seemingly high because of Internet Marketing.

The initiatives which have not been effective are: Advertisements / Hoardings as well as Health Clinics and Camps.

RECOMMENDATIONS

The target focus should be on achieving customer loyalty first than on hard core marketing which churns away lot of hospitals margin .For this the dynamics of the patient pool has to be clearly understood first before reaching out. Immense emphasis has to be put up on patient delight than just the treatment. Great detailing has to be done for each patients need.

Also the marketing should be more aggressively done on the Internet than by putting up posters and hoardings. Twitter and patient interaction on Facebook would be better as Patients typically have 2 responses: surprise that the hospital is on Twitter and sincere appreciation for its reaching out personally to them.

Live Chat option with a counseling team can be scheduled for International Patients. They can get doubts solved beforehand in turn leading to less chaos when they actually visit the hospital.

Making it more accessible to patients/citizens can strengthen the hospital's Health Camps and Checks initiative. Certain seminars/workshops can be held accessible to the public in turn getting their active involvement.

CONCLUSION

Results of this study should be compared to previous waves and can be used to make :

Strategic marketing decisions about the hospital's branding and competitor hospitals in the primary and secondary market. The recommendations can be used as a planning tool

for strategic marketing development. In today's scenario where there is so much patient awareness gone are the days when patients took what they were given but they demand better facilities and services and are well informed .Few bad experiences or negligent attitude of the hospital can ruin the prospects of having few more patients.

Project -3

A Study On Cost And Quantity Of Coronary Artery Bypass Graft Surgery –Beating Heart In India

1. Introduction :

Coronary artery bypass graft surgery or heart bypass is a surgical procedure performed to relieve angina and reduce the risk of death from coronary artery disease. Arteries or veins from elsewhere in the patient's body are grafted to the coronary arteries to bypass atherosclerotic narrowings and improve the blood supply to the coronary circulation supplying the myocardium (heart muscle). This surgery is usually performed with the heart stopped, necessitating the usage of cardiopulmonary bypass; techniques are available to perform CABG on a beating heart, so-called "off-pump" surgery

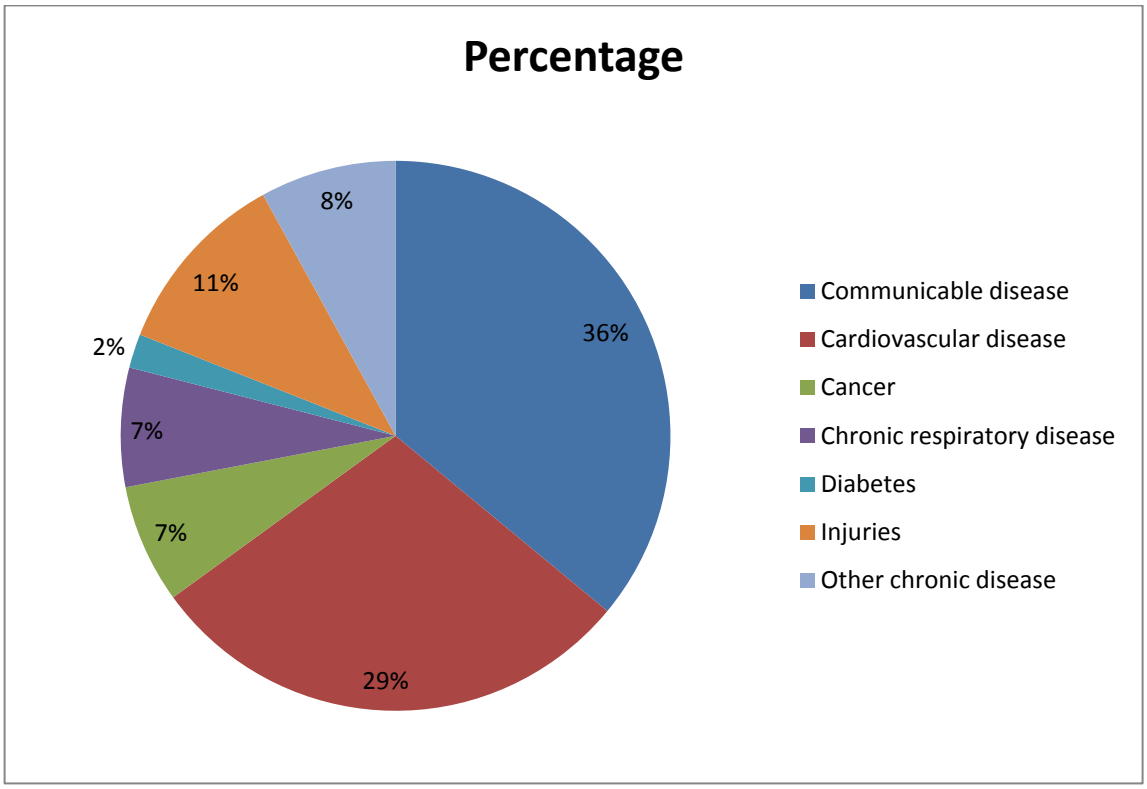
CABG is the preferred treatment for :

- Disease of the left main coronary artery (LMCA).
- Disease of all three coronary vessels (LAD, LCX and RCA).
- Diffuse disease not amenable to treatment with a PCI.

According to recent estimates,Cases of CVD may increase from about 2.9crore in 2000 to as many as 6.4 crore in 2015. Deaths from CVD will also more than double. Most of this increase will occur on account of coronary heart disease —AMI, angina, CHF and inflammatory heart disease. The prevalence rates among younger adults (age group of 40 years and above) are also likely to increase. Prevalence rates among women will keep pace with those of men across all age groups. Prevalence rates of CVD in rural populations will remain lower than that of urban populations but it will reach around 13.5% of the rural population in the age group of 60–69 yearsby 2015.It accounts for largest share in Noncommunicable Diseases and causes highest mortality among other noncommunicable diseases.

Name of the disease	Percentage
Communicable disease	36%
Cardiovascular disease	29%
Cancer	7%

Chronic respiratory disease	7%
Diabetes	2%
Injuries	11%
Other chronic disease	8%



In India,with rapidly increasing infrastructure ,clinical expertise, international standard implementation, it is witnessing an increase in the availability of specialty cares.Among heart surgeries, Coronary artery bypass grafting (CABG) is the most common type of heart surgery. More than 500,000 of these surgeries are done each year in India. CABG improves blood flow to the heart and is used for people with severe coronary artery disease. (CAD).

2. Aim and Objectives :

Objectives :

- To assess high value consumables used in CABG- Beating heart
- To reduce financial investment in the consumables of CABG

3. Methodology :

Research design : Descriptive study

Study area : Patient's undergone CABG in cardiac OT of Indraprastha Apollo,New Delhi

Sampling technique : Random sampling: Thirty patients in a month are selected randomly for two months to assess the consumables used in CABG- Beating heart surgery

Sample size : 60 patients undergone CABG

Calculation of sample size

- Acceptable error is taken as 19%
- Keeping the level of significance at 5%, the z value is 1.96.
- From the records taken from MRD(Medical Records Department) the following has been found :

  Total surgeries occurring in Apollo in two months : 3180

  Total CABG surgery in two month: 180

- P = 180/3180 = 0.06
- Q = 1 – 0.06 = 0.94
- $n = (z^2)\ (p)\ (q) / e^2$
- Therefore $n = (1.96)^2(0.06)\ (0.94) / (0.19)^2$
- N = 60

Selected sample : CABG – Beating heart cases

Duration of data : Two months (April 2012 – May'12)

Steps :

1. .Bills of patients underwent CABG surgery-Beating heart in last two months are collected from OT department
2. Bill of consumables used by 60 patients are collected from materials department
3. A list of all surgical consumables used for sixty patients who underwent CABG-Beating heart surgery is made
4. Total cost and quantity used over six months of time is assessed and recorded corresponding each item
5. The usage value for each item is obtained by dividing total cost of consumables by total quantity of each consumable
6. The list is sorted from high to low
7. Each item's percent of total usage value is calculated
8. Categorizing items into ABC group:

   A: 70% of total cost of consumables over two months
   B: 20% of total cost of consumables over two months
   C:10% of total cost of consumables over two months

9. The list is again sorted from high to low according to cost per unit item and categorization is made :

   H: 70% of total cost of consumables per unit
   M:20% of total cost of consumables per unit
   L: 10% of total cost of consumables per unit

4. DISCUSSION :

- To facilitate hospital operations: - Hospital functioning generally depends on the supply of various items required for day to day operations. Disruption of inventory supply in a hospital will lead to disruption of scheduled services and to less utilization of hospital facility and then less number of patients treated.
- The main principle of the inventory control is that the items for which annual consumption is high, orders are placed quite frequently so that the inventory level is as low as possible.

- The items whose annual consumption is not high, sufficient stocks are maintained and the orders are placed less frequently**.**
- The capital required to carry inventories costs money and holding unduly large amount of inventory will lead to blockage of capital**.**
- To avoid losses from inventory obsolence: Holding large inventories will expose the hospital to the risk of obsolence of items, equipment and outdating of drugs etc.
- To improve patient care services: - Smooth and uninterrupted supply of items in hospital will lead to efficient and better patient care services with satisfaction to the doctors and patient alike.

Functions

- Provide maximum supply consistent with maximum efficiency and optimum inventory investment.
- Provide a cushion between the forecasted and actual demand for a material.

5. ANALYSIS

ABC Analysis

It is said to connote " Always better control".The basis of analysisng the annual consumption cost (or usage cost) goes after the principle :

VITAL , FEW, TRIVIAL,MANY

The criteria used here is the money spent and not the quantity consumed.Pareto's law states that "In any series of elements to be controlled, only a small fraction in terms of elements will usually account for a large fraction in terms of results".By analysing the total cost of various inventories it has been found that the inventory can be divided into three groups of items

- A items – 10 % items amounting to 70 % annual consumption cost (usage value)
- B items – 20 % of items amounting to 20 % of annual consumption cost
- C items – 70 % of items attribute to 10 % of annual consumption cost

	% Item	% of two months consumption cost
A- items	10	70
B-items	20	20
C-items	70	10

Applicability Of ABC Analysis:

Inventory Control	A	B	C
Level of control	Top	Middle	Storekeeper
Review	Freequent(monthly)	Less frequent(3monthly)	Infrequent(Annually)
Safety stock	Minimum	Reasonable	Large
Ordering	Exact	Accurate	Periodic

HML Analysis :

It is based on on unit value of the items. The cost per item (per piece) is considered for this analysis.

H - High unit cost

M - Medium unit cost

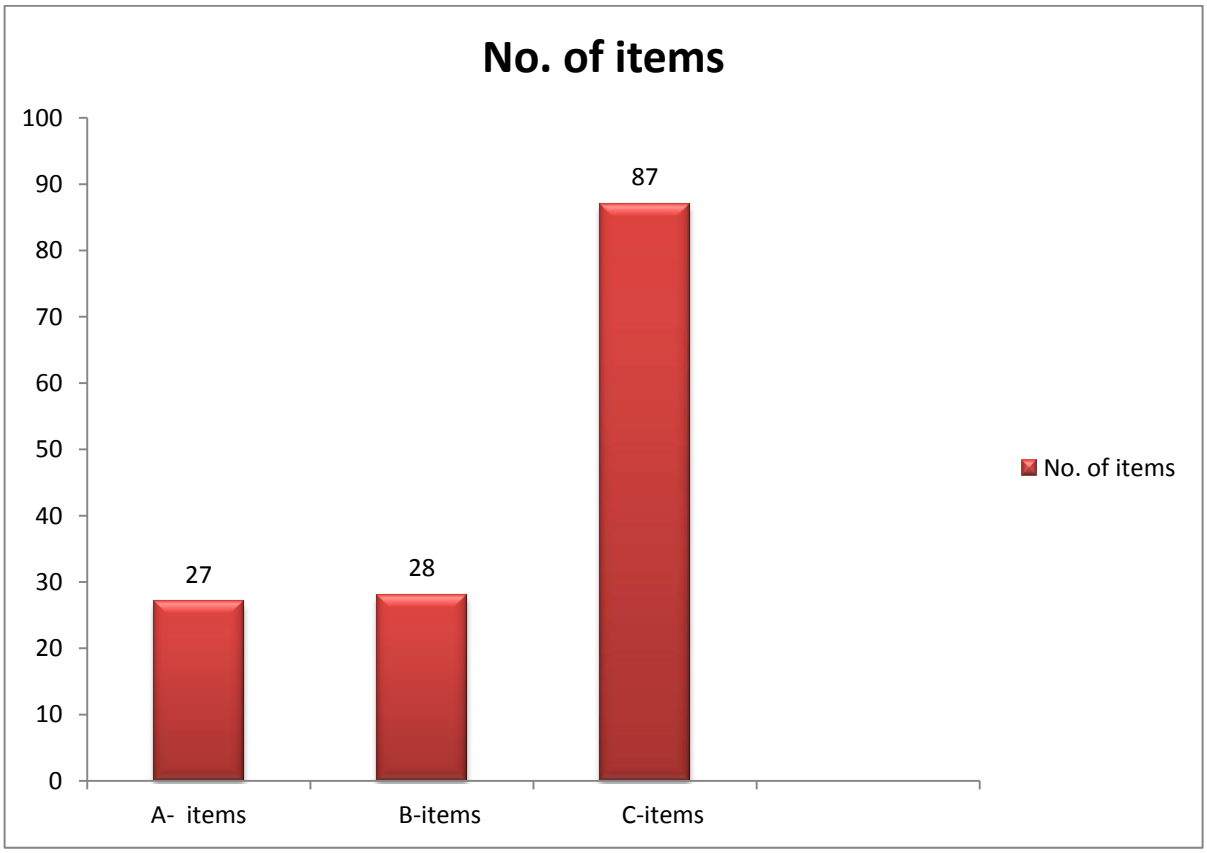
L - Low unit cost

	Percentage of total cost of consumables per unit
H	70
M	20
L	10

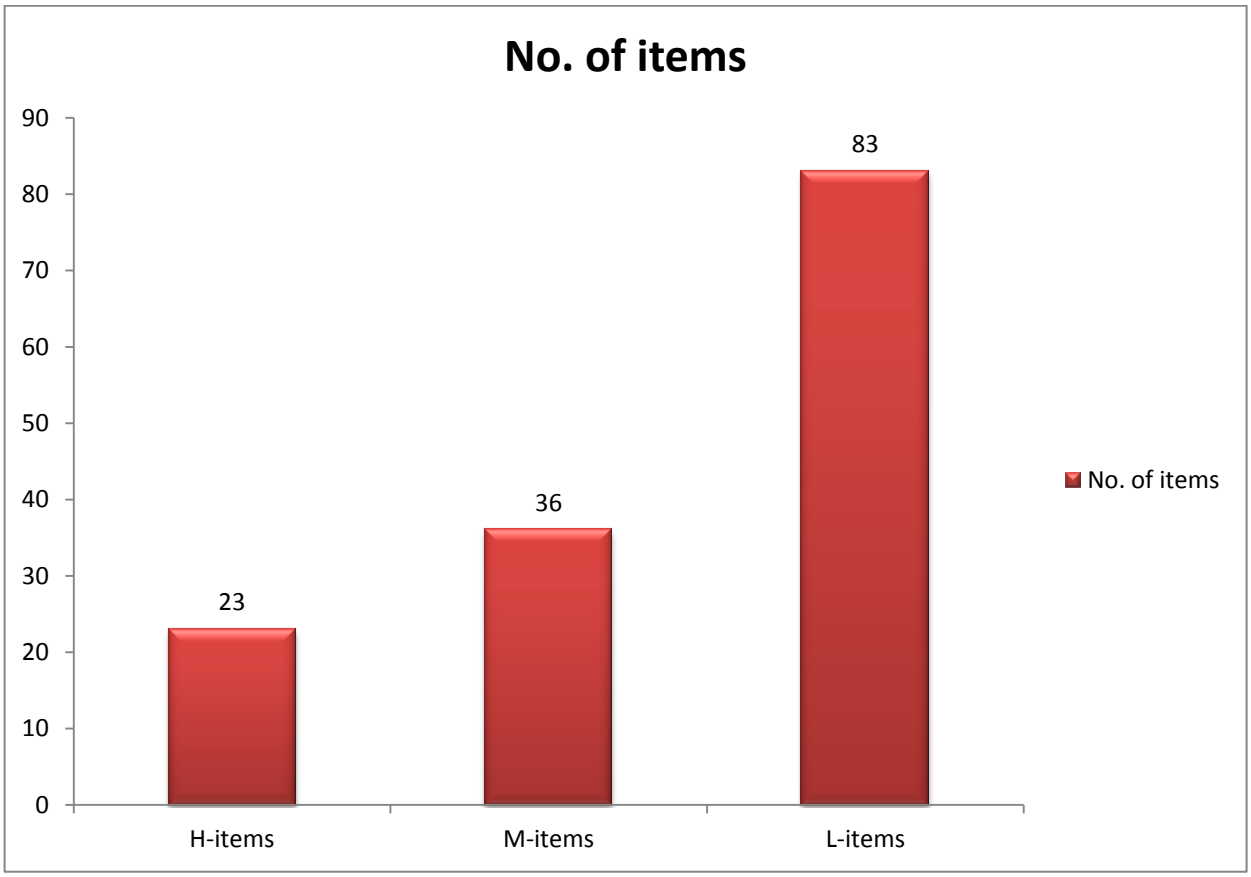
It helps in bringing controls over consumption at the departmental level. Hence aids in purchasing policy of the hospital.

6. RESULTS :

ABC Analysis



HML Analysis :



ABC & HML Matrix

	A- items	B-items	C-items		
H - items	Aortic Punch 3.5mm -S Cell Saver (disposable) Clear View Blower / MI Intra aortic baloon C Mersilene Tape RS21 Octopus 4.3 Tissue STA PA Catheter 7FR.110cm Swan GANZ VIP (831/834 Vessel Shunt (Chase SH	Octopus 4 Tissue Stabi Oxygenator Affinity PA Catheter (114F7P) PA Catheter 7FR (1147F Swan GANZ Catheter(TD	Aortic Punch 2.7mm -S Aortic Punch 4.0mm-S Arterial Cannula (7301) Mistril Blower CAT No Surgicel 1*2 Fibrillar Surgicel 3*4NU-KNIT Two Stage Ven. Cannula		
M-items	Cautery Plate 2702M/25 Fep - 15 E Cardiac Pack Horizon Medium Clips(Horizon small clips (0 PCCS Drainage Bottle W PM Kit CTVS (BKT - 57) Prolene 812 Prolene 812 NW Prolene 8741H Surgical Steel MNW 949	Centsteel No6 44mm Intra cardiac Sucker A Micro Knives (19500-15 PCCS Negative Suction Surgicel 4*8 (W 1912)-J	Electro Surgical ground Embolectomy catheter 3 Guide wire .025 x 150 L V Vent Catheter (121 Multification defibril PM Kit DTX (BKT - 21) PM Kit Single (B- KT - 16) Pressure Monitoring K I Pressure Transducer DO Prolene 811 Prolene 8304 W Prolene 8526 H Quick Prime Lime Doubl Surgical 6 Steel (2224 Surgicel 2*3 (1952)-J&		
L-items	Act Tube Actulyke Prolene 8704 Prolene 8707 PM Line 200CM-BLMS	Centilene 6-0 P8802 Centilene P 8704 AB- Fentanyl 10	15 Deg. Stab knife Str AV Tubing 1/4 X 1/16 X 180 Bone Wax W	Fentanyl 2 ML Fluid Shield fog free Gamophen-	Surgical silk R825 Surgiwear (Trolley COV) Surgiwear

	Vicryl 945H(VCP) Vicryl 947H (VCP)	ML Gown Disposable - S&S Liga Clip LT-200 Mersilk 5062 Monocryl 1326 Prolene 8556(W) Prolene 8807(W) SLS Clip Micro Size Sofnet swab 10*10(PKT) Sofnet swab 30*30(PKT) Spongostan Standard MS vicryl 936H (VCP) vicryl 2347 VP	810 BT Filter 40 Micron Cap (Disposable) 50 PC CD Bottle with Borosil Centilene 4 -0 P 8935 Centilene 5-0 P 8556 A Centisilk NW 5062- CEN Centisilk NW 5334 - CE Centlon 2-0 CNW 3336- Connector 1/2 x 1/2 Connector 1/2x3/8-BLS Connector 1/4 X 1/4 BLMS Connector 1/4*1/4 LL - Connector 1/4X1/4 Life Connector 1/4X1/4 x1/4 Connector 3/8x3/8-LIF Ethibond 6936 Ethibond 6937 Ethilon 3336 Face Mask Triple Layer	500ml-J&J Gasline Filter Jugular Drapes set-S&S Laryngeal mask classic Liga Clip LT -300 Mersilk 5000 Mersilk 5003 Mersuture 4216 Microshield 636 Handru Morphine 1 Ml 15Mg Inj. PM Line 200CM-Lifelin Prolene 8526 W Prolene 8597 Prolene 8718 (W) Prolene 8935 PVC Tubing 1/4 X 1/16 X 12 SlS Clip Medium Sls Clips Small Sterillium 500ml-R Surgical silk R822	(Trolley COVE) Sutupak 212 Sutupak 215 Thoracic Catheter 24 FG Thoracic Catheter 28 FG Thoracic Catheter 32 FG Umbilical Tape W-276 Urine culture bottle Wearon Apron (Plastic A

7. RECOMMENDATIONS & CONCLUSION :

A and H items (most important)

- It should be Strictly controlled
- Accurate estimates of requirement should be assessed
- Close monitoring of its consumption should be done
- Safety stock should be low for A types of items
- Control of items in the hands of higher level manager

B and H-items(important)

- Moderate control and moderate stock should be maintained
- Purchase should be based on exact requirement
- Reasonably strict monitoring and control
- Safety stock should be moderate
- Control – Middle level manager

C and H-items

- Ordinary control measure should be taken
- Purchase based on usage estimates should be made
- Control exercised by lower level manager -store keeper
- Safety stocks should be high for these items

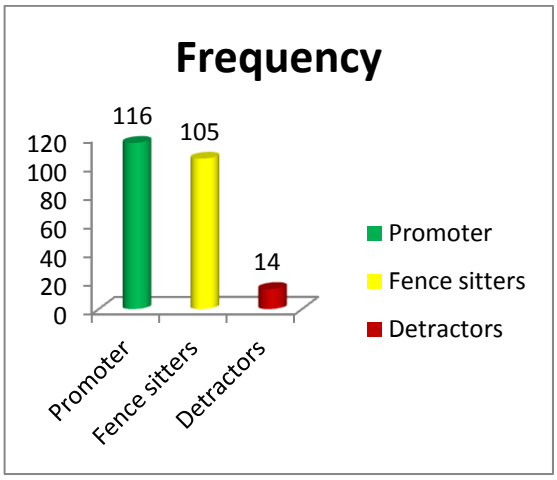
ANNEXURE 1 :

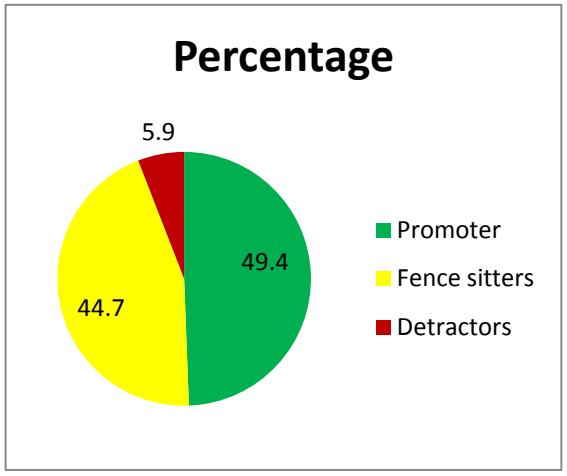
NET PROMOTER SCORE OF APOLLO HOSPITAL

DATA RESULT & FINDINGS

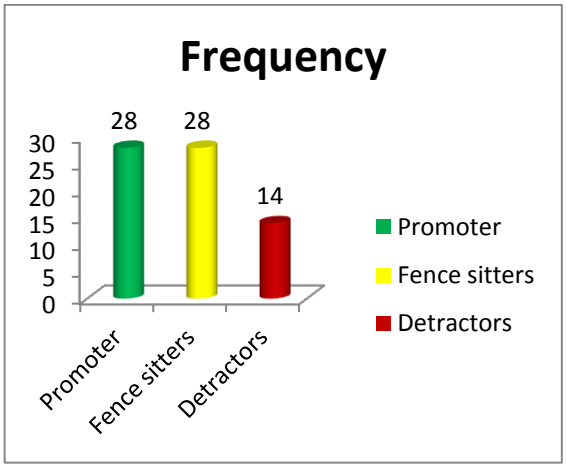
1. **2nd Floor Tower 1**

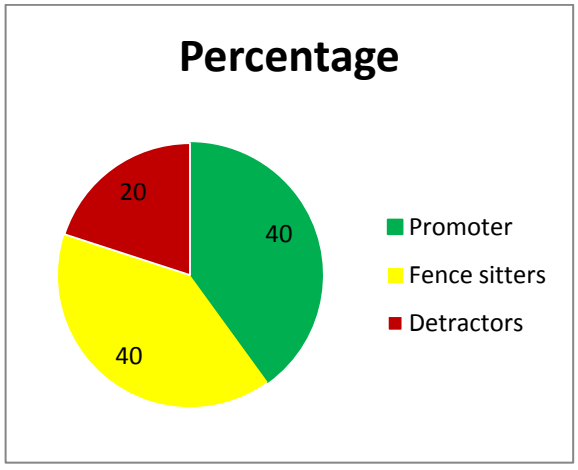
   Total forms = 235





2. **2nd Floor Tower 2**
   Total forms-70





3. 2nd Floor Extension

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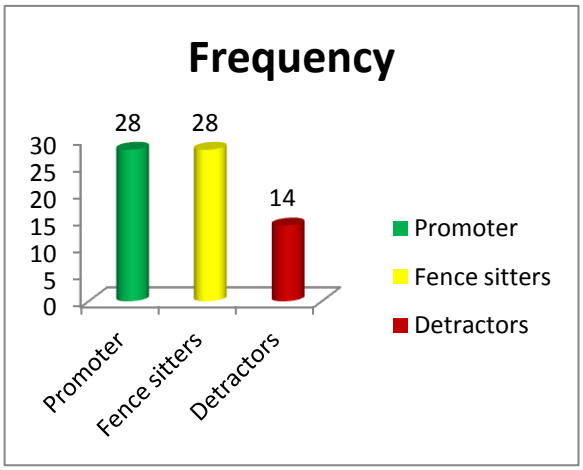
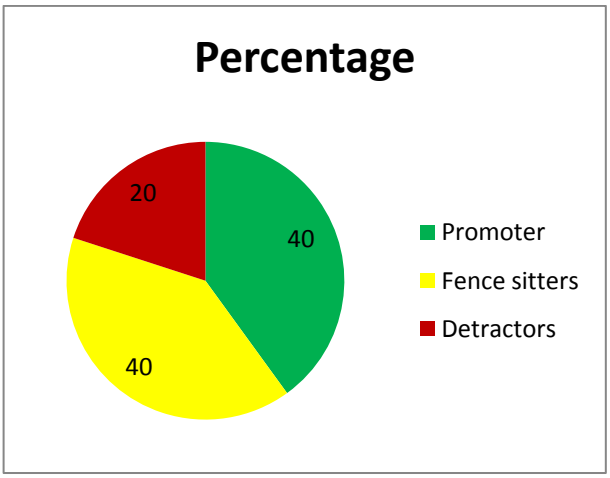
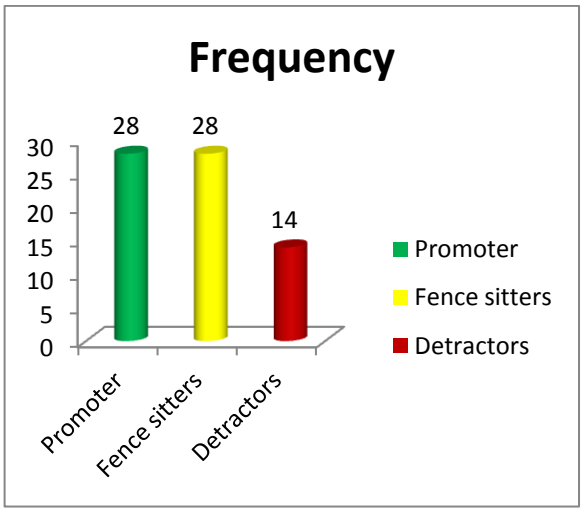
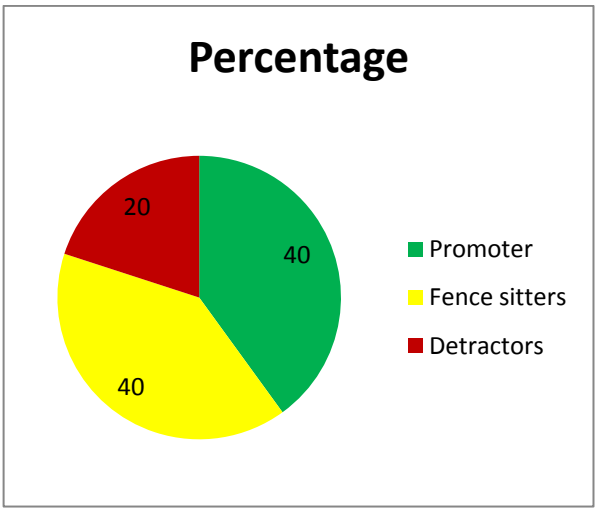




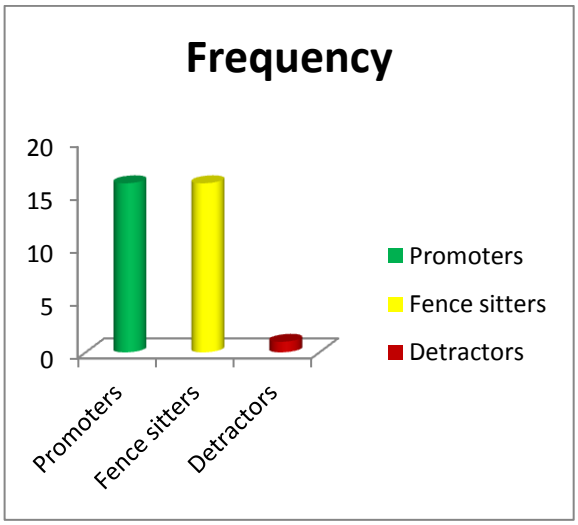
4. 3rd Floor Tower 1

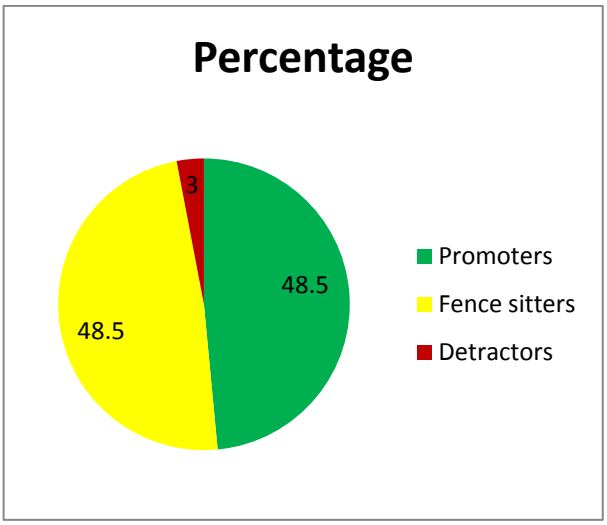
Total Forms 135



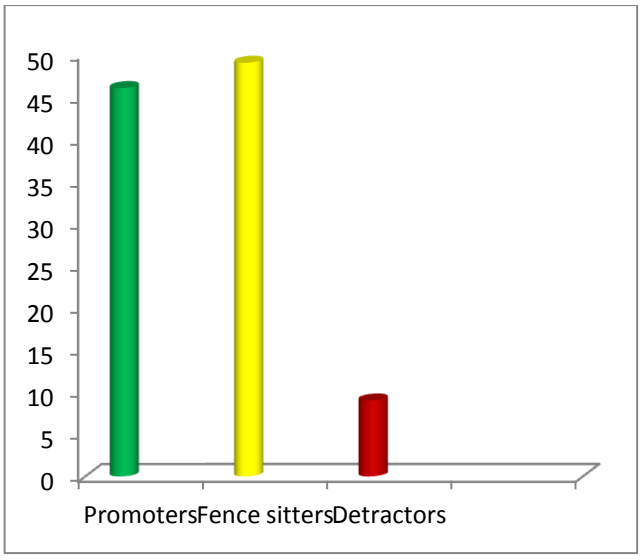


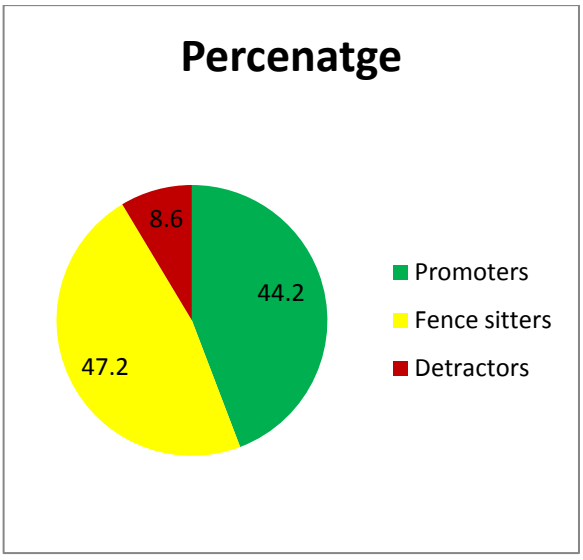
5. **3rd Floor Tower 2**
   Total forms =33



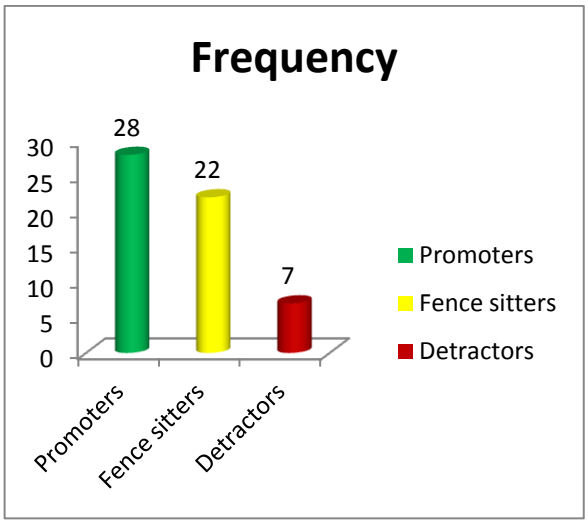


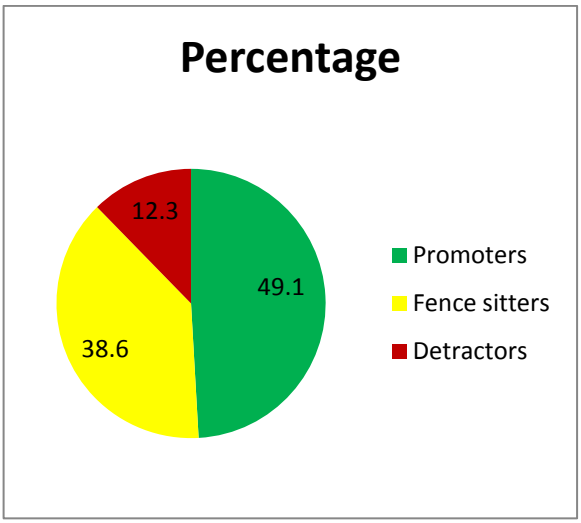
6. **4th Floor Tower 1**
   Total Forms =104





7. **4th Floor Tower 2**
   Total Forms : 57





8. **5th Floor Tower 1**

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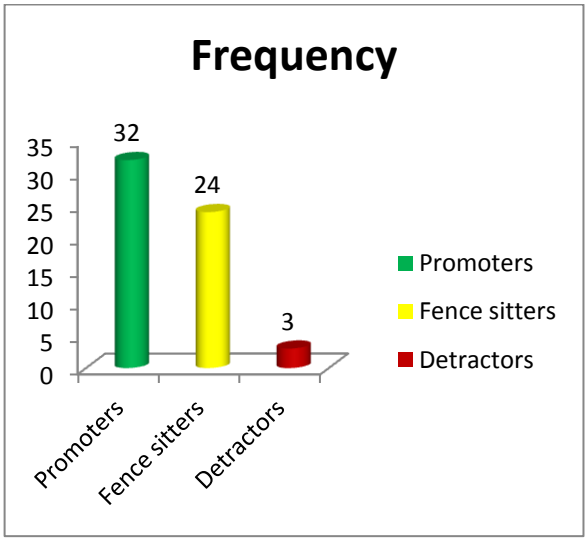
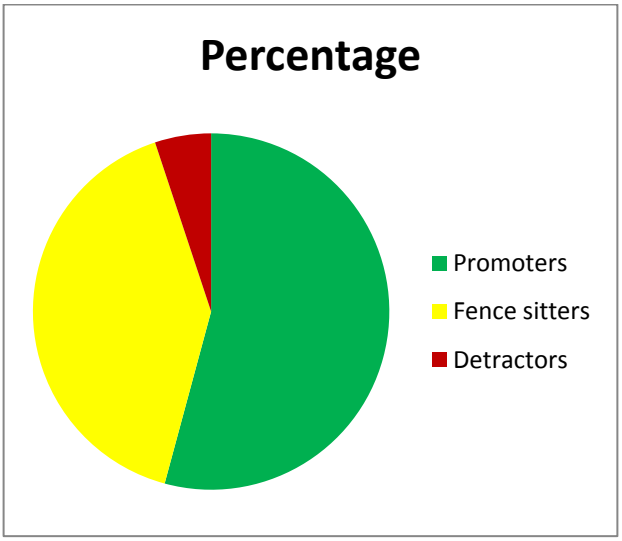
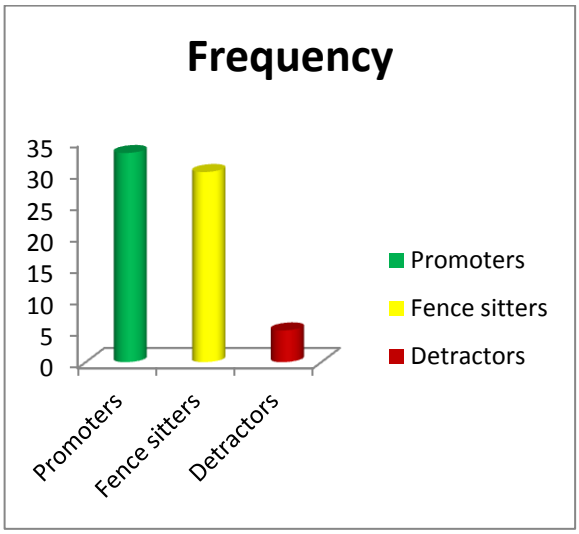
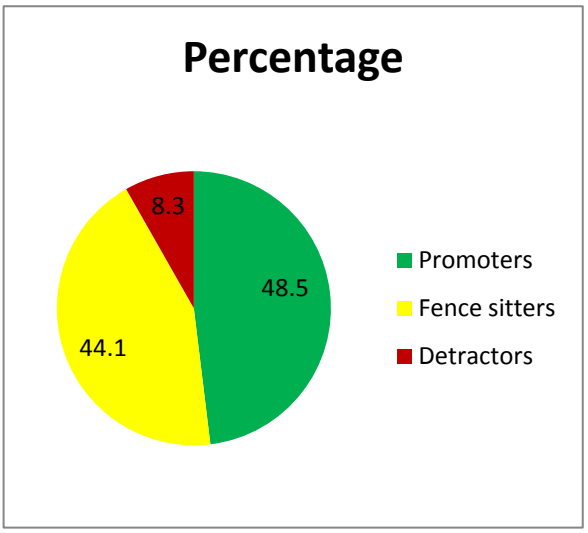




9. 5th Floor Tower 2

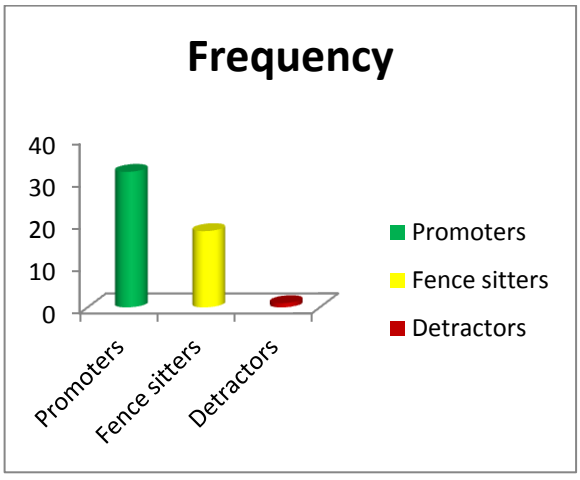
Total Forms =68

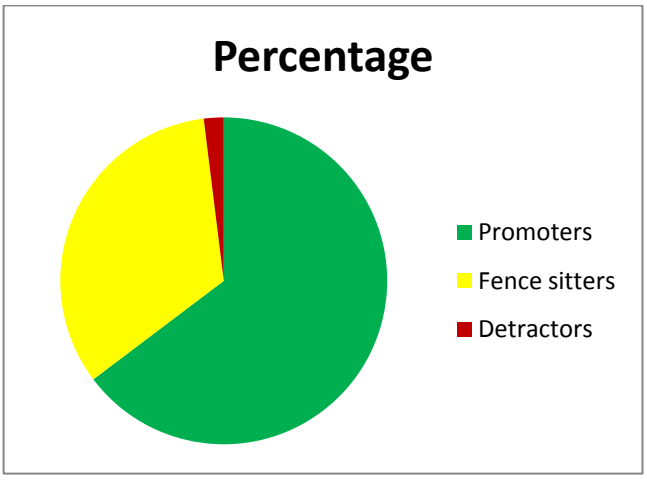




10. 6th Floor Tower 1

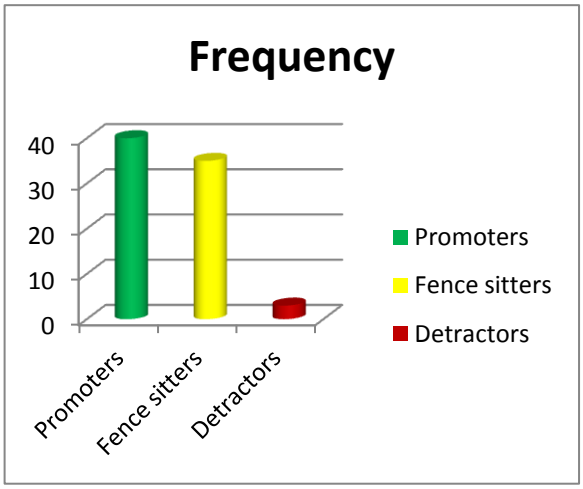
Total Forms =51

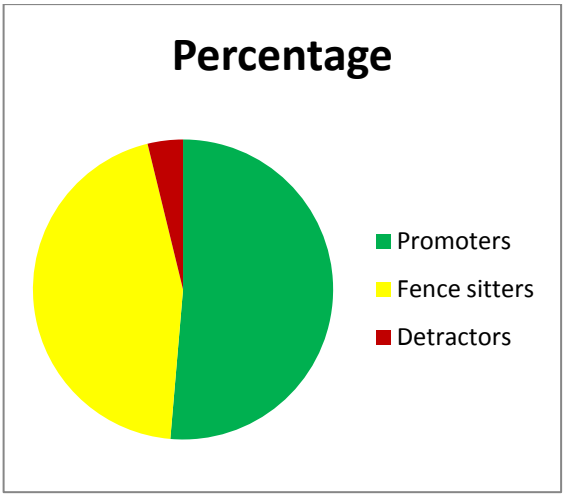




11. 6th Floor Tower 2

Total Forms =78





The Following Table Gives Us The Result Of Total 1000 Patients:

Overall distribution of patients as promoters, detractors and fence sitters :

	Frequency	Percentage
Promoters	481	48.1
Detractors	78	7.8
Fence Sitters	441	44.1
NPS	**40.3**	

- **Comparison of NPS scores obtained by respective floors**

FLOOR	**NPS (%)**
2T1	43.4
2T2	20
Extension	43.6
3T1	30.4
3T2	45.5
4T1	36.5
4T2	36.8
5T1	49.2
5T2	41.2
6T1	60.8

- **Given below is a comparison in number of Promoters and Detractors of different floors**

	Promoters	Detractors
2nd Tower1	116	14
2nd Tower2	28	14
Extension	53	5
3rd Tower1	57	16
3rd Tower2	16	1
4th Tower1	46	9
4th Tower2	28	7
5th Tower1	32	3
5th Tower2	33	5
6th Tower1	32	1
6th Tower2	40	3

ANNEXURE 2 :

Total forms-1044

Total Responses - 1567

Reference sources	Percentage Distribution	Frequency
Suggested By Friends And Family	26.68	418
Brand Image Of Apollo	22.59	354
Referred By A Doctor Outside Apollo Hospitals	17.61	276
Referred By A Doctor From Apollo Hospitals	9.57	150
Others	7.21	113
Internet/Apollo Website	6.64	104
Corporate Tie Ups Of Your Company With Apollo Hospitals	6.25	98
Advertisements/Hoardings	1.98	31
Health Clinic/Health Camps	1.47	23

DISTRIBUTION: DELHI/OUTSIDE DELHI

	Percentage Distribution	**Frequency**
People From Outside Delhi	55.94	584
People From Delhi/NCR	44.06	460

Breakup -Inpatient Department

TOTAL FORMS – 487

TOTAL RESPONSES-736

	Percentage	frequency
Referred By A Doctor Outside Apollo Hospitals	26.63	137
Suggested By Friends And Family	20.92	196
Referred By A Doctor From Apollo Hospitals	18.61	88
Others	11.96	63
Health Clinic/Health Camps	8.56	3
Corporate Tie Ups Of Your Company With Apollo Hospitals	6.93	51
Brand Image Of Apollo	4.62	154
Advertisements/Hoardings	1.36	10
Internet/Apollo Website	0.41	34

Inpatient Department

DISTRIBUTION: DELHI/OUTSIDE DELHI

	Percentage Distribution	**Frequency**
People From Outside Delhi	57.29	279
People From Delhi/NCR	42.71	208

Doctor's Offices

TOTAL FORMS- 557

Internet/Apollo Website	26.71
Referred By A Doctor Outside Apollo Hospitals	24.07
Brand Image Of Apollo	16.73
Suggested By Friends And Family	8.42
Referred By A Doctor From Apollo Hospitals	7.46
Corporate Tie Ups Of Your Company With Apollo Hospitals	6.02
Health Clinic/Health Camps	5.66
Advertisements/Hoardings	2.53
Others	2.41

Doctor's Offices

DISTRIBUTION: DELHI/OUTSIDE DELHI

	Percentage distribution	Frequency
People From Outside Delhi	54.75	305
People From Delhi/NCR	45.24	252

ANNEXURE 3

ABC Analysis

A-items	B-items	C-items	
Octopus 4.3 Tissue STA	Liga Clip LT- 200	Prolene 8597	AV Tubing 1/4 X 1/16 X 180
Vessel Shunt (Chase SH	SLS Clip Micro Size	Connector 1/4X1/4 x1/4	Wearon Apron (Plastic A
Prolene 8741H	Monocryl 1326	Thoracic Catheter 32 FG	15 Deg. Stab knife Str
Intra aortic baloon C	vicryl 936H (VCP)	Thoracic Catheter 24 FG	Mersuture 4216
Liga Clip LT -100	PA Catheter 7FR (1147F	CD Bottle with Borosil	Arterial Cannula (7301)
Clear View Blower / MI	Intra cardiac Sucker A	Surgiwear (Trolley COVE)	Face Mask Triple Layer
PM Kit CTVS (BKT - 57)	Cautery Pencil.P-516	Thoracic Catheter 28 FG	Surgical silk R825
Cell Saver (disposable)	PA Catheter (114F7P)	Surgicel 1*2 Fibrillar	Embolectomy catheter 3
Swan GANZ VIP (831/834	Centsteel No6 44mm	Prolene 8718 (W)	Mersilk 5003
Vicryl 947H (VCP)	vicryl 2347 VP	Custom pack (2C22R1) A	Cap (Disposable) 50 PC
Aortic Punch 3.5mm - S	Mersilk 5062	BT Filter 40 Micron	Fentanyl 2 ML
Horizon small clips (0	Prolene 8807(W)	CTVS Drape Set - S&S	L V Vent Catheter (121
Fep - 15 E Cardiac Pack	Centilene 6-0 P8802	Ethilon 3336	Multification defibril
Prolene 8704	PCCS Negative Suction	Prolene 811	PM Line 200CM-Lifelin
Horizon Medium Clips(	Swan GANZ Catheter(TD	Centisilk NW 5334 - CE	Pressure Transducer DO
Prolene 8735H	Oxygenator Affinity	PVC Tubing 1/4 X 1/16 X 12	Quick Prime Lime Doubl
Prolene 812	Gown Disposable - S&S	Connector 1/4X1/4 Life	Centsteel - CM 664 G 40
Surgical Steel MNW 949	Sofnet swab 10*10(PKT)	Prolene 8526 H	Centsteel -CM 662 G40
Prolene 812 NW	Micro Knives (19500-15	Aortic Punch 2.7mm -S	Centilene 5-0 P 8556 A
Prolene 8707	O Flexon (2597-63)	Mistril Blower CAT No	Surgical silk R822

PA Catheter 7FR.110cm	Surgicel 4*8 (W 1912)-J	Surgicel 2*3 (1952)-J&	Ethibond 6936
Cautery Plate 2702M/25	Prolene 8556(W)	Surgicel 3*4NU-KNIT	Fluid Shield fog free
Mersilene Tape RS21	Octopus 4 Tissue Stabi	Bone Wax W 810	Guide wire .025 x 150
Vicryl 945H(VCP)	Fentanyl 10 ML	Centsteel -CM 661 G40	Sutupak 212
Act Tube Actulyke	Sofnet swab 30*30(PKT)	Surgical 6 Steel (2224	Sterillium 500ml-R
PCCS Drainage Bottle W	Centilene P 8704 AB-	Prolene 8935	Sls Clips Small
PM Line 200CM-BLMS	Mersilk 5332	Gamophen-500ml-J&J	Prolene 8304 W
	Spongostan Standard MS	Surgiwear (Trolley COV)	Cautery pencil blue R
		Mersilk 5000	Gasline Filter
		Surgical Steel M 654 G	Morphine 1 Ml 15Mg Inj.
		PM Kit DTX (BKT -21)	Centlon 2-0 CNW 3336-
		Centsteel -CM 664 G40	Connector 1/4*1/4 LL -
		Jugular Drapes set-S&S	Connector 3/8x3/8-LIF
		Pressure Monitoring K I	Microshield 636 Handru
		AV tubing 1/4*594 FT(1	Prolene 8526 W
		Aortic Punch 4.0mm-S	Laryngeal mask classic
		Ethibond 6937	Centilene 4 -0 P 8935
		Liga Clip LT -300	Umbilical Tape W-276
		Electro Surgical ground	Shoe Cover Large-S&
		PM Kit Single (B- KT - 16)	Connector 1/2 x 1/2
		Centisilk NW 5062-CEN	Connector 1/2x3/8-BLS
		Connector 1/4 X 1/4 BLMS	Sutupak 215
		Two Stage Ven. Cannula	Urine culture bottle
		SlS Clip Medium	

HML Analysis :

H-items	M-items	L-items	
Intra aortic baloon C	Surgicel 4*8 (W 1912)-J	Prolene 8704	Connector 1/4X1/4 Life
Oxygenator Affinity	Embolectomy catheter 3	Vicryl 947H (VCP)	Connector 1/4*1/4 LL -
Cell Saver (disposable)	Surgical Steel M 654 G	vicryl 936H (VCP)	Connector 3/8x3/8-LIF
Custom pack (2C22R1) A	PM Kit DTX (BKT - 21)	O Flexon (2597-63)	Mersilk 5000
Octopus 4 Tissue Stabi	Intra cardiac Sucker A	Prolene 8556(W)	Bone Wax W 810
Octopus 4.3 Tissue STA	PM Kit CTVS (BKT - 57)	Spongostan Standard MS	Ethilon 3336
Mersilene Tape RS21	L V Vent Catheter (121	Vicryl 945H(VCP)	Mersilk 5003
Swan GANZ Catheter(TD	Multification defibril	Prolene 8807(W)	CD Bottle with Borosil
Vessel Shunt (Chase SH	Surgical 6 Steel (2224	Prolene 8597	Connector 1/4X1/4 x1/4
Swan GANZ VIP (831/834	Prolene 812	Prolene 8707	Centisilk NW 5062-CEN
CTVS Drape Set - S&S	Prolene 812 NW	Prolene 8718 (W)	Centlon 2-0 CNW 3336-
PA Catheter 7FR.110cm	Centsteel No6 44mm	Cautery Pencil.P-516	Connector 1/4 X 1/4 BLMS
Aortic Punch 3.5mm - S	Quick Prime Lime Doubl	BT Filter 40 Micron	Connector 1/2 x 1/2
Aortic Punch 2.7mm - S	PM Kit Single (B- KT - 16)	Gasline Filter	Connector 1/2x3/8-BLS
Mistril Blower CAT No	Centsteel -CM 661 G40	Liga Clip LT -300	PM Line 200CM-BLMS
Aortic Punch 4.0mm-S	Centsteel -CM 664 G40	Centilene P 8704 AB-	PM Line 200CM-Lifelin
Surgicel 3*4NU-KNIT	Centsteel - CM 664 G 40	Prolene 8935	Mersilk 5332
Clear View Blower / MI	Centsteel -CM 662 G40	Monocryl 1326	Centisilk NW 5334 - CE
PA Catheter (114F7P)	Micro Knives (19500-15	vicryl 2347 VP	Surgiwear (Trolley COVE)
PA Catheter 7FR (1147F	Prolene 8741H	Ethibond 6937	Mersuture 4216
Two Stage Ven. Cannula	Pressure Monitoring K I	Surgical silk R825	Fluid Shield fog free
Arterial Cannula (7301)	Prolene 811	Centilene 6-0 P8802	Surgiwear (Trolley COV)
Surgicel 1*2 Fibrillar	Horizon Medium	Centilene 5-0 P 8556 A	AV tubing 1/4*594

	Clips(		FT(1
	Prolene 8735H	Liga Clip LT- 200	Umbilical Tape W-276
	Surgicel 2*3 (1952)-J&	Liga Clip LT -100	Jugular Drapes set-S&S
	Horizon small clips (0	15 Deg. Stab knife Str	Fentanyl 2 ML
	Guide wire .025 x 150	Surgical silk R822	AV Tubing 1/4 X 1/16 X 180
	Fep - 15 E Cardiac Pack	Gown Disposable - S&S	Sutupak 215
	Surgical Steel MNW 949	Prolene 8526 W	Sutupak 212
	PCCS Drainage Bottle W	PVC Tubing 1/4 X 1/16 X 12	Morphine 1 Ml 15Mg Inj.
	Prolene 8526 H	Laryngeal mask classic	Shoe Cover Large-S&
	Cautery Plate 2702M/25	Ethibond 6936	Wearon Apron (Plastic A
	Electro Surgical ground	Centilene 4 -0 P 8935	Sofnet swab 30*30(PKT)
	Pressure Transducer DO	Cautery pencil blue R	Urine culture bottle
	Prolene 8304 W	SLS Clip Micro Size	Face Mask Triple Layer
	PCCS Negative Suction	Thoracic Catheter 32 FG	Sofnet swab 10*10(PKT)
		Thoracic Catheter 24 FG	Cap (Disposable) 50 PC
		SlS Clip Medium	Gamophen-500ml-J&J
		Thoracic Catheter 28 FG	Microshield 636 Handru
		Sls Clips Small	Sterillium 500ml-R
		Fentanyl 10 ML	
		Mersilk 5062	
		Act Tube Actulyke	