Summer Training at
Fortis Hospital,
Noida

Time Motion Study to Probe in the Reasons for Delay in Delivery of Inpatient Pharmacy Indents

By
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Under the guidance of
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MBA Hospital and Health Management
2015-2017

The IIHMR University, Jaipur
2016

INSTITUTE OF HEALTH
MANAGEMENT RESEARCH
(WHO Collaborating Centre for District Health System Based on Primary Health Care)

IIHMR UNIVERSITY

CERTIFICATE

This is to certify that, **Dr. Harioum Sharma** student of MBA in Hospital and Health Management from The IIHMR University, Jaipur has undergone summer training at **Fortis Hospital, Noida from 1st April 2016** to **31st May 2016.**

The candidate has successfully carried out the study designated to her during summer training and her approach to the study has been sincere, scientific and analytical.

The summer training is in fulfillment of the course requirements.

I wish him all success in all her future endeavors.

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Manpower Development Programme

This certificate is awarded to

Dr. Harioum Sharma

In recognition of having successfully completed ~~her~~ his
Internship in the department of

Fortis Operating System

From

1st April 2016 – 31st May 2016

At Fortis Hospital, NOIDA

~~S~~he comes across as a committed, sincere & diligent person who has a strong drive & zeal for learning

We wish ~~her~~ him all the best for future endeavors.

Smita Angrish
Manager –Human Resources
Fortis Hospital, Noida

Acknowledgement

Any attempt of any level cannot be a success without the support and direction of learned people. A heartfelt gratitude to Mr. Gagan Seghal (Zonal Director) and Dr. Mehar Kumar Bedi(Medical Superintendent), at Fortis Hospital, Noida, for giving us the opportunity to work with the India's Leading Healthcare Provider. We would like to express our immense gratitude to our mentors (Dr. Shanu Sharma, Ms Preeti Goswami, Mrs Ajitha Nair and Mrs.Joyshree) for providing support and guidance for our learning the in the hospital and for directing our goals and objectives towards the attitude that derives to achieve excellence.

Our heartfelt gratitude to Mr Pradeep Singh (Head HR) and Ms. Smita Roy Angrish(Assistant Manager HR)for showing keen interest in our training, helping us to plan our agenda despite their busy schedule. We would also like thank all the staff who helped us in our Endeavour .

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Table of Content

Abbreviation

FOS – Fortis operating system

GRN – Goods receipt number

PCS – Patient care services

ROL – Reorder level

UHID – Unique hospital identity

ICU – Intensive care unit

HDU – High density unit

TPA – Third party administrator

PHC – Preventive health checkup

OT – Operation theatre

CSSD – Central sterile supply department

SICU – Surgical ICU

MICU – Medical ICU

NICU- Neonatal ICU

LR – Labour room

HOD – Head of department

HIS – Hospital information system

IVF – Intravenous fluid

In vitro fertilization

CTVS – Cardiothoracic vascular surgery

CCU – Cardiac care unit

OPD – Out patient department

TAT – Turnaround time

CBC – Complete blood count

ECG – Electrocardiography

TMT – Tread mill test

CXR – chest x ray

PFT – Pulmonary function test

KFT –kidney function test

LFT – liver function test

BUN – Blood urea nitrogen

USG – Ultrasonography

AEC – Acute eosinophilic count

IPD – Inpatient department

IT – Information technology

MRD – Medical record department

STEMI-ST elevated myocardial infarction

Observational Learning

1.0 Introduction

Summer training is an integral part of MBA in Health and Hospital Management. We have completed our first year and as part of the curriculum, the students are required to undergo a two months training in a hospital. The main purpose is to get oriented to the layout, operations and workflow of the hospital.

We got the golden opportunity to work in Asia's leading Healthcare provider, Fortis Group of Hospitals. We started our summer internship from 1st April in Fortis Hospital, Noida.

Objectives

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

1.1 Background

Fortis healthcare limited is a frontrunner healthcare service provider in India. The healthcare verticals of the company include Hospitals, Diagnostics and Daycare specialty facility.

The company has multinational presence in 54 countries like India, Sri Lanka, and Dubai and Mauritius with 10000 potential beds and 260 diagnostic centres.

Its flagship Fortis memorial research institute (FMRI) was ranked no-2 by 'Top master healthcare.com'

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

"*To create a world class Integrated Health Care delivery system in India, entailing the finest medical skills combined with compassionate patient care*"

Fortis Hospital, Noida was inaugurated on 7th November 2004, which is centre of excellence in Neuroscience, Orthopaedics, bariatric, cardiac sciences, minimally access surgery, and oncology. The Hospital is built over an area of 5.53 acres. Total Build up areas is 220,000 sq. ft with patient centric design by Kaplan Mc Laughlin Diaz (KMD), USA. This allows far flexibility to adapt and accommodate future trends of patient care.

Fortis Hospital, Noida is the Hub where some of the best medical professionals provide quality medical treatment catering to the special needs of patients and their families. The Hospital has been designed and developed to deliver patient care with maximum ease warmth and effectiveness.

Fortis Hospital Noida has also achieved many first to its name:

1. NABH Accredited Hospital In U.P
2. NABH Accredited Blood Bank in U.P
3. NABH Accredited Lab Services in U.P

Mission

- To become an integrated Healthcare delivering organization guided by quality, excellence, technology, and compassionate care.
- To establish Fortis Hospital Noida as a major corporate hospital, in healthcare delivery system in the region.

Vision

Globally Respected Health care organization recognized for clinical excellence and distinctive patient care

Values

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

1. Patient Centricity
2. Integrity
3. Ownership
4. Teamwork
5. Innovation

Fortis Logo

Brand logo is a synthesis of human values of trust, ethics, service and quality healthcare.

The integration of hands (in a distinctive green with a red dot) and the human figure is representation of "Fortis" responsive approach to healthcare

1.2 Committees in the Hospital:

1. Quality steering Committee
2. Hospital Infection Control Committee
3. Safety Committee
4. Sentinel Event Committee
5. Blood Transfusion Committee
6. Code blue Committee
7. Pharmacy and therapeutic Committee
8. Medical Audit Committee
9. Research and Ethics Committee
10. OT Committee
11. MRD Committee
12. CME Committee
13. Purchase Committee
14. Condemnation Committee
15. Morbidity and Mortality Committee
16. Credentialing and Privileging Committee

2.0 Infrastructure

2.1 Super-Specialty

Anaesthesia	Nephrology and Dialysis
Blood Bank	Neurology
Cardiology	Neuro Surgery
Critical Care	Oncology
Dentistry	Ophthalmology
Dermatology	Paediatrics
Emergency Medicine	Physiotherapy
ENT	Plastic Surgery
Endocrinology	Psychiatry
Gastroenterology	Psychology
General Surgery	Pulmonology
Gynaecology and Obstetrics	Radiology
Internal Medicine	Rheumatology
IVF /Bloom Fertility centre	Thoracic surgery
Music Therapy	Urology
Neonatology	Transplant surgery

2.2 Hospital Layout

S.NO.	LOCATION	AREA
1	Atrium area	Main Reception, Billing, Cashier, Travel Desk,Counsellor Office, TPA cell, Telemedicine
2	Basement	Administration, Blood Bank, IP pharmacy, SRL lab, IVF Centre, Staff Cafeteria, CSSD, Purchase, Nutrition, Mortuary, Security, I.T, Engineering, Kitchen, Housekeeping, Store.
3	IPD Block- Ground Floor	International patient services, Diagnostic Appointment Desk, Radiology (MRI, 64 Slice CT, PET CT, X-Ray, Ultrasound, Mammography, Dexa Bone Densitometry), Report Collection Room
4	IPD- First Floor	Chief of Nursing, Patient rooms,HDU,Sleep Lab, Video EEG
5	IPD- Second Floor	Intensive Care Unit-NSICU, MICU, Liver Transplant ICU, CTVS ICU
6	IPD- Third Floor	Patient Rooms, Labour Room, Neonatal ICU,SICU, Paediatric ICU
7	IPD- Fourth Floor	Patient Rooms, Cardiac Care Unit (CCU), Cardiac Cath Lab
8	IPD- Fifth Floor	Presidential suite, deluxe suite, Patient Rooms, Liver Transplant ICU, Bone Marrow Transplant UNIT
9	OPD Block- Ground Floor	Patient Care Services, OPD Billing, Pharmacy, New Ward, CCD, Sample collection Room, General Surgery,Cardiology,Cardiac Procedure,Physiotherapy,Preventive Health Check-up desk
10	OPD Block- First Floor	Dialysis, EMG,EEG,TCD,Endoscopy Room, Patient Welfare Department,Audiometry, ECHS help desk, oncology day care ward
11	OPD Block- Second Floor	PAC Room, Operation Theatres, Neuro Cath Lab, Library, Human Resource Department, Auditorium

3.0 Data Collection

Data collection method involves 2 types of sources –

a. Primary source
b. Secondary source

Primary sources of data –

1. Through interaction with HOD, In charge, Executives and other members of the staff.
2. Through direct observation.

Secondary sources of data –

1. Through various records of hospital.
2. Through online website “www.fortishealthcare.com
3. Through various written documents of hospital like pamphlets, booklets and other documents.
4. Through internet.

4.0 Bed Layout

Breakup of Beds-

1. Single Room
2. Twin Sharing
3. Deluxe Suite
4. Ward

- **Census Bed**

An official count of patients admitted to the hospital facility by midnight

Number of Census Bed-191

- **Non Census Bed**

Beds which are not counted in the census

- New Ward-4
- Neonatal ICU
- Oncology-Day Care-17
- Dialysis-12
- Cath lab
- Labour Room
- CSICU-9
- Neurosurgical ICU-15
- Medical ICU-17
- Surgical ICU-6
- CCU-4
- Paediatric ICU-4

5.1 Monthly Data For performance evaluation

- CPR analysis
- FOS Data (Fortis Operating System)
  Performance Evaluated in Various Department using certain parameter for efficient functioning
- MOS (Medical Operating System)
- NSI(Needle Stick Indicator) Reporting
- Quality Indicators
- Code STEMI/Code Fast (Clinical pathway)

6.0 Department Profile:

6.1 Operation Theatre

Functions

- To perform surgery in a sterilized environment
- To Take care of the patient pre and post-surgery.
- Follows WHO Checklist to ensure patient safety
- Operation Theatre Booking
- Scheduling of booked cases

Location: - 2nd Floor (Near to ICUs and Triage area)

Number of OTs-8 (7 Major + 1 Minor)

Types of OTs

- Orthopaedics
- Cardiac
- Neurology
- Transplant
- General surgery
- Obstetrics and gynaecology

Zoning

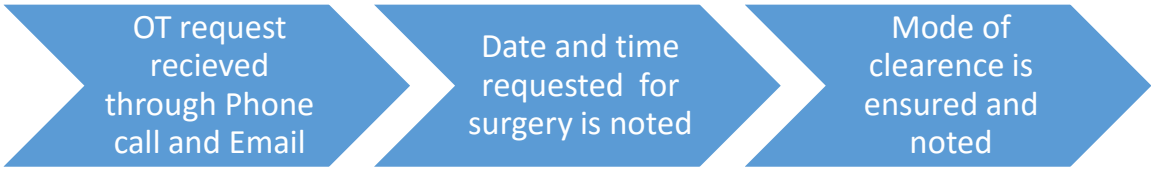
- Protective Zone- Pantry, Transfer Corridor
- Clean Zone- Reception, Recovery

- Sterile Zone-Scrubbing and Gowning, Operating Room, Store, Sterilizer
- Disposable Zone-Disposal of waste, washing ofequipments.

Daily and weekly volumes of special equipment

- C-arm
- Laser

OT Booking (First come First Basis)



OT Process for OPD

Doctor's Prescription

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Admission Procedure

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Financial Clearance

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Investigation

↓

Surgery time given according to slots available

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PAC Clearance to be done

6.2 Intensive Care Unit

- Close observation and monitoring of critically ill patients.
- Specialized care for specialized cases round the clock
- Advanced respiratory support alone or basic respiratory support together with support of at least two organ systems.
- Administration of Life saving and High risk drugs under close monitoring.
- Multi-Disciplinary treatment for Critical cases

Location- 2nd Floor

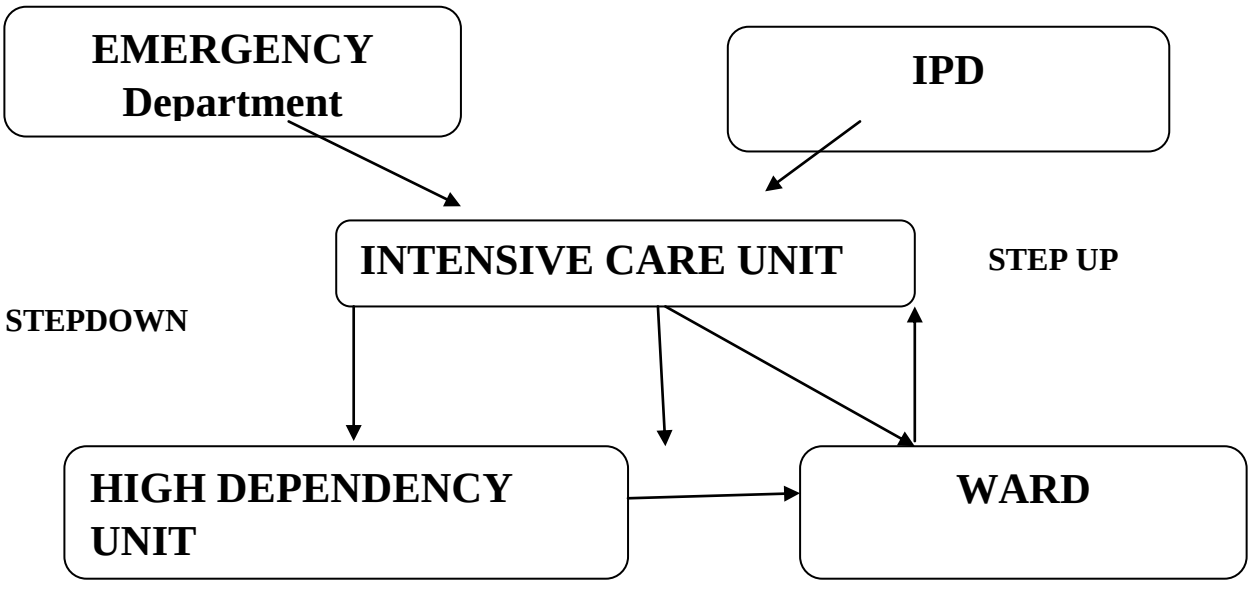
Types of ICUs

1. Cardiac Care Unit
2. Neurosurgical ICU
3. Medical ICU
4. Transplant ICU
5. Paediatric ICU
6. Cardiothoracic ICU
7. Neonatal ICU
8. Surgical ICU

Quality Indicators

- **CLEBSI**(Central line blood stream infection**)**
- **CAUTI**(Catheter associated UTI)
- **VAP**(Ventilator associated pneumonia)

Patient flow in ICU



6.3 Marketing Department

- Branding and promotion of the Hospital
- Online Marketing through Website
- Corporate Liasoning
- Preparing Brochures and pamphlets
- Conducting health awareness programmes in the Hospital
- Interview and Press Conferences of Experts

6.4 Dietary and Nutrition

- Following Food and Beverages standards
- Outpatient diet counselling
- Customizing patient diet
- Checking the quality of grocery items as per standard specification
- Procuring food items lasting 3 weeks
- Providing Room service to attendants
- To educate all inpatients during Hospitalization and at time of discharge for therapeutic diet.
- Extending Service during guest visit, workshop, and important meeting

Kitchen

Area-4000 sq. ft.

- Chamber for management
- Separate washing Area
- Main Kitchen Area
    1. Bulk Area- preparation of food in large amount
    2. Patient Meal preparation Area
    3. Baking Area
    4. Packing Area- food is packed and assembled in trolley
- Vegetable Cutting Area
- Refrigerator (4-8 c)
- Store- Daily stock of fresh fruits and vegetable
  10-15 days storage of perishable items

6.5 Housekeeping

- Undertakes following departments
- Consumables
- Housekeeping manpower
- Horticulture
- Patient linen
- Laundry
- Cleaning and Biomedical Waste Management

6.6 CSSD

- To make sterilized articles available throughout the patient care areas
- Ensure proper functioning of sterilizers using various quality indicators
- Processing and Sterilizing syringes, rubber goods, surgical instruments, trays, sets and dressings etc.
- Temperature for Sterilization
  ETO (37,55) C
  Steam (134,121) F

Quality Indicators

1. **Biological Indicator Test**

   Spores are kept in:

   ETO- each load

   Steam sterilizer-each week

   In every implant

2. **Physical**

   134 F, Dry sterilization

3. **Chemical**

<u>Autoclaving</u>

Steam

1. Linen(7 days shelf life).
2. Surgical instruments(1 month)
2. Medical grade paper (3 months)

ETO items(1 year)

6.7 TPA

- Gets pre authorization from the insurance companies for approval of the estimate given for client specific treatment.
- Facilitates the insurance claims for the client.

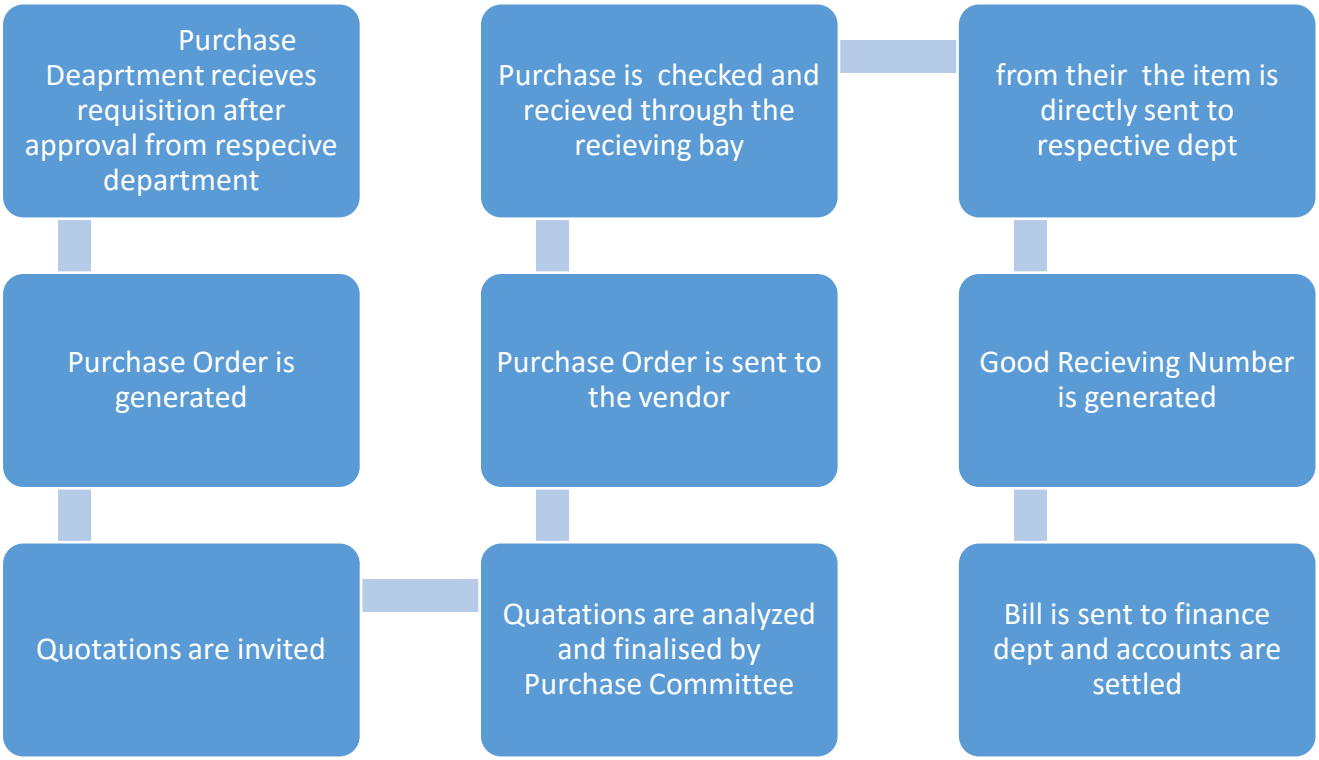
6.8 Store and Purchase

Functions

- Store receives all equipment, instruments, and raw materials, consumable, stationary, medicines, and other essential goods required by the hospital.
- Movement of store through ABC and FIFO
- Procurement of stores through vendors
- Negotiating contracts from vendors
- Issuing purchase order
- Quotation for new purchase
- Repairing of faulty equipment
- Serving as an information centre for material management

Purchase Heads:

1. Drugs
2. Consumables
3. Others(Including all machinery)



6.9 Engineering and Maintenance

Functions-

- Maintaining electrical and water supply
- Air Conditioning
- Storage and supply of Medical Gases
- Treatment of waste water.
- 3 monthly checking of pipelines

- **Medical Gases are stored in cylinders color coded as-**

  O2- White

  N2- Black

  CO2- Silver

- **Manifold Room**

  Pipelines are also colour coded according to the gases-

  Nitrous oxide-French Blue

  Medical Air-White

  Yellow-Vacuum

Daily Oxygen Consumption- 1200 Litres

- **Compressor Room**

  Air compressors-3

  Vacuum Compressors-3

- **Water Treatment Plant**

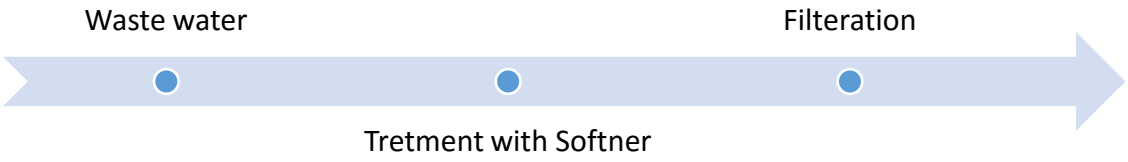
  There are:-

  - 6 tanks with 1 lac litre and 2 with 5 lac litre capacity
  - Two tanks for Raw water supplied from Noida Authority
  - Two tanks for soft water

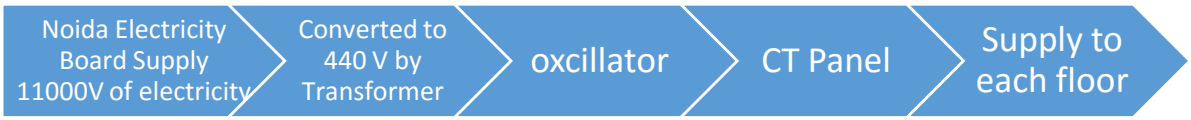
  - **Filters used:**

❖ MGF(Multigrade Filter)
❖ ACF(Activated Carbon Filter)
❖ Softeners

  - **Waste water Treatment**

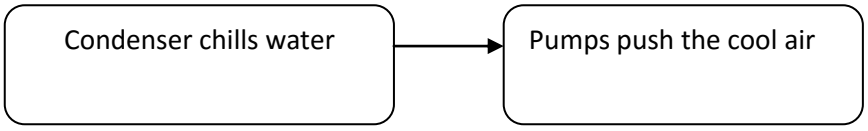


- **Electricity Supply**



- Electricity Backup- Generator (750 KV)
- Each department has its own UPS supply

- **High Ventilation Air-conditioning**
  3 Chillers- 300 TR, 200 TR, 400 TR(Capacity)



Maintenance:

- Electricity Panels are checked every month
- Pumps, motors, UPS are checked quarterly

6.10 Medical Record Department

- Storage and Maintenance of medical records by following standard SOPs
- Obtaining missing patient files
- Maintaining integrity and confidentiality of medical records
- Classifying the medical files as per ICD-10 and arranging and storing them according to IPID
- Submitting required data (Notifiable disease, death, birth etc.) to government.

Shelf Life of Medical Records

Normal Cases-6years

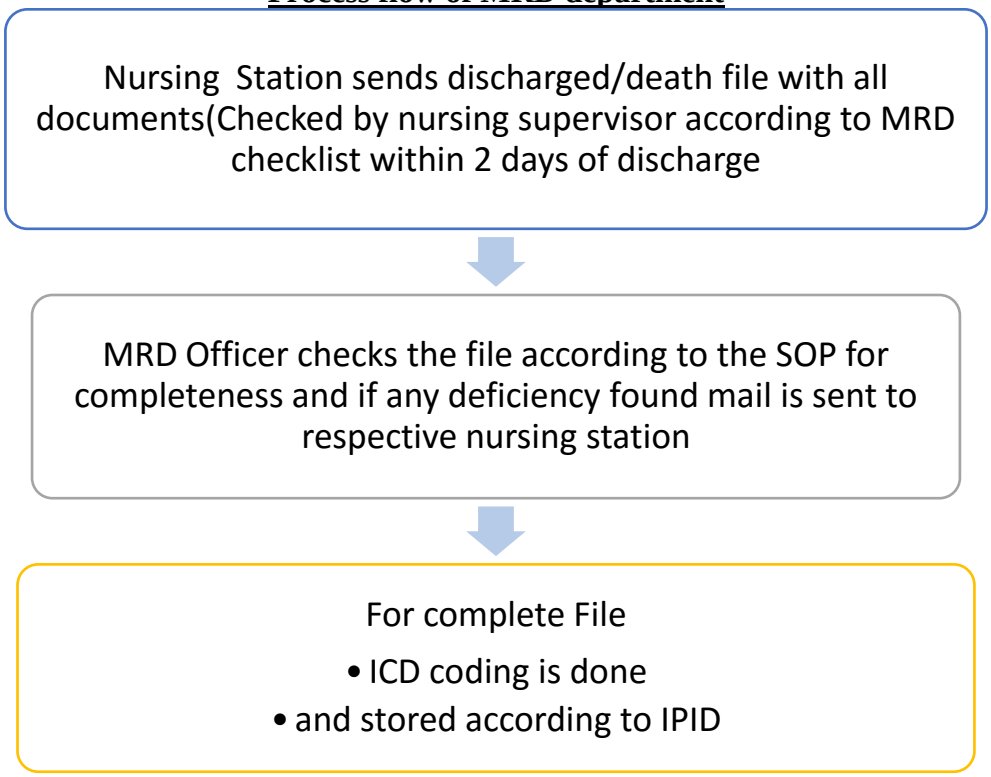
MLC/Death-10 years

Paediatric-Up to 21years of age

Transplant cases- 15 years

Court case-Until the Case is settled in court + 3 years

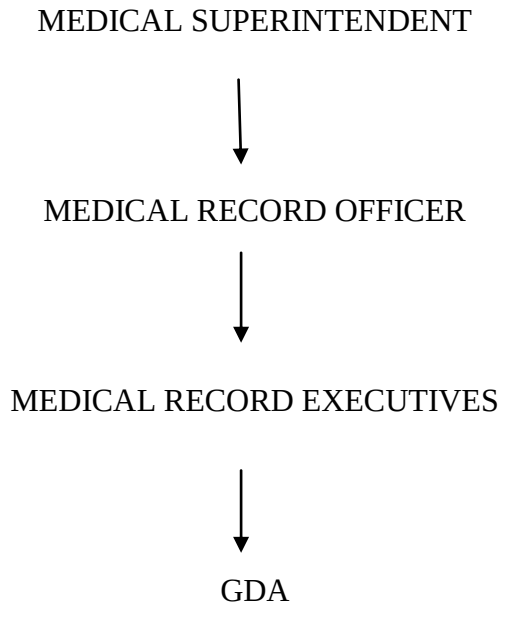
Process flow of MRD department



Retrieval Policy

- **Proper Requisition format is to be filled**
- **Requisition should be signed by MS/MRD officer**
- **File to be returned within 7 days**

ORGANOGRAM



6.11 Blood Bank

- Functions under licenses given by the Local authority (Noida) and State(Lucknow)
- Conducts counselling and Physical examination for Donors.
- Collection, Processing and Storage of Blood and Blood Products.
- Issuing and Transportation of Blood

6.12 Pharmacy

- Controlling and dispensing of drugs
- Communication with physician, nurses, and other clinical staff
- Quality and stock out management of drugs
- Storage of drugs and expiry management
- Procurement and Inventory management
- Ensuring rational and safe drug use.

Quality indicators of pharmacy –

1. Indent delays
2. Stock out
3. Cash purchase

Fortis pharmacy workflow-

Doctor prescribes medicine on IPD notes sheet → Nurses note down the same on requisition slip

↓

Computer operator makes entry of medicine through software (INDENT)

↓

Indent shows on pharmacy computer

↓

Pharmacist approves it on the availability of medicines

↓

Takes print out of approved list

↓

Pharmacist withdraws medicines from the store

↓

Supervisor checks the medicines

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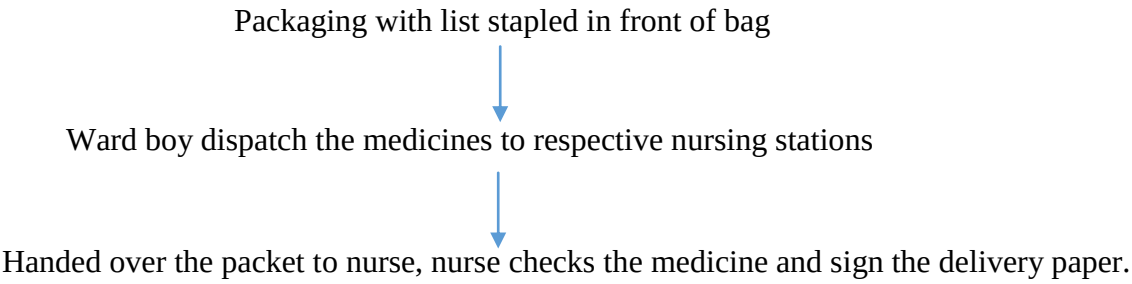


- Types of Pharmacy Indents
  1. Stat Indent(to be dispensed within 30 mins)
  2. Normal indent (to be delivered in 120 mins)
  3. New admission indents(to be delivered in 30 mins)

6.13 Preventive Health Check Up

- Reception of patient and counselling regarding various health packages.
- Billing of health check-up package
- Guidance and coordination of patient to various departments
- Collection and assembling of all investigation reports
- Facilitation of physician consultation for discussion on findings of report.
- Addressing Grievances regarding PHC department

6.14 IT Department

Deal with hardware, software, network and telecom

- Hardware-CCTV cameras, TV, telephone, Computers, printers, etc.
- Software-HIS (Hospital Information System-25 Modules/applications)
- Network-Intranet
- Telecom-Intercom

6.15 Admission Department

Functions

- Counselling before admission.
- Admission of patient
- Coordination with bed manager
- Coordination with doctors about allocation of code of surgeries and other queries.

- Running bill counselling and top up payments.
- Coordination with TPA departments

Types of Admission:

1. TPA
2. CASH
3. ECHS/CGHS/NTPC
4. Credit

6.16 Dialysis

- OPD and IPD facility for dialysis
- OPD Timings- 6:30am to 8pm
- IPD Timings- From 8pm or Whenever required

Infrastructure

1. RO room/Water Treatment room
2. Training room
3. Wash room
4. Store

Number of Dialysis Units- 15

Number of Beds-16

Average number of dialysis per day (OPD) - 45

PROJECT- A time motion study to probe in the reasons for delay in delivery of inpatient pharmacy indents.

Introduction-

The definition of pharmacy says- “the art, practice, or profession of preparing, preserving, compounding, & dispensing medical drugs.

Inpatient pharmacy is a vital organ of modern day hospital, both in terms of delivering the complete healthcare servicesand in revenue generation.

According to the minutes of a WHO meeting held in 1988, nowhere is the need for this infrastructure more evident in the day-to-day management of patients than in the provision of essential drugs. Indeed effective medicines can be practiced only when there is efficient drug management.

The inpatient pharmacy is unique in a number of ways. They deal with more complicated and wide range of patients than the OPD pharmacy deals with. Staff pharmacists have variety of responsibilities including dispensing medicines, making purchase decisions, working on quality indicators of pharmacy, coordinating with other departments of hospital.

The location and layout can vary greatly among healthcare systems. Some pharmacies can be –

1. **Centralised**- Where all pharmacy staff and equipment are located in a single area of hospital.
2. **Decentralised**- There is a main pharmacy in a central location but also ‘mini pharmacies’ called *satellites* located at various sites within the healthcare system.

Inpatient pharmacy interacts with all professionals within healthcare system but do not interactdirectly with patients.

Fortis pharmacy workflow-

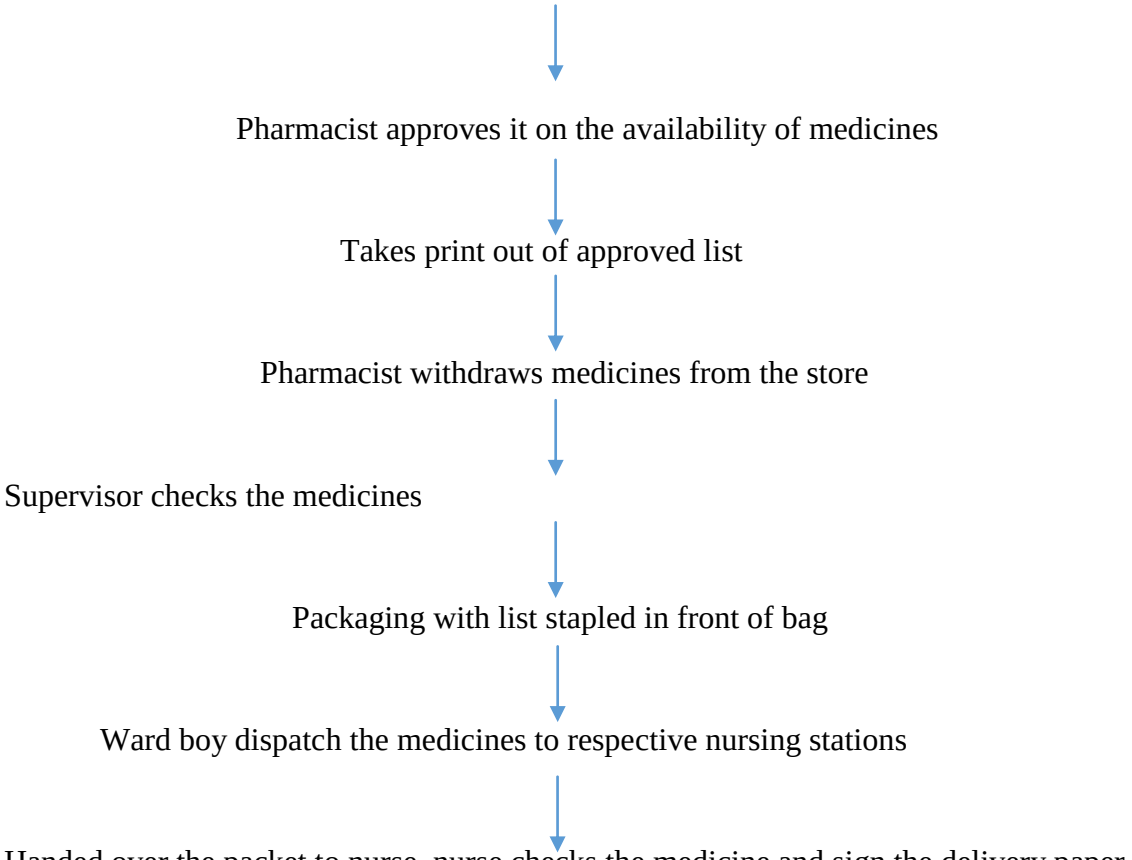
Doctor prescribes medicine on IPD notes sheet → Nurses note down the same on requisition slip

↓

Computer operator makes entry of medicine through software (INDENT)

↓

Indent shows on pharmacy computer



REVIEW OF LITERATURE-

Efficient functioning of inpatient pharmacy is essential for effective delivery of healthcare system. This can lead to lesser medication error, timely delivery of medicines, stock management, better and interdepartmental coordination, patient satisfaction, branding and image enhancement of healthcare system.

According to S.A. Kuiper, the inpatient pharmacy component of the medication-use process is complex & error prone.

Inpatient pharmacies are primarily involved in the preparation and dispensing of medications, and associated process occurs in three steps:

1. Interpretation and transcription
2. Preparation
3. Delivery

In addition to these functions, pharmacy is responsible for controlling the dispensing of drugs, communicating with physicians, nurses and other staff and ensuring rational and safe drug use.

According to mark J. Makowskywhile collaborative, team based care has the potential to improve medication use and reduce adverse drug events and cost, less attention is paid to understand the process of well-functioning teams. Pharmacists experience highs (developing trusting relationships and making positive contributions to patient care) and lows (struggling with documentation and workload) during integration into the medical care team.

RATIONALE

Inpatient pharmacy is an important stakeholder in effective treatment, timely discharge, value addition and revenue generation in a hospital.

So for efficient functioning, time motion study is important to find out possible delays, bottlenecks and finding solutions to the originated problems.

OBJECTIVE

General- Time motion study of various processes happening in the pharmacy.

Specific – To find out various delays and bottlenecks in pharmacy functioning and providing solutions to check them.

METHODOLOGY-

Location – basement

Study area- Fortis hospital, Noida.

Study population- Normal indents, Stat indents and First admission indents from the various department of hospital to IP pharmacy.

Sample size- Normal indent – 103

Stat indent- 90

New admission- 53

Study method- A prospective time motion study carried out on various indents received, further processing and dispensing of medicine to nursing station to determine the possible delays.

Indents are received on software from various departments of Hospital. This software shows indents in three different colours – RED (stat), BLUE (normal indents), and PURPLE (new admission).

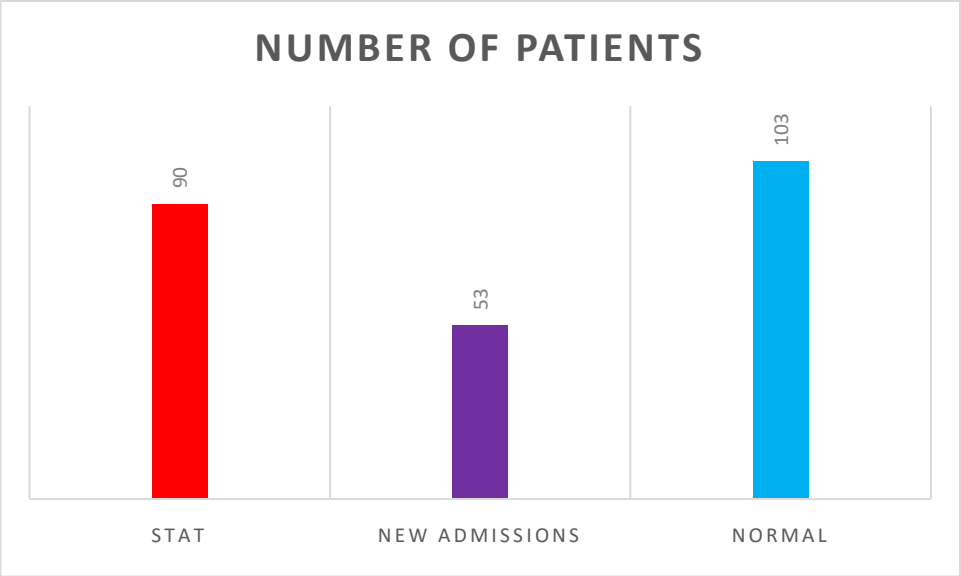
Each process is observed and time taken in each process is noted down, these data is filled in excel sheets, then analysis is done based on percentages.

Data collection tools – By observation

Sampling method – non probability purposive sampling

Time period – 11th April to 25th April

Study type – Descriptive



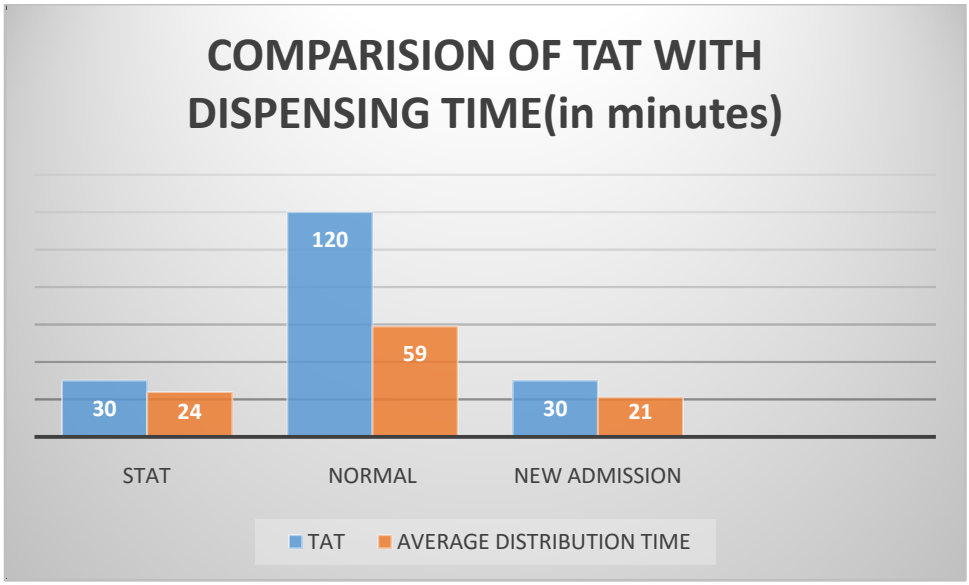
TAT –

Turnaround time here is from indent reception in pharmacy to physical delivery of medicines to nursing stations.

Fortis Hospitalhas given TAT for pharmacy indents as-

Stat and New admission – 30 minutes

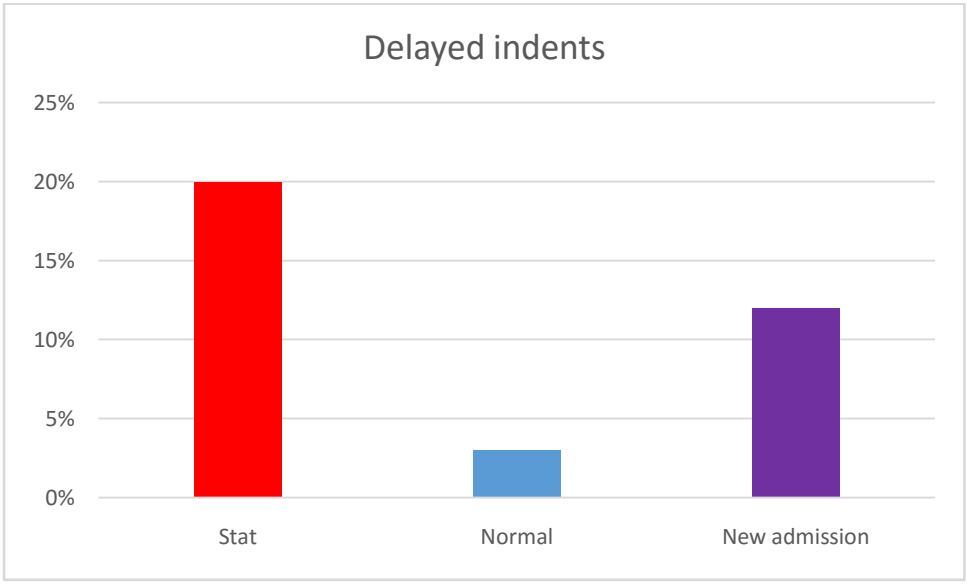
Normal indents – 2 hours.



Results and discussion –

Yet average indent time was reduced compared to TAT time but there was delay in some of indents.

1. 20% (19 out of 90) STAT Indents are delayed against TAT of 30 minutes for STAT indents. 70 % (13 out of 19) of them are delayed only by less than 10 minutes.
2. 12% (7 out of 53) NEW ADMISSION indents are delayed against TAT of 30 minutes.
3. 3% (3 out of 103) NORMAL INDENTS are delayed against TAT of 2 hours for normal indents.



Reasons for delays-

TECHNICAL REASONS-

1. Printer not working, leading to delay in receiving printout for issuing indents.
2. Sometimes indent making software hangs and do not work on its normal pace, leading to accumulation of indents and making further delays for further processing.

HUMAN RESOURCE RELATED REASONS -

3. Delivery boys are busy in some other work, like- bringing medicines from stores (stock), outside purchases.
4. Supervisor who checks medicines before packing is busy sometimes in vendor's supplies checking (medicine), Narcotics issues.

OTHERS -

5. Increased number of normal indents after Doctors round timings (10- 11 am)
6. Some indents were delayed by one day because of unavailability of packing bags.

Recommendations –

1. Shift wise check-up of printers should also be done by pharmacy staff before taking over the charge during shifts to avoid hassle. Also computer system and printer maintenance should be arranged on weekly basis.
2. Work of delivery boys should be more arranged so as to complete the work in same resources and at the same time avoiding delays. Like bringing of medicine and other work should be done in free time or before 9 am or 2- 3 pm.
3. Vendors meeting should be arranged in less rush time and another person should assist medicine check (may be pharmacy incharge) during narcotics issue time.
4. Packing bags and other stationary should be availed well in advance and a record of their consumption should be maintained so as to avoid shortage.

Conclusion-

Beisdes Pharmacy staff's efficient working, there was delay in some of its indents especially stat indents because of reasons explained above, which can be a cause for embarassment for pharmacy deprtment. So these reasons should be focussed and improvement on these can be done.

Project-2

A time motion study to find out delays in preventive Health check-up department.

Introduction-

The prevalence of non-communicable diseases is increasing throughout the world. More so, in the developing countries developing countries.In many cases, these diseases can be detected early through regular check-ups and through early detection, morbidity and mortality can be reduced.

Therefore, the idea of PHC is to avoid severe health complication, which could also take a toll on your biological as well as financial health.

Types of packages offered-

1. **Deluxe package**
2. **Cardiac package**
3. **Whole body package**
4. **Basic package**
5. **Well women package**
6. **Asthma assessment package**
7. **Various corporate packages**

DELUXE	**CARDIAC**	**WHOLE BODY**	**BASIC**	**WELL WOMEN**	**ASTHMA ASSESSMENT**
History	CBC	History	History	Blood sugar (F)	Urine routine
Blood sugar(F)	Blood sugar (F)		CBC	Urine routine	Haemogram with ESR
Lipid profile	Lipid profile	CBC	Lipid profile	Serum creatinine	AEC
Serum creatinine	Urine routine	Blood sugar (F)	Urine routine	Serum calcium	Platelets
Blood group and Rh typing	PFT	Lipid profile	PFT	Serum phosphorus	PFT
Pap smear for female	TMT	Urine routine	TMT	Blood group & Rh typing	CXR PA
PSA for males	ECG	Serum creatinine	ECG	BUN	X RAY PNS “waters view”
Stool occult blood	ECHO	BUN	ECHO	PAP smear	Chest consultation
Hemogram with ESR	CXR PA	PAP smear for female	CXR PA	Haemogram with ESR	Breakfast
Hbs Ag	Cardiac consultation	PSA for male	Cardiac consultation	B/L mammography	
KFT	Diet	LFT	Diet	CXR PA	

	counselling		counselling		
LFT	Breakfast	TMT	breakfast	USG Pelvis	
TSH		ECG		Gynae consultation	
B/L Mammography		CXR PA		Breakfast	
PFT for male		PFT for male			
TMT		B/L Mammography for female			
ECG		USG			
CXR PA		Gynae consultation			
USG		Physician consultation			
Gynae consultation		Diet consultation			
Physician consultation		Eye consultation			
Diet counselling		Dental consultation			
Eye consultation		Breakfast			
Dental consultation					
Breakfast					

Process flow –

Patients book prior appointment through phone or e mail / walk-in

↓

PHC coordinator counsels the patient for desired / various packages and preparation for them.

↓

Registration of patients who are not registered with Fortis

↓

Billing

↓

Guiding the patient towards various departments for investigations and helping them to reduce waiting time.

↓

Breakfast (provided by Hospital) after USG and TMT

Collection of reports by PHC coordinators after all the investigations done.

Consultations

Feedback collection

Review of literature-

According to WRF staff, "one aspect of preventive healthcare is finding and treating disorders as soon as possible". Many diseases can be caught early and hence can be treated. So it's important to get aware about illnesses and their symptoms and way to maintain good health.

DR. Sreenivasan Raju said "meaningful health check-up has three important factors-

a. They need to be targeted and specific to age, sex and other factors.
b. The number and frequency of tests need to be determined by established experience and in compliance with international guidelines.
c. Avoid physical harm by doing unnecessary test that may involve admission.

Rationale –

Besides the need of PHC department for various health package offerings to the patients for satisfying their need of preventive health, it also is important for hospital from point of view of revenue generation and corporate relations, thus increasing business chain. Diagnostics are also major areas of revenue generation for hospital. Therefore efficient functioning of this department can lead to greater satisfaction among patients and eventually leading to bigger customer generation and business expansion.

Objective –

1. Time motion study of each process in PHC department.
2. Finding delays and solutions in the process flow.

Methodology –

Location – Ground floor near the OPD reception.

This study is based on observation of patients and following them to the departments. Total of 55 patients were observed.

Study area – Fortis hospital Noida.

Study population – Deluxe, whole body, cardiac, basic, well women and corporate packages.

Sample size – 55 patients

Study methods – Prospective time motion study in PHC patients.

Data collection tool – Observational

Study type – Descriptive

Sampling method – purposive non random sampling

Sampling period – 26th April to 17th May

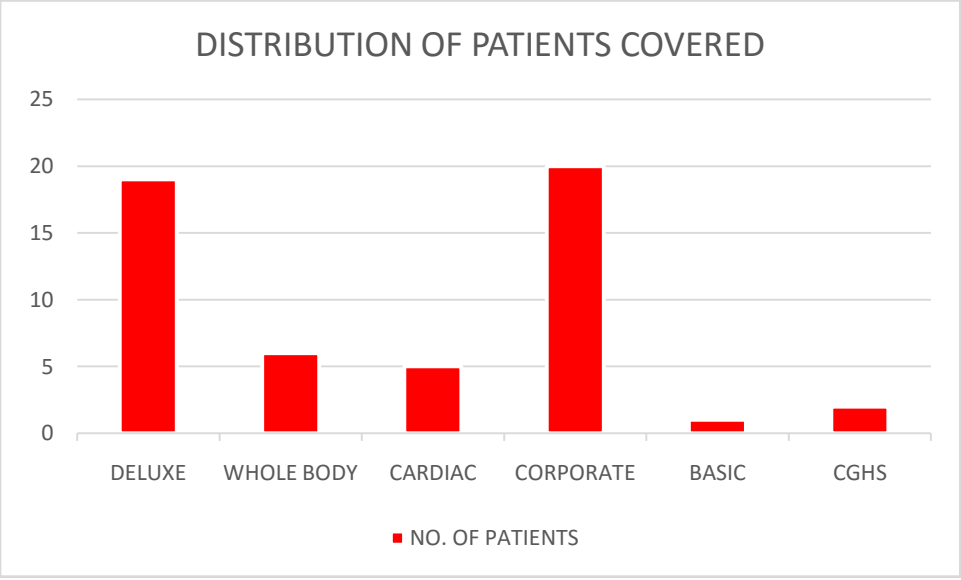
TAT given by fortis Hospital for whole process- four hours and thirty minutes

Patients were followed daily from the time of arrival to the various department visited during investigations and lastly till the physician consultation. These timings were noted down on paper under separate headings like (arrival time, billing time, each departments reporting time, in time and out time.)

These entries were entered into excel sheets and a master data sheet was made. From this master data sheet, package category wise data was filtered and separate sheet was made according to category. Time taken by each department was calculated by subtracting reporting time from IN time.

Then average time taken was calculated by average using excel functions.

Then analysis of data was done department wise.



Deluxe package –

Total patient observed – 19

Booked patients – 12

Unbooked patients – 7

Outliers – 3 (outliers are those conditions which does not come under purview of organisational norms, which are defined by the organisation only, like if somebody wants to leave early or want to complete the whole process in parts, so he is given another days appointment for remaining investigations and considered as outlier. A outlier form is been filled by him for that).

Minimum time taken during process – 4 hours 5 min.

Maximum time taken during process- 6 hours 30 min.

Average time taken during process – 5 hours 10 min.

Delayed patient percentages-57 %

Maximum time consuming investigations - TMT (1 HOUR 15 MINUTES), USG (58 MIN) followed by Ophthalmology review (22 MINUTES).

Whole body package –

Total patient observed – 6

Booked patients – 5

Unbooked patients – 1

Outliers – 0

Minimum time taken during process – 4 hours 45 min.

Maximum time taken during process- 5 hours 45 min.

Average time taken during process – 5 hours 15 min.

Delayed patient percentages- 100%

Maximum time consuming investigations - TMT (1 HOUR 23 MIN),USG (31MIN) followed b DENTAL(30MIN), OPHTHALMOLOGY REVIEW (19 MIN).

Cardiac package –

Total patient observed – 5

Booked patients – 1

Unbooked patients – 4

Outliers – 0

Minimum time taken during process – 1 hours 15 min.

Maximum time taken during process- 5 hours 5 min.

Average time taken during process – 3 hours 13 min.

Delayed patient percentages- 20%

Maximum time consuming investigations -TMT (21 MIN)

Basic package –

Total patient observed – 1

Booked patients – 1

Unbooked patients – 0

Outliers – 0

Total time taken during process – 3 hours 35 min.

Maximum time consuming investigations -TMT (45 MIN),USG (1 HOUR 23 MIN).

Corporate package –

Total patient observed – 20

Booked patients – 9

Unbooked patients – 11

Outliers – 0

Minimum time taken during process – 1 hours 50 min.

Maximum time taken during process- 6 hours 35 min.

Average time taken during process – 3 hours 51 min.

Delayed patient percentages- 20%

Maximum time consuming investigations - TMT (42 MIN),USG (42MIN) followed by DENTAL(19MIN), OPHTHALMOLOGY REVIEW 19 MIN).

CGHS package –

Total patient observed – 2

Booked patients – 1

Unbooked patients – 1

Outliers – 0

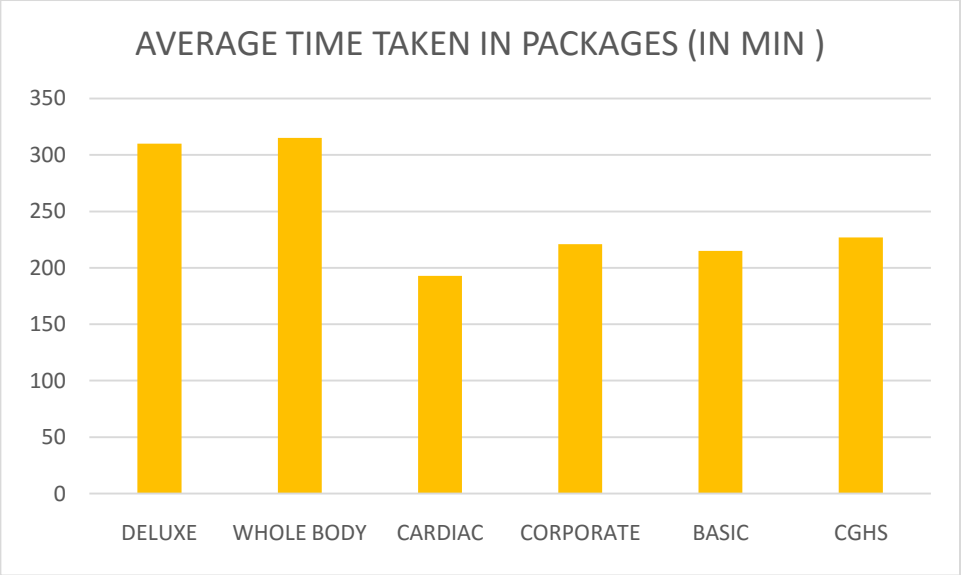
Minimum time taken during process – 3 hours 35 min.

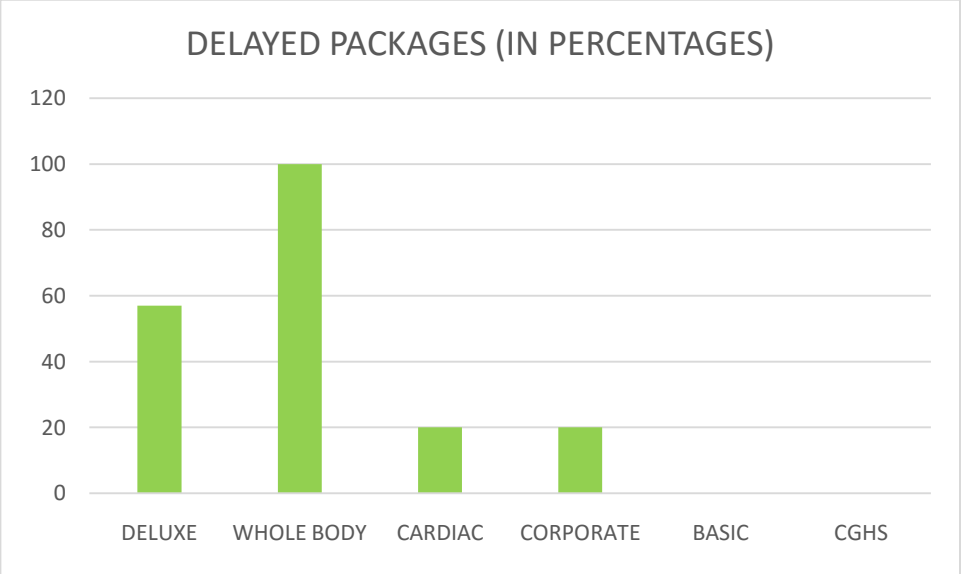
Maximum time taken during process- 4 hour.

Average time taken during process – 3 hours 47 min.

Delayed patient percentages- 0 %

Maximum time consuming investigations -TMT (1 HOUR 10 MIN),USG (52MIN)





FINDINGS AND RECOMMENDATIONS –

The findings were –

1. USG department's long waiting time was a problem for patients, as most of the delays happened there. Some patients who were having urine pressure have gone through hard times because of further waiting. Others have to get relieved as they can't hold more and have to start making pressure once again causing further delays.

2. Only one of three TMT machines was working, causing long waiting as TMT itself takes 20 to 25 minutes.
3. Ophthalmology and Dental departments were on the floor above PHC department, creating problems for elderly.
4. Mixing of OPD patients with PHC patients in TMT, USG, and Physician appointment caused problems for PHC patients.
5. Elderly patient's movement for investigations was a problem causing delays and also patient dissatisfaction.

Recommendations-

1. Ward boys should be employed for assistance to elderly patients during their ambulation to various departments.
2. Elderly patients should be given priority as waiting for them is difficult.
3. Counselling of people for making urine pressure and start drinking water just after blood sampling. Providing them 500 ml of water bottle for drinking water during movement to other departments.
4. Making arrangement for at least 1 more TMT machine.
5. Limiting number of patients to be taken in a day and if there is increased patient load, inform them about possible delay in advance.
6. Providing them a layout of hospital map, highlighting departments where they have to report in sequence and guiding them to move on if there is long waiting.
7. Shifting reporting time of patients at 7:30 am onwards, as till the time they are counselled and billed it would become 8, and they can be moved to departments for investigations preventing mixing with OPD patients and thus preventing delays.
8. Flow of patient can be managed by drifting some of the patients towards TMT, some towards USG and some towards blood investigations from beginning. It can help reduce waiting time.

Project-3

A time motion study to find out delays in Admissions and financial counselling department.

Introduction-

Admissions and financial counselling play a vital role in admissions of patient and patient satisfaction. Whenever a patient is advised admission into hospital, it is the first place they interact with the hospital staff and make inquiries about facilities, processes and tariffs. So patient satisfaction at this place is mandatory for image building and positive marketing by patients and attendants. Delays and inefficient handling can lend a serious dent in business.

Process flow –

Location – situated near reception.

Patient advised admission through any of the following modes – OPD, Emergency, Clinics.

Reaches admissions and counselling department for inquiries and admissions.

Counselling regarding tariffs (bed, doctor fee, investigations & medicines (approx.), other expenses), patient's rights and duties and other requirements and paperwork.

Admission

Billing (patient goes to cash counter for payments, then comes back to counselling with receipts.

Allotment of room

Patient goes to their allotted rooms and hand over admission docket given by admission department.

Objective –

Time motion study of each process in admissions and counselling department.

Finding delays in the processes and solutions.

Methodology –

This study is based on observation of patients coming for admissions and following them from the time of entry till they reaches their bed. A total of 66 patientswere observed. Timing of each process was noted down. These timings were entered into excel sheets and a master data sheet iswas made. From this master data sheet, category wise data was filtered and separate sheet was made according to category. Time taken by each department is was calculated by subtracting reporting time from IN time.

Then average time taken was calculated by average using excel functions.

Then analysis of data was done department wise.

Location – Ground floor near radiology department.

Study area – Fortis hospital Noida.

Study population – cash, TPA, ECHS, CGHS admissions patients.

Sample size – 66 patients

Study methods – Prospective time motion study in admissions patients.

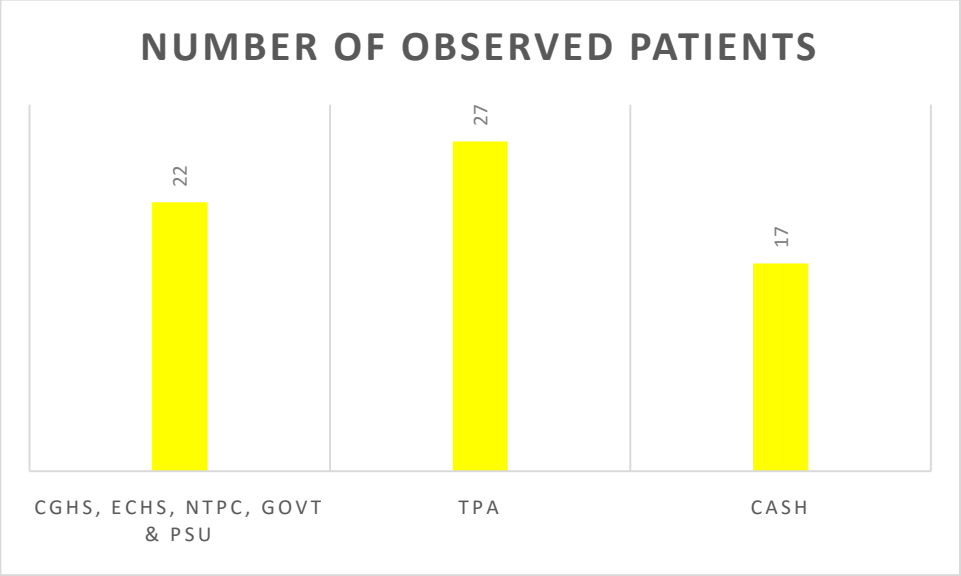
Data collection tool – Observational

Study type – Descriptive

Sampling method – Purposive non random sampling

Sampling period – 28th April to 25th May

Total patient observed -66



CASH –

Total number of patients – 17

Waiting before counselling – 53 seconds

Time taken in admission – 12 minutes

Time taken in cash deposit – 3 minute 51 seconds

Total turnaround time – 32 minutes

ECHS, CGHS, GOVT & PSU'S –

Total number of patients – 22

Waiting before counselling – 5 seconds

Time taken in admission – 20 minutes

Total turnaround time – 26 minutes

TPA-

Total number of patients – 27

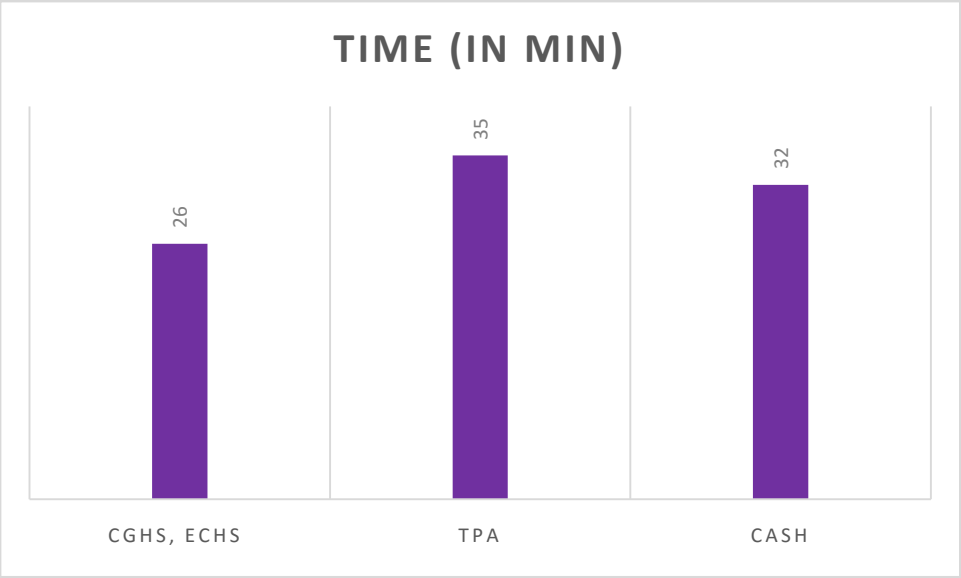
Waiting before counselling – 11 seconds

Time taken in admission – 23 minutes

Time taken in cash deposit – 3 minute

Total turnaround time – 35 minutes

COMPARISION OF TAT



FINDINGS –

1. The chamber of admission and counselling department is small in comparison to amount of people visiting there, causing nuisance to the staff and also to the people visiting there.
2. Sometimes unavailability of bed due to full occupancy or room cleaning causes delay in admission process.

3. Inefficient organisation of work causing workload on staff due to night admission counselling, movement to TPA and billing department on and off for patients, causes delays and staff exertion.
4. Increased rush of patients on Saturdays and Mondays.
5. Recently new staff is been deployed which is also a cause for delays.

RECOMMENDATIONS –

1. Bigger space should be provided for admissions and counselling department.
2. For recounselling, night counselling, queries, inquiries the staff could be reorganised as one staff could be given responsibility separately to do this, to reduce TAT and improve efficiency. He can also do ambulatory work whenever required.
3. Efficient management of staff on heavy rush days, by shifting non urgent work to other days and giving priority to admissions on that particular day.
4. Running bill enquiry timing can be slotted between 3 to 4 pm for patient and attendant convenience. And this information should be given at the time of admission itself.
5. One extra good quality pamphlet should also be provided to patient guiding them about the general guidelines and policies as the existing given one has poor quality and not many people read it.
6. Providing water at the time of admission process could be a good sign of gesture as patients and attendants are at great stress at that time and it could decrease the anxiety level and also deepens the patient-organisation relations.
7. TPA, billing, ECHS, CGHS and credit cell should be close enough or if possible in the same corridor to facilitate convenience to patient.
8. If beds are not available, then condition of patient is to be discussed with doctor, whether he is stable enough to wait or need urgent care. In cases of stable patient only, waiting should be allowed.

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ANNEXURES -

Tools-

For PHC department -

DATE	NAME	PACKAGE	UHID	BILL TIMING	BOOKED/UNBOOKED PATIENT	ARRIVAL TIME	SCR	XRAY & MAMMO	USG	ECG	GYNAE	ECHO TMT	OPHTHALMO CONSULT	DENTAL CONSUL	MEDICINE CONSULTATION	OTHERS		

SCR – Sample collection room

USG – Ultrasonographys

Each of these department's reporting time (time at which patient enters for first time in the department), in time (when patient enters the department for investigation) and out time (time at which patient comes out of department after investigations) was noted down.

Admissions and counselling department -

Name / IPID	CATEGORY	FIRST TIME ENTRY	COUNSELLING TIME (IN)	COUNSELLING TIME (OUT)	ADMISSION TIME	CASH COUNTER TIME	CASH COUNTER TO SECOND ENTRY	SECOND ENTRY TO BED TIME	REASONS FOR DELAY

Pharmacy department –

DATE	INDENT NO.	INDENT TYPE	INDENT TIME	ISSUE TIME	DISPATCH TIME	RECEIVING TIME	RECEIVING NURSE'S NAME / EMPLOYEE I.D.