

Summer Training

[April 7th – June 8th, 2015]

In



A Report

By

Dr. Pooja Singla

MBA in Hospital and Health Management

(20014-16)



Institute of Health Management Research, Jaipur

2015

CERTIFICATE

This is to certify that Dr. Pooja Singla has undergone her summer training from Asian Institute of Medical Sciences, Faridabad from 7th April to 8th June 2015 and has done projects on:

1. Clinical Audit on CABG over EURO Score
2. Clinical Audit on Dialysis Quality Indicators.
3. A study on Quality Indicators of Operation Theatre.
4. Project on Discharge Planning.

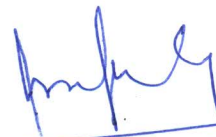
Her approach to the study has been scientific and analytical. This summer training is partial fulfilment of course requirement and is recommended for the award of MBA in hospital and health management.

I wish her success in all her future endeavours.



Dr. Ashok Kaushik

Dean (Academic and Student Affairs)



Prof. Nirmal Kumar Gurbani

Professor

IIHMR University, Jaipur

Certificate of Internship Completion

Date: 08th June'15

TO WHOM IT MAY CONCERN

This is to certify that Dr. Pooja Singla – pursuing MBA in Hospital and Health Management at IIHMR, Jaipur has successfully completed her two months internship at Asian Institute of Medical Sciences, Faridabad from April 7th, 2015 to June 8th, 2015. She has successfully completed following projects:

- 1) Clinical Audit on Dialysis Quality Indicators
- 2) Clinical Audit on CABG over EURO SCORE
- 3) Project on OT Quality Indicator
- 4) Project on Discharge Planning

During the period of her internship programme, she was found punctual, hardworking and inquisitive.

We wish her good luck for all her future assignments.



Dr. Ankur Kathuria

Manager – Quality & Operations

Asian Institute of Medical Sciences

ACKNOWLEDGEMENT

The successful completion of the internship and final outcome of this project required a lot of guidance and assistance from different people and I consider myself fortunate to have so many people around to guide me.

Firstly I would like to thank Col. Dr. Ashok Kaushik (Dean Academics and Student Affairs, IIHMR, Jaipur) to provide such a great learning opportunity. I am also thankful to our alumni Dr. Ankur Kathuria (General Manager, Quality and Operations Department, Asian Hospital, Faridabad) for his consent and further nurturing my understanding about the hospital and its working.

I own my profound gratitude to our alumni Dr. Ashish Tripathi and Dr. Samir Banzal (Senior Executives, Quality and Operations, Asian Hospital, Faridabad) for guiding me and always adding value to my understanding of different departments in the hospital.

Finally, I would like to extend my sincere regards to my mentor, Professor Nirmal Kumar Gurbani (Professor, IIHMR University, Jaipur) for his support and invaluable guidance.

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ABBREVIATIONS

AHU	-	Air Handling Units
ALOS	-	Average Length of Stay
CCTV	-	Closed Circuit Television
CCU	-	Critical Cardiac Care
CMD	-	Chief Medical Director
CMO	-	Causality Medical Officer
CSO	-	Chief Security Officer
CSSD	-	Central Sterile and Supply Department
CTVS	-	Cardio Thoracic Vascular Surgery

DG	-	Diesel Generator
DOR	-	Discharge on Request
ECG	-	Electro Cardiogram
ENT	-	Ear Nose Throat
ETO	-	Ethylene Oxide
FDA	-	Food & Drug Administration
FOC	-	Free of Cost
GDA	-	General Duty Assistants
HAZMAT	-	Hazardous Material
HIS	-	Hospital Information System
HOD	-	Head Of Department
HRD	-	Human Resource Development
HVAC	-	Heating, Ventilation & A/C
ICD	-	International Classification of Diseases
ICU	-	Intensive care Unit
IGRT	-	Image Guided Radiotherapy
IMRT	-	Intensity Modified Radiotherapy
IPD	-	In Patient department
IT	-	Information Technology
LAMA	-	Leave Against Medical Discharge
MLC	-	Medico Legal case

MRD -	Medical Records department
MTP -	Medical Termination of Pregnancy
NICU -	Neonatal Intensive Care unit
OPD -	Out patient Department
OT -	Operation Theatre
PET/CT -	Positron Emission Tomography/ Computerized Tomography
PICU -	Pediatric Intensive Care Unit
PNDT -	Pre Natal Determination Test
RMO -	Resident medical Office

INTRODUCTION

As an integral part of the **MBA course**, the summer training helps us in understanding the overall functioning of the hospitals from a managerial point of view. Keeping this factor in view, I tried to visit different hospital departments of **ASIAN INSTITUTE OF MEDICAL SCIENCES (AIMS)** with a special focus on understanding the various procedures in place. I visited different departments, met the department In-charge and interacted with the doctors, nurses and other staff.

The **Aim** of the summer training was:

“To study the administrative and managerial functioning of ASIAN INSTITUTE OF MEDICAL SCIENCES (AIMS)” with special reference to the different areas / departments of the Hospital.

The **Objectives** of summer training were:

- To learn the daily operational management of the Organization and its various departments / areas.
- To study the salient and critical features about the functioning of these departments / areas.
- To identify issues / problems associated with some specific departments / areas.
- To undertake the projects / special tasks assigned to us.

METHODS OF DATA COLLECTION

Study design-

- **Area-** ASIAN INSTITUTE OF MEDICAL SCIENCES (AIMS), Faridabad
- **Duration-** From 7-04-2015 to 08-06-2015
- **Type of study-** Cross sectional Descriptive study, Observational study
- **Sample size-** Random (As per decision of management)
- **Procedure-** One to one discussion

Type of Data collected -

- Primary data collected by visiting the different departments.
- Secondary data from the various Hospital policies, documents in various departments.

Most of the information was collected through observations. Both types of observations – participative and non participative were used in learning the function and working of various departments.

Non Participative observation was used mainly to learn the general things about the hospital like location of different departments, behavioral aspects of employee and the response time.

HOSPITAL PROFILE



Asian Institute of Medical Sciences is the vision and dream of renowned surgeon, **Dr. N.K. Pandey**, FRCS (Edinburgh), FRCS (Glasgow) FACS, FICS, a 2008 Dr. B.C. Roy National Awardee.

The institute is centrally located in Sector 21-A, Faridabad in the National Capital Region (NCR) and conveniently accessible from Delhi, NCR and other parts of Northern India.

Asian Institute of Medical Sciences (AIMS) is a 350 bedded super specialty tertiary care hospital, truly futuristic in its services and technology and brings together some of the most talented medical professionals. The institute provides preventive, diagnostic, therapeutic, rehabilitative, palliative and support services under one roof and is designed to meet patient care and research requirements of the new millennium.

The facility is planned with international quality specifications and equipped with state of the art equipment in all specialties. The institute with 11 operation theatres, 80 critical care beds, high-end diagnostics, therapeutic and preventive health facilities, is set to become a preferred destination for quality healthcare services.

Asian Institute of Medical Sciences has been rated seventh best hospital in Delhi NCR by “The Week” magazine as per the “A C Nielson Survey”.

All this makes AIMS not just another hospital, but a complete solution in the philosophy of healthcare.

SPECIALTIES OFFERED

Oncology, Cardiac Diseases, Renal Diseases, Neonatal, Pediatric /Medical & Cardiac Intensive care, Orthopedics, General Surgery, Nephrology, Endocrinology, Gastroenterology, General Medicine, Gynecology, Pediatrics, Laboratory Medicine, Neurology, Ophthalmology,

Radiology, Pulmonology, Urology, Aesthetic & Cosmetic Surgery, Dermatology, Pulmonary Medicine, ENT, Physiotherapy, Critical care, Dental, Alternative Medicine.

ASIAN CENTRE OF EXCELLENCE

- Asian Cancer Centre
- Asian Heart Centre
- Asian Centre For Advanced Surgery
- Asian Centre For Mother And Child
- Asian Centre For Neurology & Neurosurgery
- Asian Centre for Urology & Kidney Transplant
- Asian Centre For Renal Diseases
- Asian Centre For Bone & Joints
- Asian Centre For Imaging & Advanced Imaging
- Asian Centre for Gastroenterology
- Asian Centre for Bariatric & Metabolic Surgery
- Asian Centre for Aesthetic Surgery & Medicine
- Asian Centre for IVF

VISION

“To be the most trusted healthcare partner for people through our unsurpassed quality & care and by striving to provide **accessible, affordable** and best **available** healthcare services in India”.

MISSION

- To give world class patient care.
- To revolutionize our healthcare services by genuinely caring.
- To be an active participant in the local community and provide the very best medical expertise for general welfare & well being.

- To make specialized medical care available to every individual.

MOTO

Will to Serve...

....Skill to Cure

Punch Line

Caring for what matters most

CORE VALUES

- Focus on Patient & Patient Care
- To provide extraordinary customer satisfaction
- Treating all people with respect & dignity
- Acting always with utmost integrity
- Creating Value for the society we live in
- Service with Empathy and Compassion
- Teamwork – Partnering for success

What sets AIMS apart:

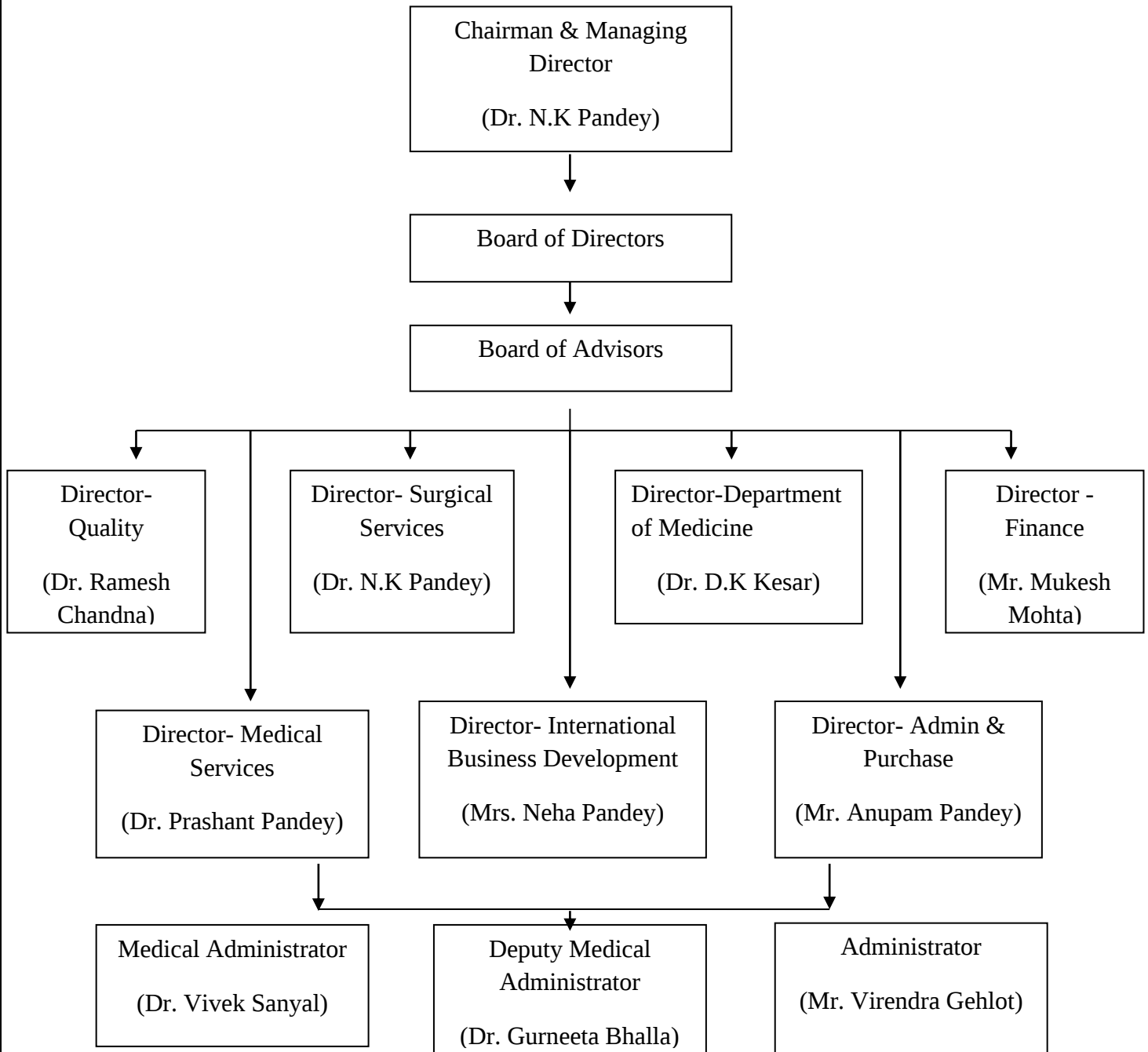
The institute is planned with international quality specifications and equipped with state-of-the-art equipment in all specialties. Some of the leading edge healthcare services that will be provided are:

- The cancer centre at Asian Institute of Medical Sciences is a state-of-the-art facility that is slated to become North India's most comprehensive Cancer Centre offering all forms of treatment from early detection to cure and palliative care.
- AIMS is the first hospital to acquire and install **Rapid Arc- IGRT & IMRT Linear Accelerator (Varian)** in North India and it is the only hospital in Haryana, with this kind of comprehensive facility.
- AIMS is equipped with the **first PET/CT** in this region. The PET/CT is one of the most advanced diagnostic equipments available today for early detection of cancer
- 11 modular modern and state of the art operation theatres equipped with LED Lights, media bridges, Laminar flow, operating microscopes, image intensifiers, laparoscopic equipment, Harmonic, RFA Laser, CUSA etc.
- Imaging department equipped with state of the art Phillips equipment including a 1.5T MRI, The first PET CT in South Delhi/Faridabad, 64 Slice CT Scan Mammography, and Bone Densitometer, High end ECHO, 4D Ultrasound & Digital X-Ray.
- Comprehensive Cardiac Program including Non-invasive & Interventional Procedures and Cardiac Surgery. Centre of Excellence in Renal Care – round the clock facility for dialysis..
- Comprehensive and State of the art Laboratory & Blood Bank, with all machines in imaging and diagnostics online and results available on posting immediately on the intranet and internet
- Preventive Health Check-up facilities tailored to individual requirement.
- A comprehensive physiotherapy center and a dedicated centre for alternate medicines and treatments such as Homeopathy, Ayurveda and Reiki Spiritual healing.
- A 250-seat auditorium and amphitheatre for education, conferences, workshops and seminars. The auditorium is connected to a live stream from all operation theatres.
- Air Ambulance Service.

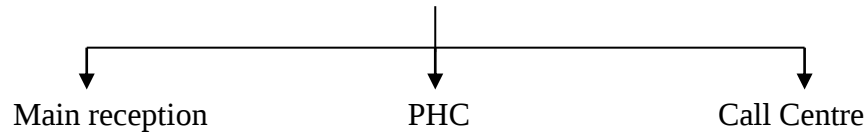
Quality Policy

“To create a safe patient centric healthcare delivery system, which is accessible, affordable and best available?”

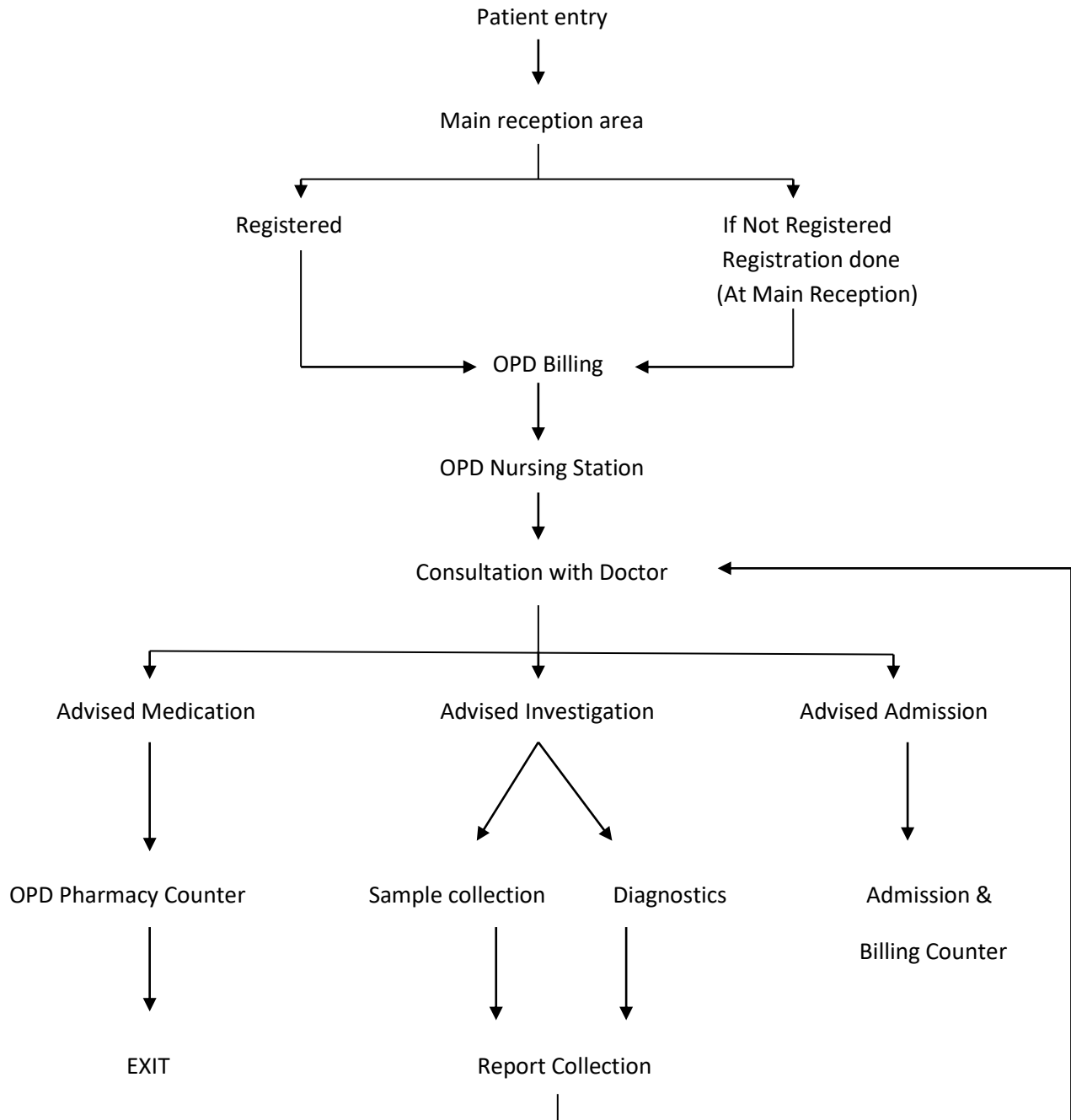
ORGANISATIONAL STRUCTURE



FRONT OFFICE



I) MAIN RECEPTION



Infrastructure:

Wheelchair : 4

Stretcher : 1

No. of OPD Billing Counters: 7

No. of Admission Billing Counters: 2

Sample Collection Room: 1

International Patient's Reception: 1

International Patient's Waiting Lounge : 1

Staff:

- 1 Front Office Manager
- 4 Front Office Executives
- 1 Healthcare Executive
- 9 Trainees

Responsibilities of Front Office Manager:

- Responsible for overall supervision of the front office staff.
- Formulation of department goals, policies, procedures and their implementation.
- Coordinates operations, assigns responsibilities and supports the staff in peak hrs.
- Coordinates events in hospitals like CME, VIP visits.
- Inventory control and budget forecasting w.r.t front office.
- Training of newly appointed front office executives and other staff under him/her.

Roles & Function of Call Centre Executives:

- Receive and answer the various calls from outside and within the hospital
- Answering queries regarding the OPD appointments and charges, various tests availability and charges
- Connecting to various employees within the hospital by Star-Dialing.

OPD RECEPTION

OPD's are distributed amongst Basement no. 2, Basement no. 1, Ground, First, Second floor and fourth floor of the hospital.

Basement-2

Radiation Oncology

Basement-1

Emergency

Ground Floor

- | | | |
|---------------------|----------------------|------------------|
| a) Ophthalmology | e) ENT | i) Physiotherapy |
| b) General Surgery | f) Internal Medicine | j) Psychiatry |
| c) Orthopedics | g) Urology | |
| d) Advanced Surgery | h) Neurosciences | |

First Floor

- | | |
|-------------------------|--------------------|
| a) Cardiology | e) Dental |
| b) Gastroenterology | f) Psychology |
| c) Dermatology | g) Nephrology |
| d) Respiratory Medicine | h) Cardiac Surgery |

Second Floor

- | |
|------------------------------|
| a) Gynecology and Obstetrics |
| b) Pediatrics |

Fourth Floor

Dialysis

No. of OPD Counters: 8

- One for Orthopedics & Neurosciences
- One for E.N.T & Urology
- One for Eye & Surgery
- One for Cardiac Surgery, Nephrology, Respiratory Medicine, Gastroenterology & Dermatology
- One for Dental & Cardiology
- One for Gynecology
- One for Oncology
- One for Pediatrics

Total Manpower for OPD Counter: 15

Records Maintained:

- Patient's OPD Registration records.
- Daily visitor's report.

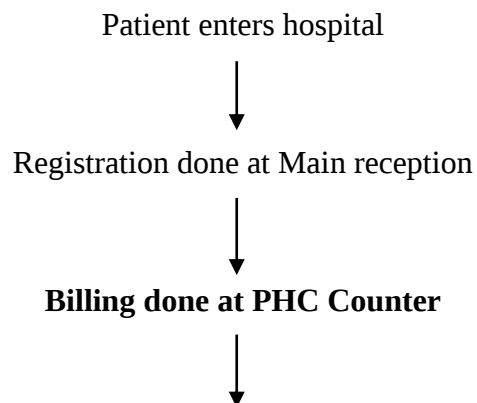
PHC

(PREVENTIVE HEALTH CHECKUP)

Layout: 1st Floor

Staff: 7

WORKFLOW:

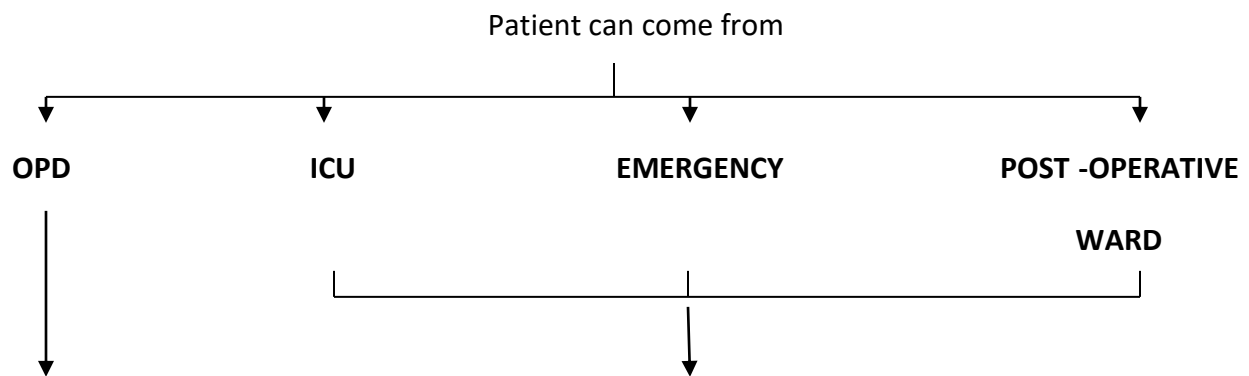


Sample collection done in PHC Sample Collection Room



Sample sent to Lab

FLOWCHART FOR ADMISSION OF A CASH/NON TPA PATIENT

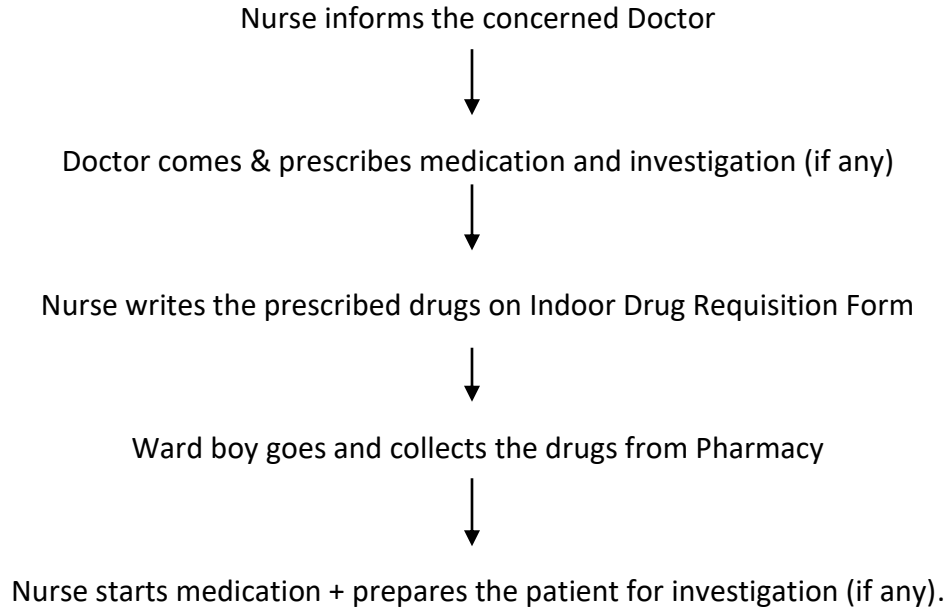


Admission counter
Assistant gives a call
to nursing station to
confirm for bed
availability.

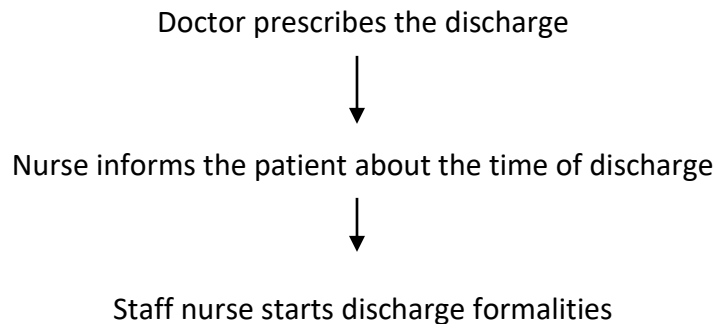
- Nursing staff of ward changes the patient status in HIS by doing "**CHECK-IN**" of the patient received.
- ICU/ EMERGENCY/ POST-OPERATIVE WARDS (from where the patient is coming) changes the patient status in their HIS by doing "**CHECK-OUT**" of the patient.

Nursing staff prepares the room/bed.

Entry done in HIS, Register, White Board



DISCHARGE PROCESS FOR NON-TPA PATIENT



By

- Asking the Medical Officer / Concerned Physician to make discharge summary.
- Informing Dietician to make discharge diet report for patient.
- Counseling of the patient by the dietician and physiotherapist (if physiotherapy is going on for patient)

- Sending to Pharmacy :
 - Daily Billing Activity Sheet
 - Daily Pharmacy Bills
 - Discharge medication details
 - Medicines left unconsumed
- In Pharmacy, Summary of Pharmacy Bill is prepared.

Discharge Summary completion
(by Medical Transcriptionist)

Daily Billing Activity Sheet +
Summarized Pharmacy Bill

Billing Department

Billing department finalizes the bill

Payment taken by billing department from attendants

IPD Billing informs at the nursing station about the clearance of bill

Nurse informs the patient & patient changes clothes

Nurse checks the checklist given for discharge of patient

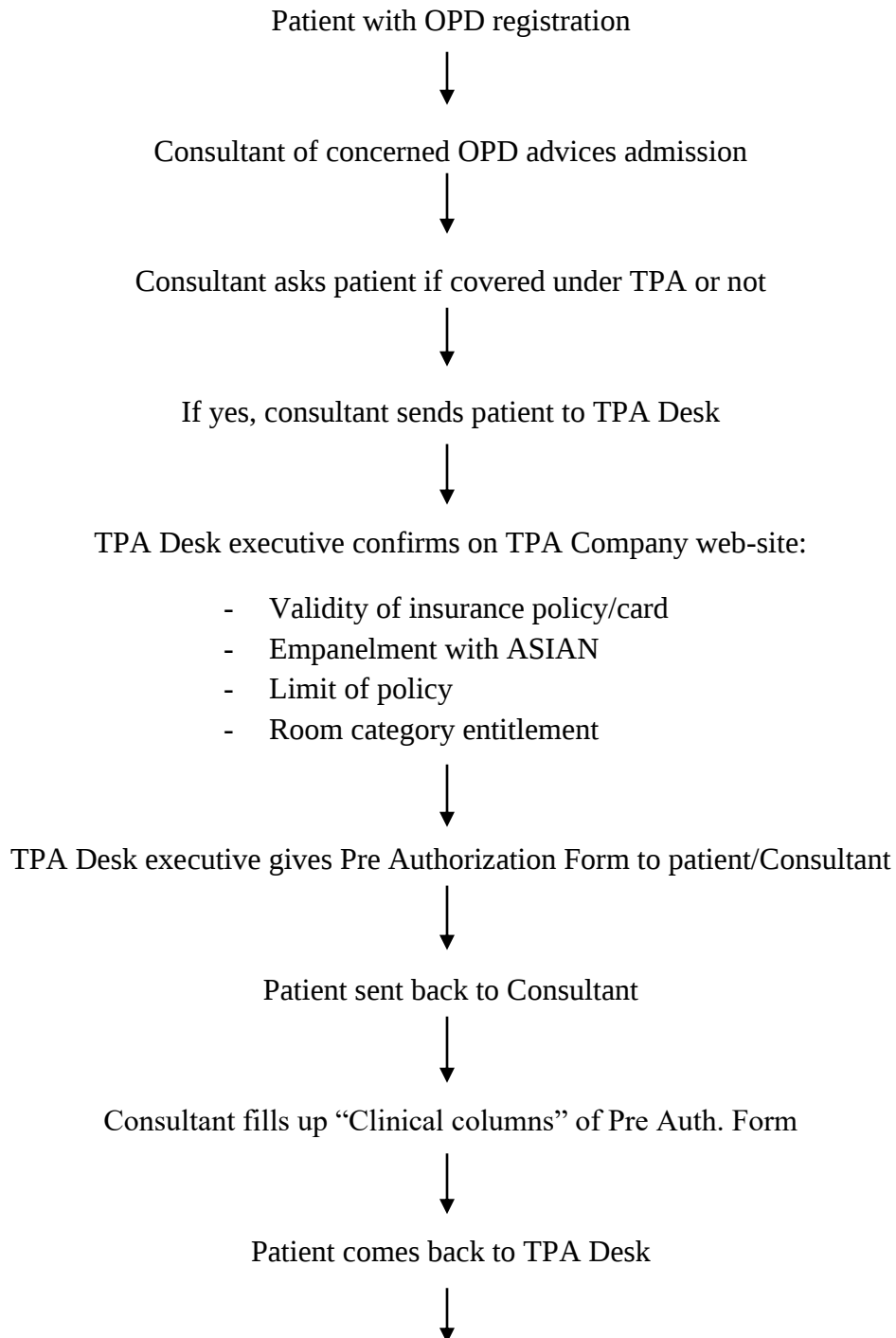
All medications + Investigations reports + Patient's file given to the patient

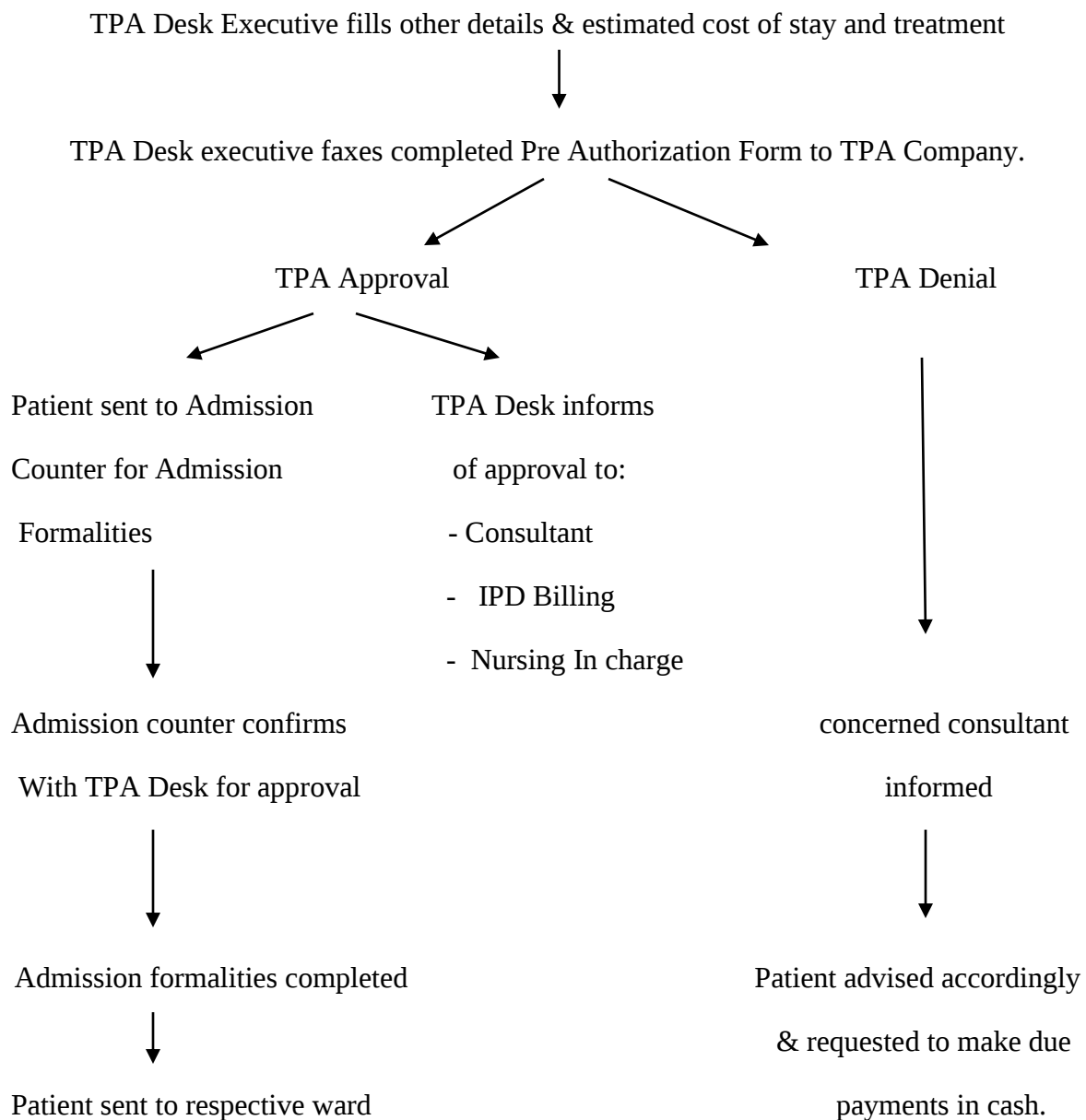
Patient given & explained about how to take the medications + any special instruction + follow up schedule

Patient Discharged

FLOW OF A TPA PATIENT

I) PRE PLAN ADMISSION

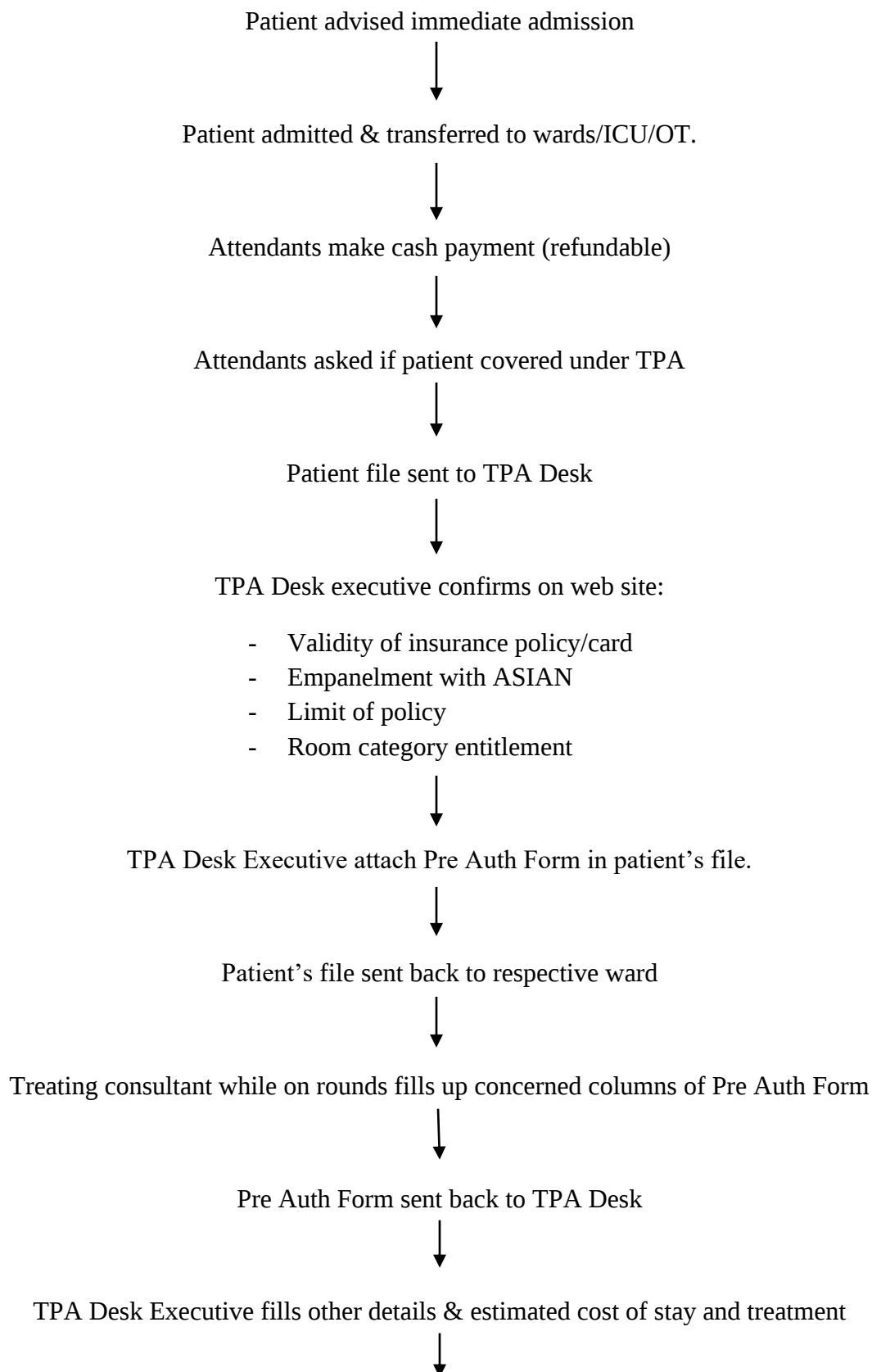




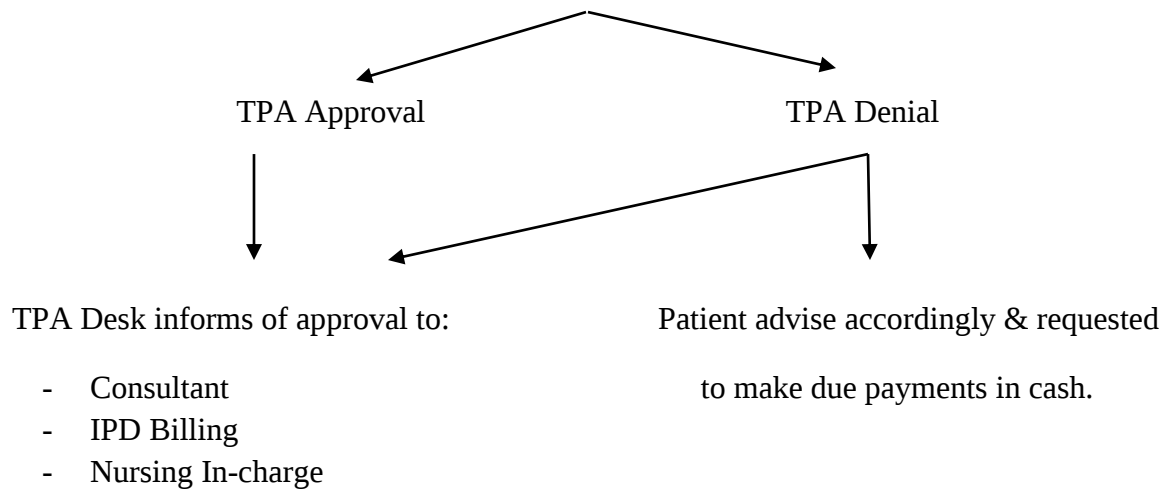
EMERGENCY ADMISSIONS FOR TPA PATIENTS

Patients comes to casualty

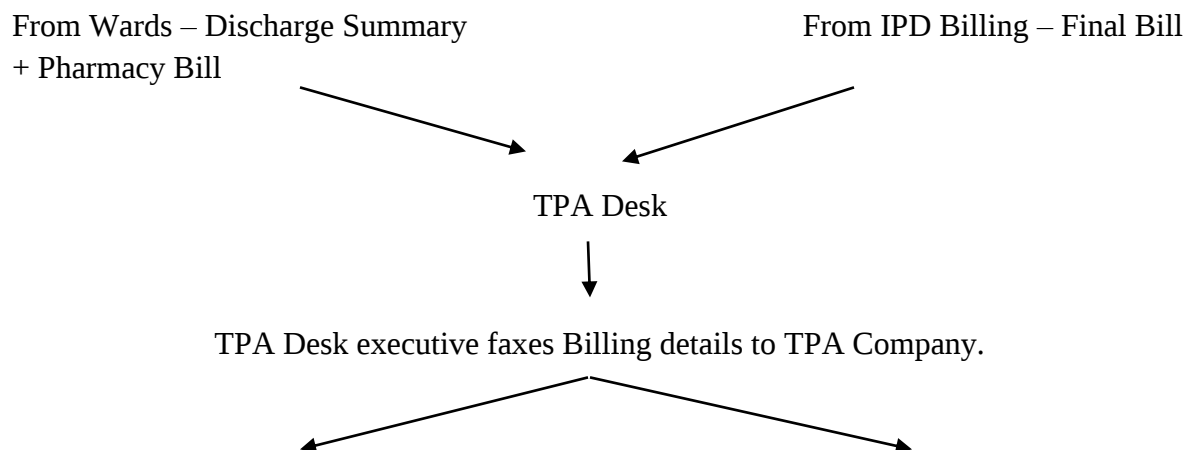


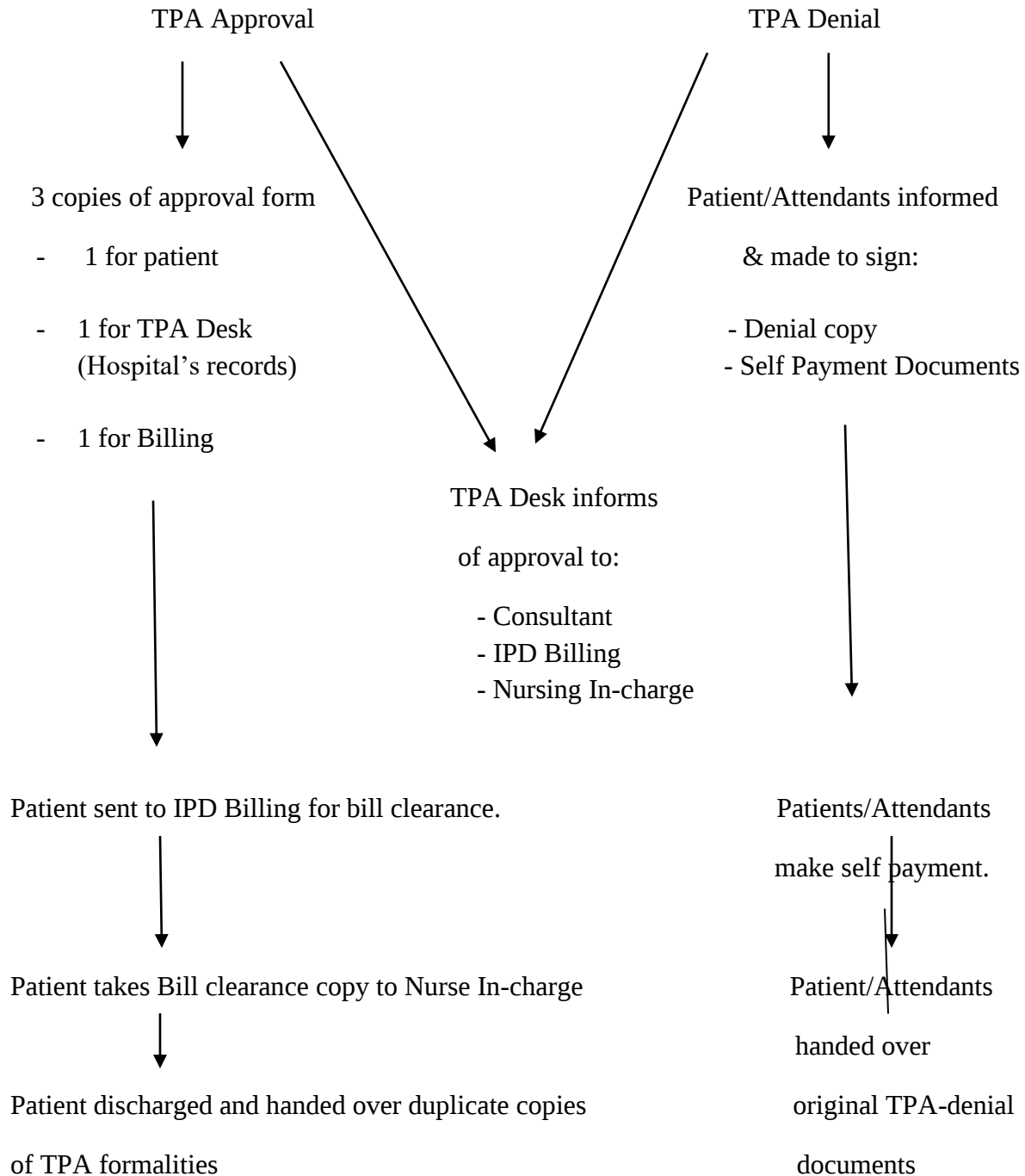


TPA Desk executive faxes completed Pre Authorization Form to TPA Company.



FLOW OF TPA PATIENT DISCHARGE





OT (Operation Theatre)

- ❖ **Layout** : 3rd floor
- ❖ **No. of OT's** : 10
 - General OT's – 8
 - Cardiac OT's – 2
- ❖ **No. of beds in Pre operative ward** : 7
- ❖ **No. of beds in post operative wards** : 8
- ❖ **Utility room** : 1
- ❖ **Doctor's Lounge** : 1
- ❖ **Nurse and Technician Lounge** : 1
- ❖ **Pantry** : 1
- ❖ **Sterile room** : 1
- ❖ **Changing rooms** : 4
 - Doctor (male) changing room** : 1
 - Doctor (female) changing room** : 1
 - Nurse (female) changing room** : 1
 - Technician + Nurse (male) changing room** : 1

OT Washing & Fumigation Schedule:

OT - 1, 2, 3, 8: Every Saturday

OT - 4, 5, 6, 7: Every Sunday

In case, culture report (every 72 hrs for each OT) shows more **than 3 types of isolates** then fumigation done on same day in OT.

INFECTION CONTROL SURVEILLANCE PROGRAMME FOR OT

Records maintained for OT Sterilization Check:

1. OT Culture File :

- Contains culture report of each OT
- Done every **72 hrs.**
- Swabs taken from OT Floor, walls, table locations.
- Method used : **Slit Air Method**
- FORMAT: Site (OT No.)
Method
Receiving date
Reporting date
Microbiology report

2. Daily OT Cleaning File :

- Daily OT cleaning record (compiled to get monthly record) with format as :
OT No./Item name /Qty./ Date /Morning, Evening, Night with (personnel sign & ID no.)
- OT Washing date record, OT Fumigation date record.

3. Fumigation Record File

- Separate record for each OT
- Fumigation done by **2% trigene**
- Weekly reporting
- FORMAT : Date/ Fumigation done by/ Technician name/ Remark

OT WORKFLOW

Doctor sends request for OT Availability



OT In charge confirms OT availability



Entry into OT Booking Register regarding

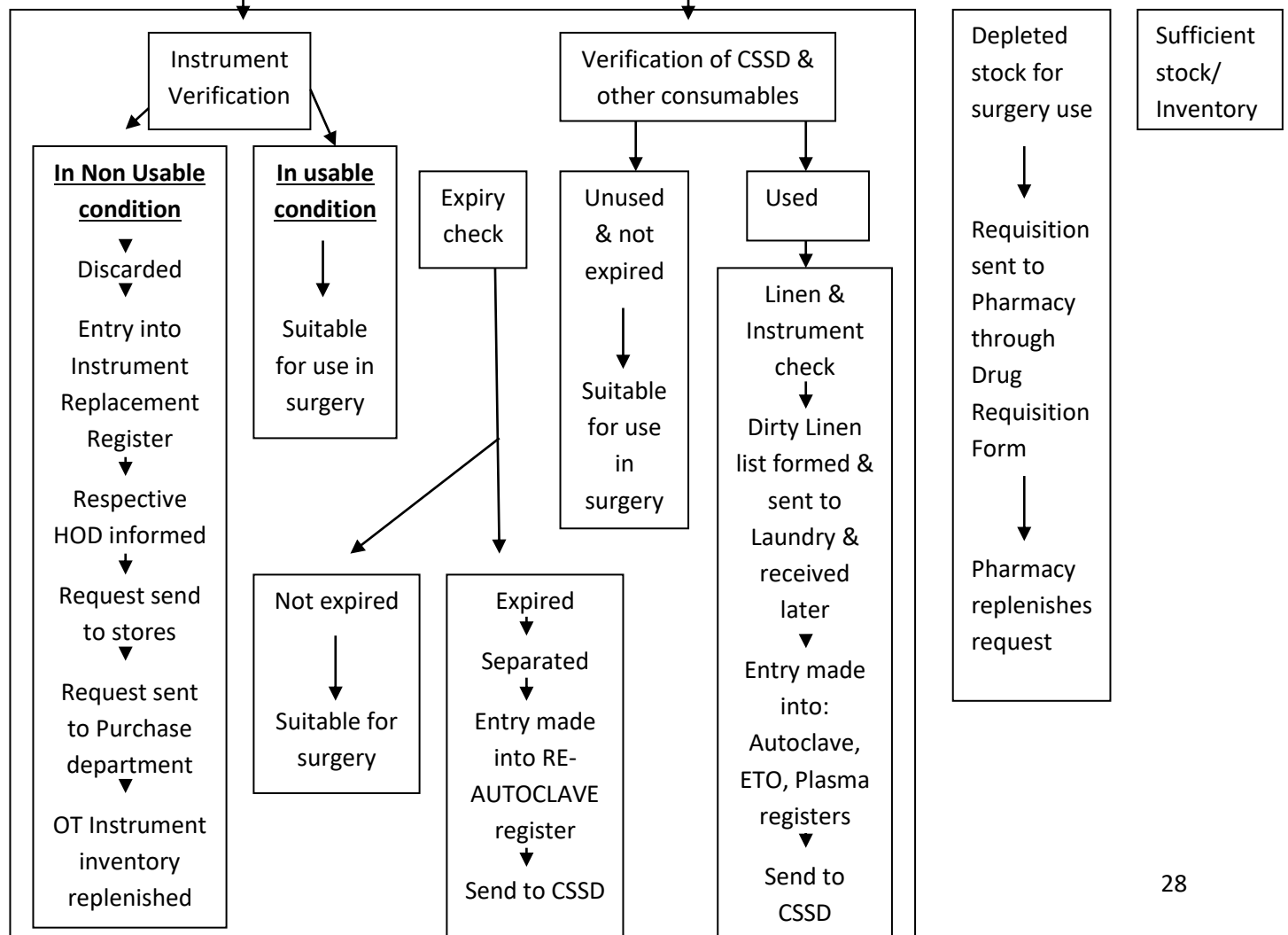
Scheduled surgery's Date, Time, Doctor, Patient

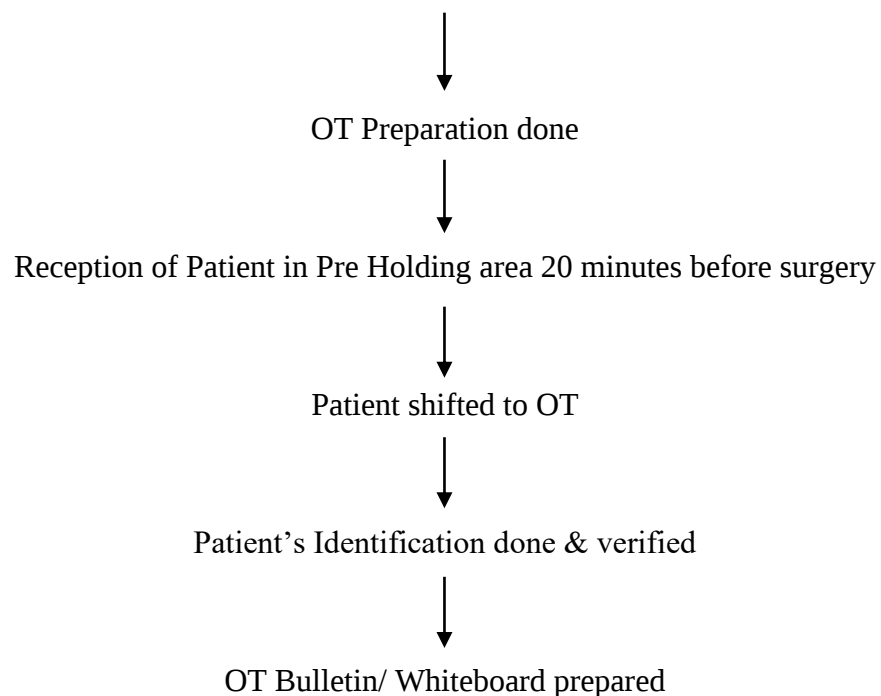
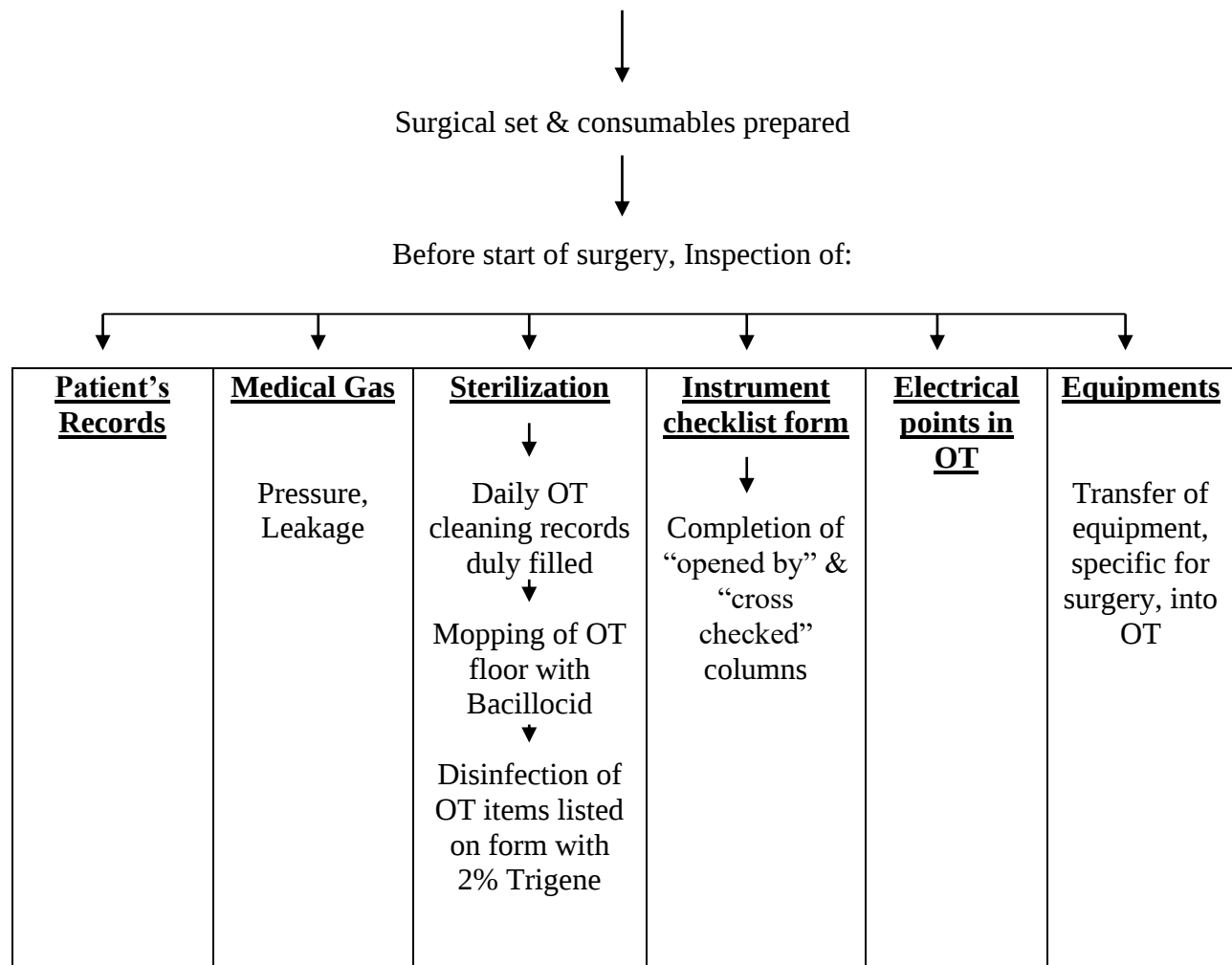


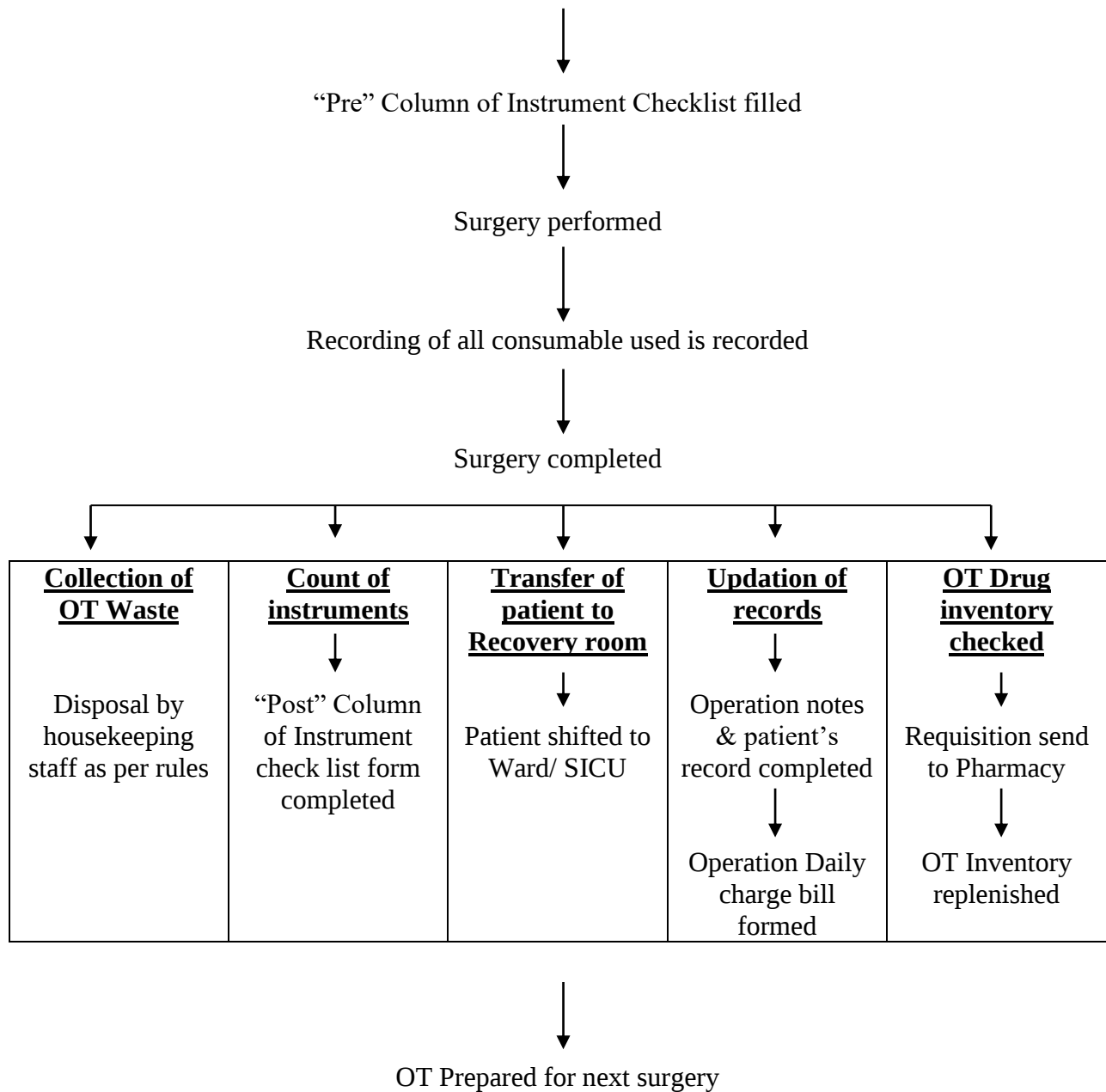
A day before surgery verification of:

Surgery Set

Drugs







Department of Critical Care

Components: ICU, IMCU

Layout: 3rd Floor

- Doctor's Duty Room - 1
- Nurse Change Room-Female - 1
- Equipment Room - 1

ICU Beds: 18 (Electric Control CPR Beds)

IMCU Beds: 14

Department Head: Dr. Sandeep Bhattacharya

ICU

Infrastructure:

Desktops: 2

Printers: 1

Intercom: 1

Total Manpower: 50

Housekeeping staff: 2

Working Shifts/ Duty Roster – 3 Shifts

Morning: 8.00 AM to 2.00 PM

Evening: 2.00 PM to 8.00 PM

Night: 8.00 PM to 8.00 AM

EQUIPMENTS:

1. Ventilator
2. Patient monitor
3. Defibrillator
4. Syringe pump
5. ECG machine
6. Pace Maker
7. ICU bed
8. Infusion Pump
9. Suction Jar
10. Oxygen Humidifier
11. X – Ray viewer
12. Bi Pap Machine

Cleaning Protocols:

- Equipments like ventilators & monitor to be cleaned only by nurses.
- Separate stethoscope for each bed space (used after sterilizing with spirit).
- Digital thermometers for individual patients (later given to them & patient billed).
- Suction tube to be changed at each bed after every 3 hrs.
- Catheter mount & HME filters to be changed every 72 hrs.

Nurse to patient ratio:

- Routinely: 2:1
- When the patient is on Ventilator: 1:1

Each Bed Space Contains:

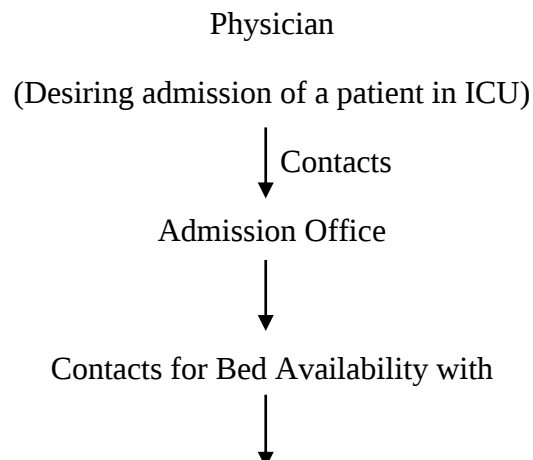
1. Motorized Electric Bed
2. Multiparameter Modular Philips Monitor – mounted on wall behind the bed.

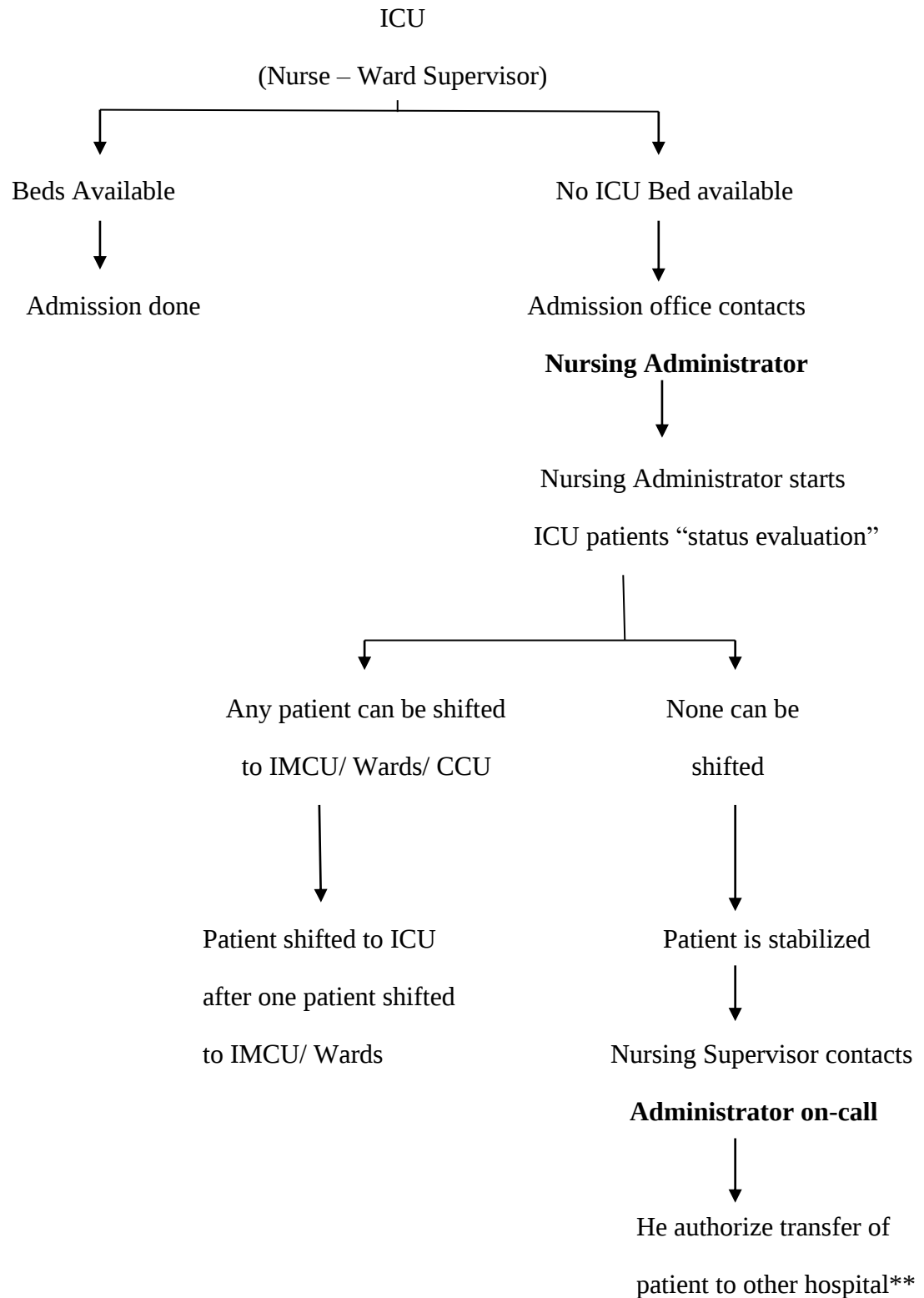
3. Chart/ Locker Trolley
4. Independent wall mounted panel housing 2 each of Oxygen, Air & Vacuum outlets (all connected to central manifold by concealed pipelines)
 - Each bedside monitor is hooked to CENTRAL NURSING STATION MONITOR.
 - Other Equipments (common to all beds):
 - Mechanical ventilators
 - Syringe pumps
 - Feeding pumps
 - Nebulizer
 - 2 beds have access to piped RO water & can be used for bed-side dialysis.

Bed Side Procedures Performed

1. X ray
2. Central Line
3. Arterial Line
4. Tracheostomy
5. Intubation
6. HD Catheter
7. Ultrasound
8. Dialysis
9. R Tube

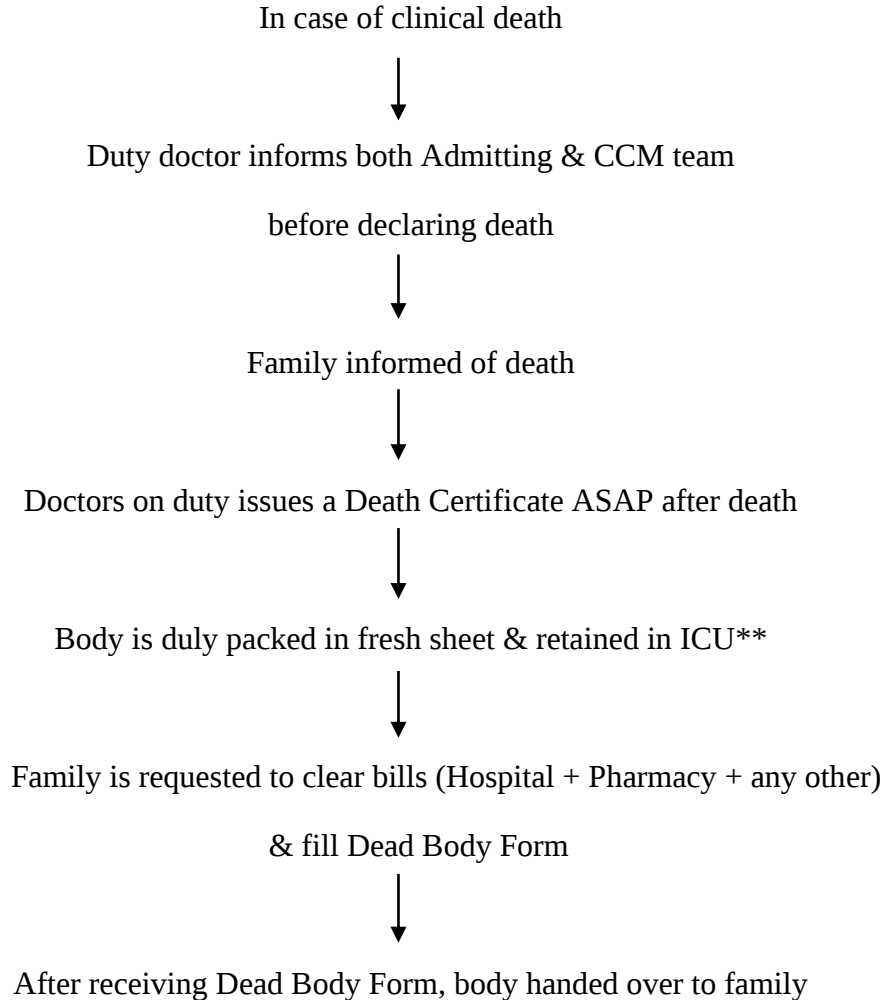
Patient admission procedure in ICU





**AIMS Physician is responsible to locate a physician who will admit the patient to another hospital.

DEATH PROTOCOL



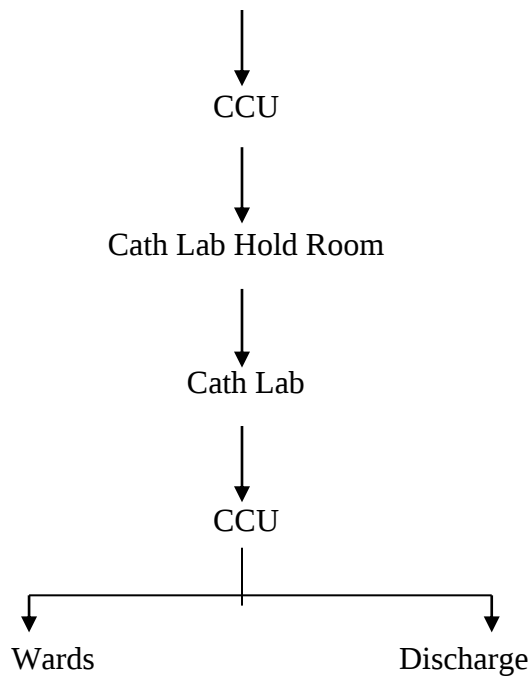
** Body retained in ICU for a maximum of 1 hr. after death and up to 4 hrs in exceptional situation on orders of Duty Doctor & beyond that on orders of GM (Admin). Thereafter body is sent to Mortuary and security is informed.

If MLC case, packed body is sent to mortuary & handed over to police by security.

Cath Lab

- **Layout:** 6th floor
- **Department Head:** Dr. Rishi Gupta
- **Workflow:**

Patient from Cardiac OPD/ Emergency/ Wards (rarely)



- **Common procedures in Cath Lab:**
 - Coronary Angiography (CAG)
 - Coronary Angioplasty (PTCA)
 - Balloon Mitral Valve Valvoplasty
 - Permanent Pacemaker
 - Single chamber
 - Dual chamber

- Bivent
- Combo device
- AICD

- Peripheral Angiography
- Peripheral Angioplasty
- Renal Angioplasty
- Electrophysiology study- Radiofrequency Ablation (EPS-RFA)

- **EQUIPMENT:**

PHILIPS FD-20 Flat panel (for coronary & vascular intervention)

- **Manpower:**

1. 4-5 Nursing staff
2. 2 Technicians
3. 1 GDA

- **No. of Procedures per Day:** 8-10

CCU

Beds: 16

Store: 1

Clean utility room: 1

Dirty utility room: 1

Daily Checks & Checklist:

- Inventory & Expiry Check Reg.
 - CCU Crash Cart Inventory

- CCU Fridge Inventory
- CCU Medicine Trolley I & II
- CCU Capital Item
- CCU Cup Board Inventory
- CCU Laundry
- Equipments daily working checks.

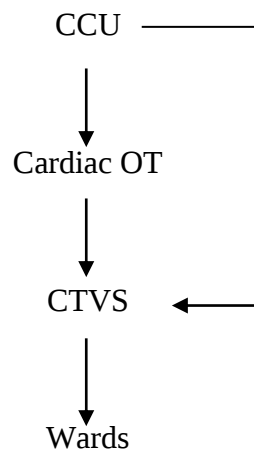
CTVS

- **Layout:** 3rd floor
- **Beds:** 6
- **Store room:** 1
- **Doctor's room:** 1
- **Clean utility room:** 1
- **Dirty utility room:** 1

Nursing staff: 15

GDA's: 5

Workflow:



Daily Checks & Checklist:

- Defibrillator checking
- Daily Inventory & Expiry Check Reg.
 - CTVS-ICU Crash Cart Inventory
 - CTVS-ICU Line Trolley Inventory
 - CTVS-ICU Medicine Trolley
 - CTVS-ICU Capital Item I & II
 - CTVS-ICU Store Medicine in steel almirah
 - CTVS-ICU - CSSD & Fridge Inventory
- Other equipments daily working checks.

EMERGENCY COMPLEX**Layout:** -1 Basement

- Nurse Station
- Emergency OT: 1
- Store room: 1
- Isolation Room: 1
- X-Ray Room: 1
- Ultrasound Room: 1
- Doctor's Duty Room: 2
- POP Room: 1
- Casualty Ward

Infrastructure:

- Beds: Total: 11
 - For Casualty: 6
 - For Triage: 5
- Desktops: 2
- Intercoms: 2
- X-Ray Viewer: 3
- Printer: 1 (connected with Billing)

- Fridge: 1
- Fire extinguisher: 1
- Wheelchairs: 2
- Stretchers: 3
- Ambulances: 2 ALS Ambulances + 1 BLS Ambulance + 1 Van Ambulance

N:P Ratio: 1:1

Staff & Hierarchy:

Doctors: CMO – Dr. Hilal Ahmad & Dr. Satish Chaku

RMO'S – 5

Nursing and other staff: 24

AMBULANCE SERVICE FLOW

Call centre executive attends the emergency call



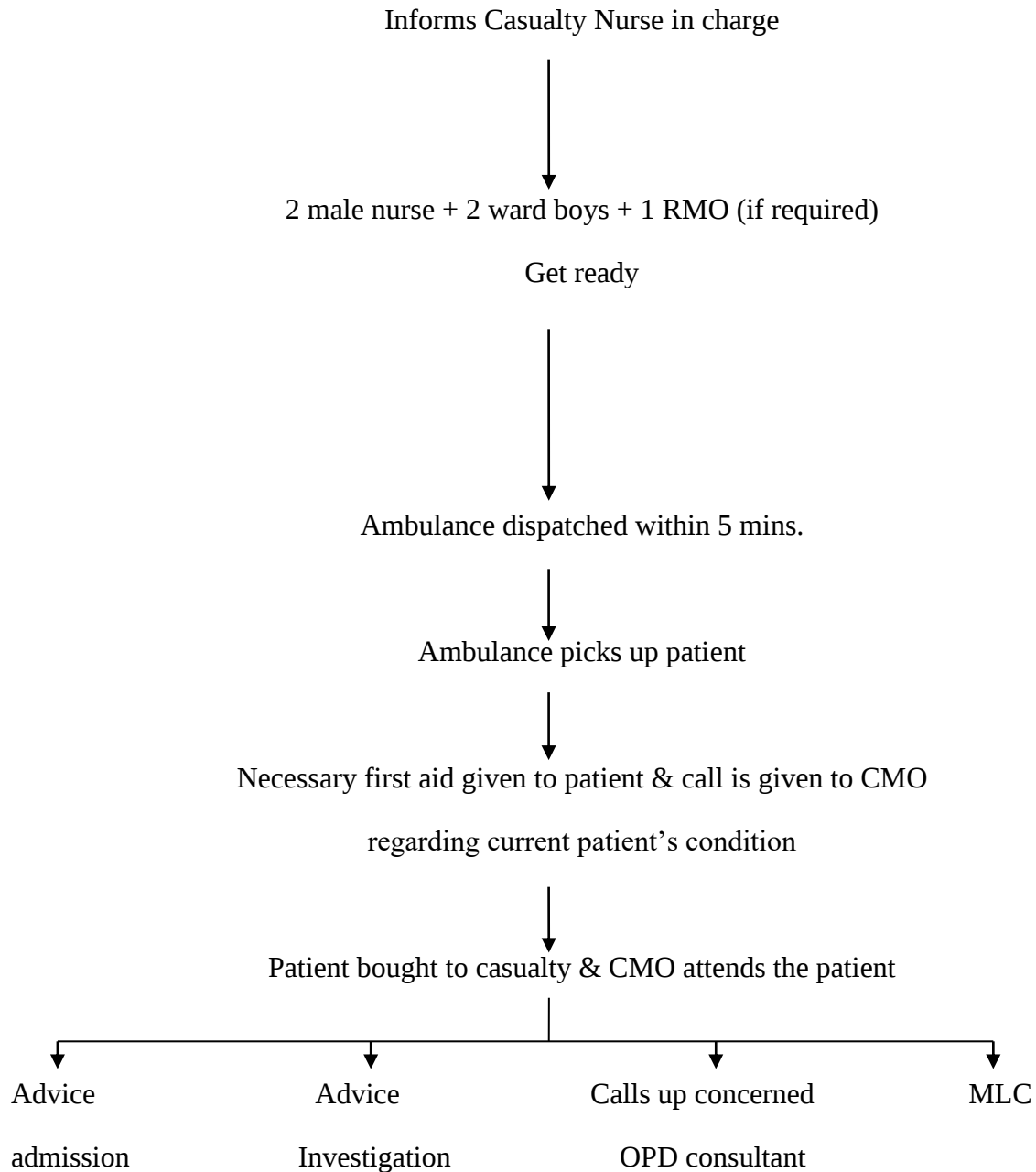
Transfer the call to Emergency's CMO



Notes down necessary details like:

- Place/address
- Time of call received
- Details of call
- Name & contact no of caller





CSSD

(Central Sterile Supply Department)

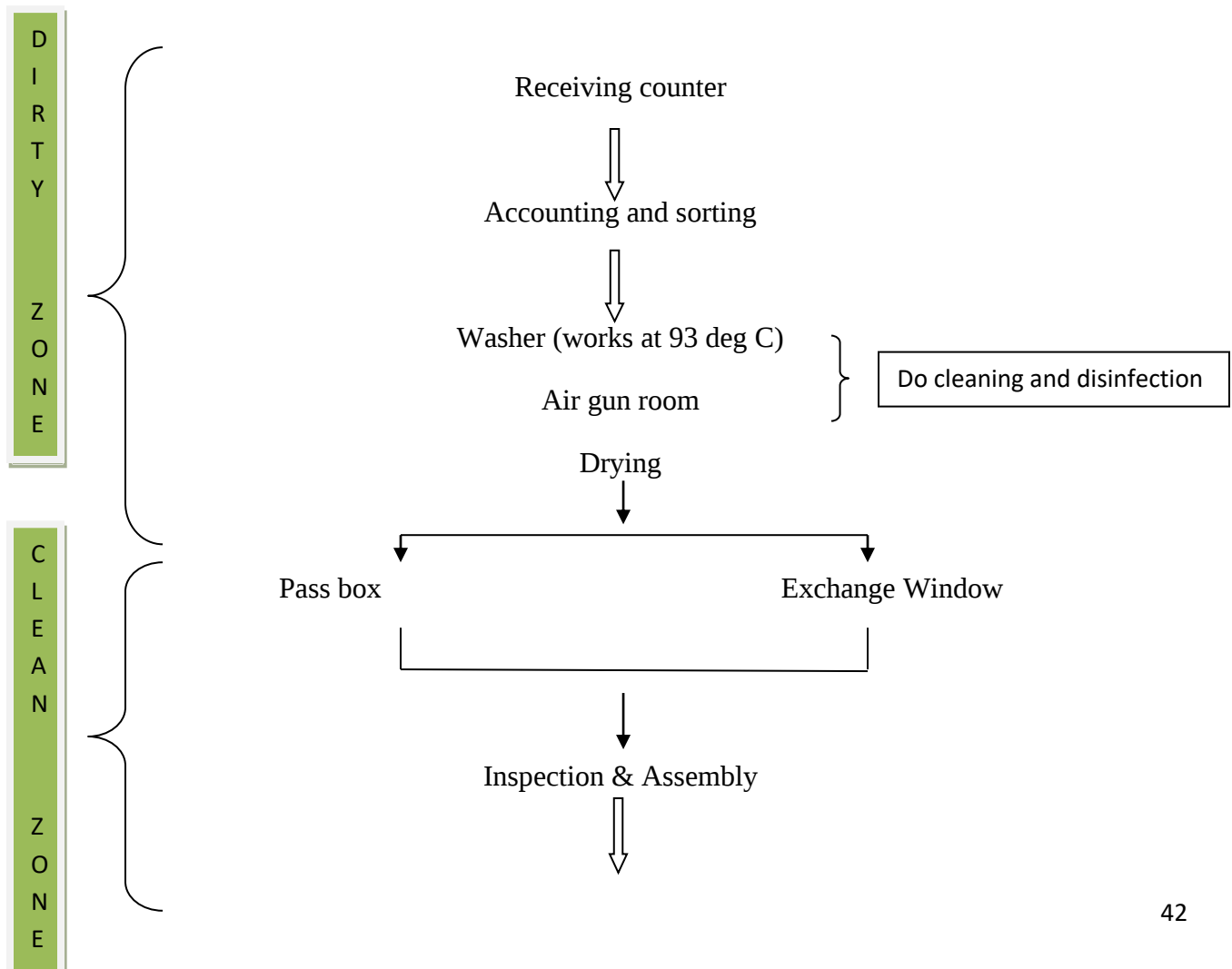
Layout: 4th floor (“U” shaped layout)

Staffing: 1 Supervisor
3 Technicians
1 Asst. technician

Infrastructure:

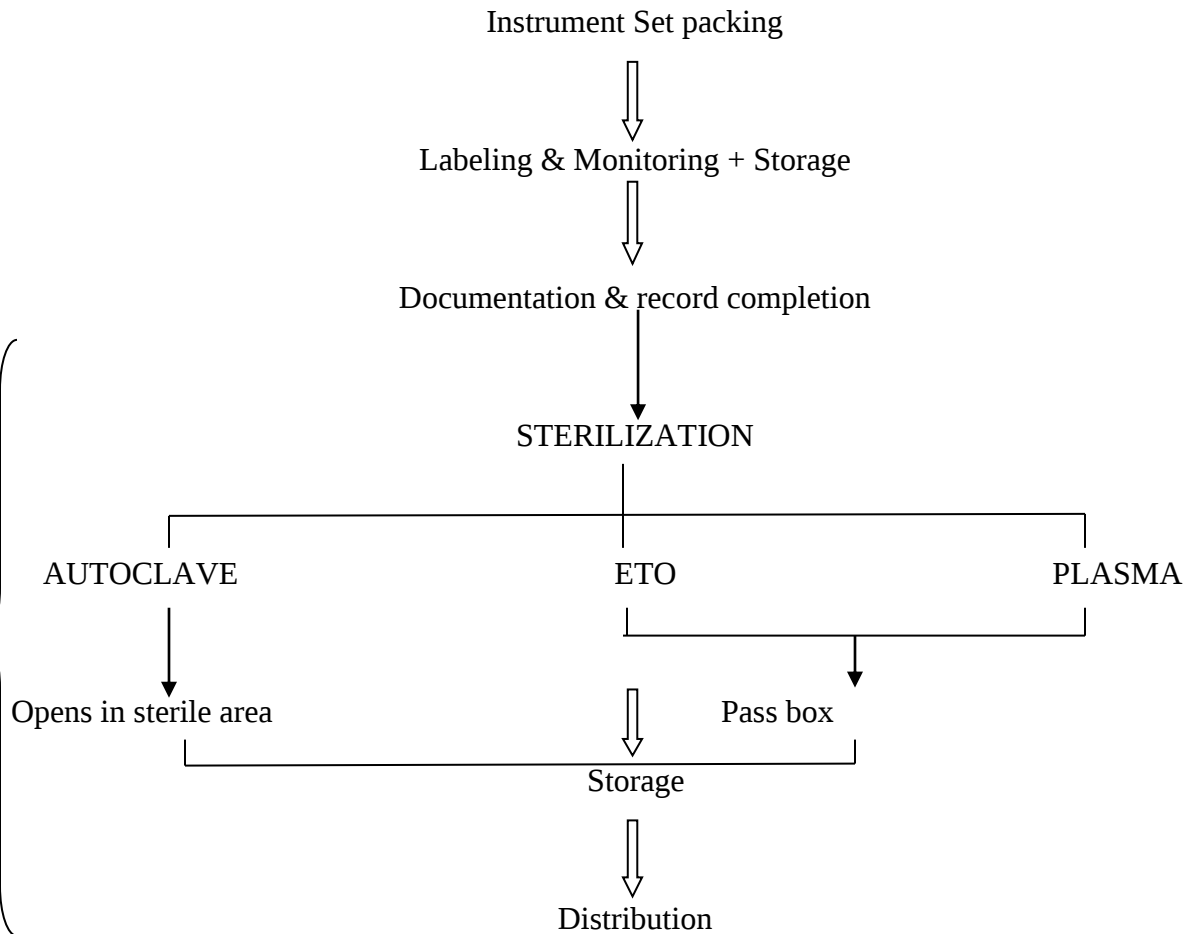
- Desktop -1
- Intercom -1
- Printer -1
- Autoclaves (Pulse vacuum type) -2
- ETO -1
- Plasma sterilizer -1
- Steam boiler -3
- Auto sealer -1
- Loader -2

DEPARTMENT WORK FLOW:



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METHODS OF STERILIZATION USED:

<u>AUTOCLAVE</u> <u>(Steam sterilization)</u>	<u>ETO</u>	<u>PLASMA</u>
--	------------	---------------

- No. of autoclaves – 2 - Type – Pulse vacuum type - No of cycles per day – Acc. to load. <u>Temp/time/pressure.</u> 121 deg C/ 15 mins/ 1.2 kg 134 deg C/ 4 mins/ 2.2 kg STERILIZATION CHECK : <u>Bowie Dick Indicator (Chemical Indicator)</u> Once a day <u>Biological Indicator : <i>G. Stereothermophilus</i></u> Once a week	- Number – 1 - No of cycles – usually 1 / day (But can vary acc. to load) <u>Temp</u> – 54 deg C 12 hour cycle STERILIZATION CHECK : ✓ <u>Biological indicator <i>Bacillus atrophaeus</i> :</u> Each load.	- Number – 1. - Not regularly used. Used in case of emergency; when ETO not in use. <u>Temp</u> – 45 deg C 50 min cycle. STERILIZATION CHECK : ✓ As such no biological indicator available. ✓ Therefore, its use is limited and only for emergency purpose. ✓ But <i>Bacillus atrophaeus</i> can be used.
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MONITORING:

PHYSICAL MONITORING	CHEMICAL MONITORING	BIOLOGICAL MONITORING
- Gauges - Graphs - Process Logic Controller (PLC)	- Class I Indicator : Interlocking Tape applied on packs. - Class II Indicator : Bowie Dick + Batch Monitor - Class VI Indicator : To be put in packs.	<i>G.stereothermophilus</i> <i>B.atrophaeus</i>

Packing paper used :

- Linen
- Medical grade paper:
 - Used for ETO
 - Lasts up to 6 months

- 3. Tyvec paper: - Used for plasma
Expensive
- 4. SMS paper : - Zig-zag concept
 - Holes which seal themselves at a particular temperature
 - Costly
 - Not usable if any moisture present

Labeling:

Autoclave I/II, Process No/ Date of Sterilization/ Date of Expiry/ Indicator Slip/ Contents

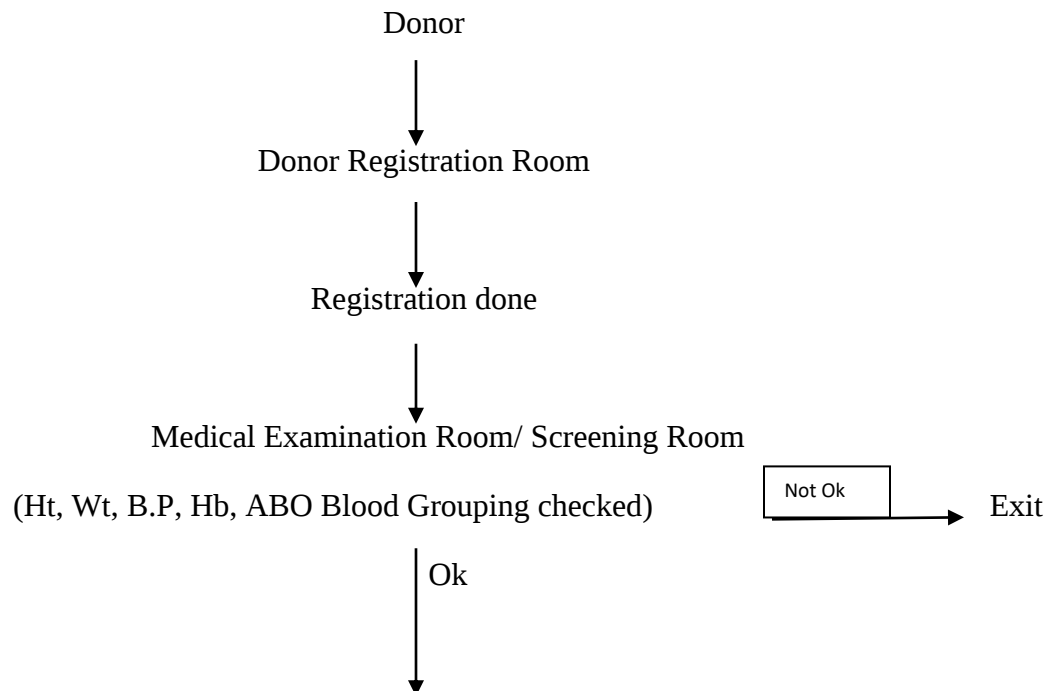
BLOOD BANK

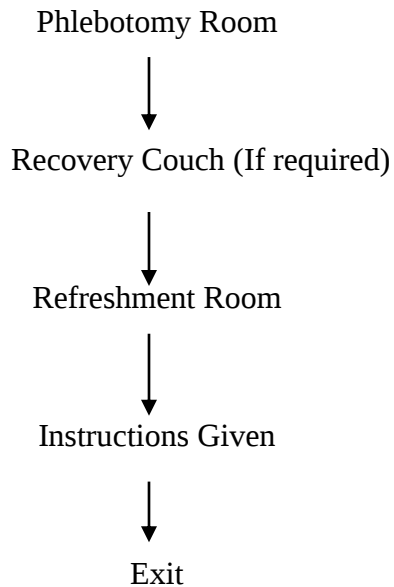
Layout: 4th Floor

Total staff: 8

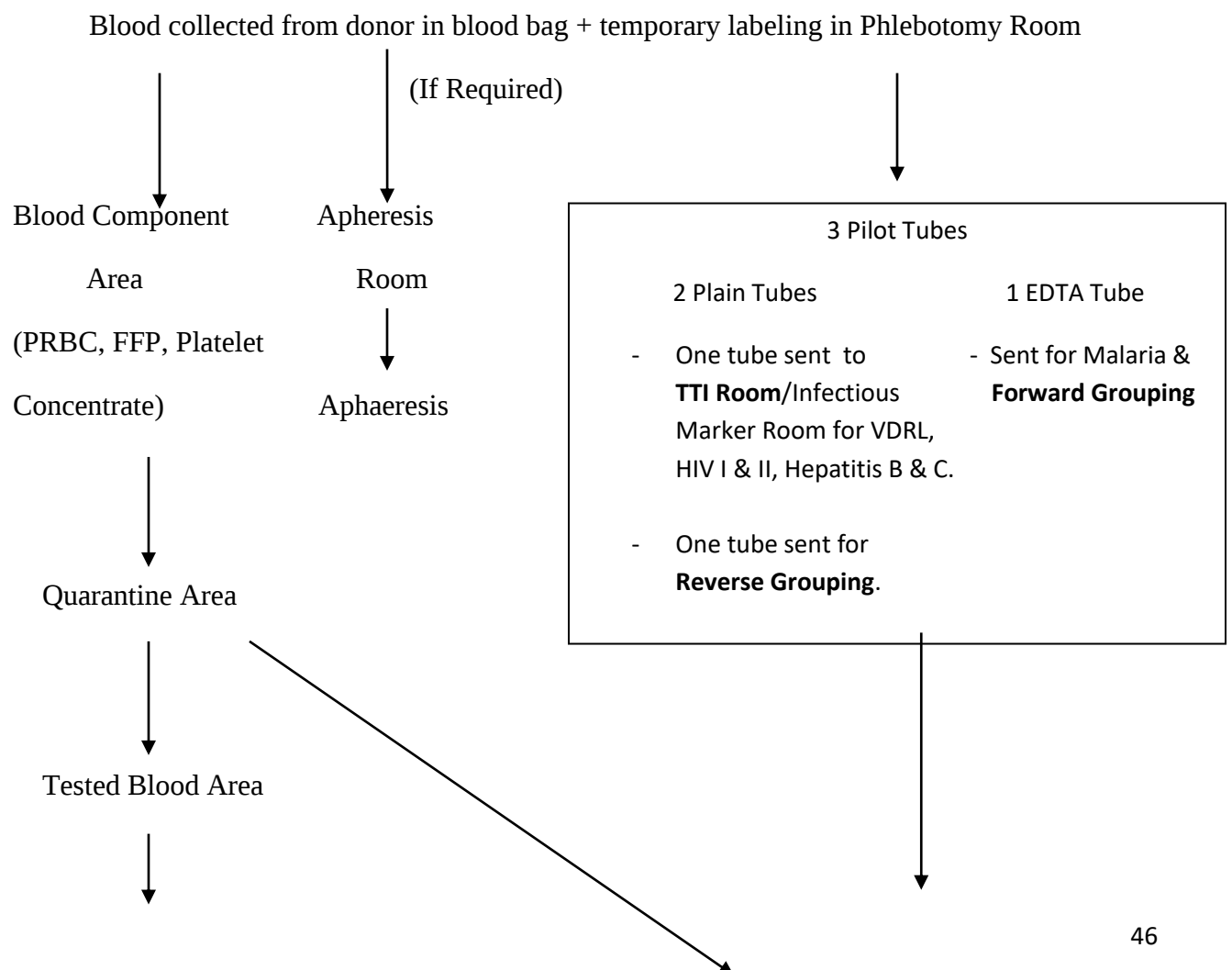
Department Head: Dr. Ramesh Chandna

FLOW OF DONOR:

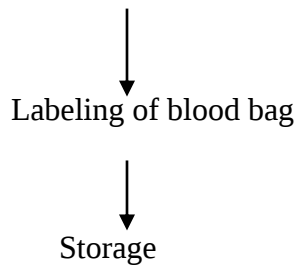




Movement of Donor's Blood:



Cross Matching Room/ Red Cell Serology
(ABO Grouping & Rh Compatibility done)

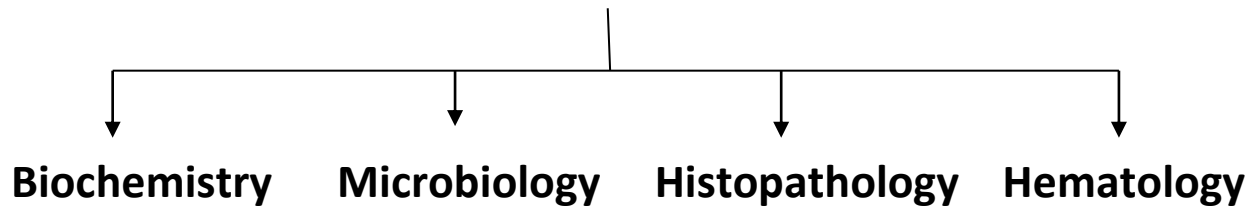


- If tested +ve, then blood bag is brought to **WASH ROOM**.
- Autoclaved
- Discarded as per laid down rules.

Infrastructure of the blood bank

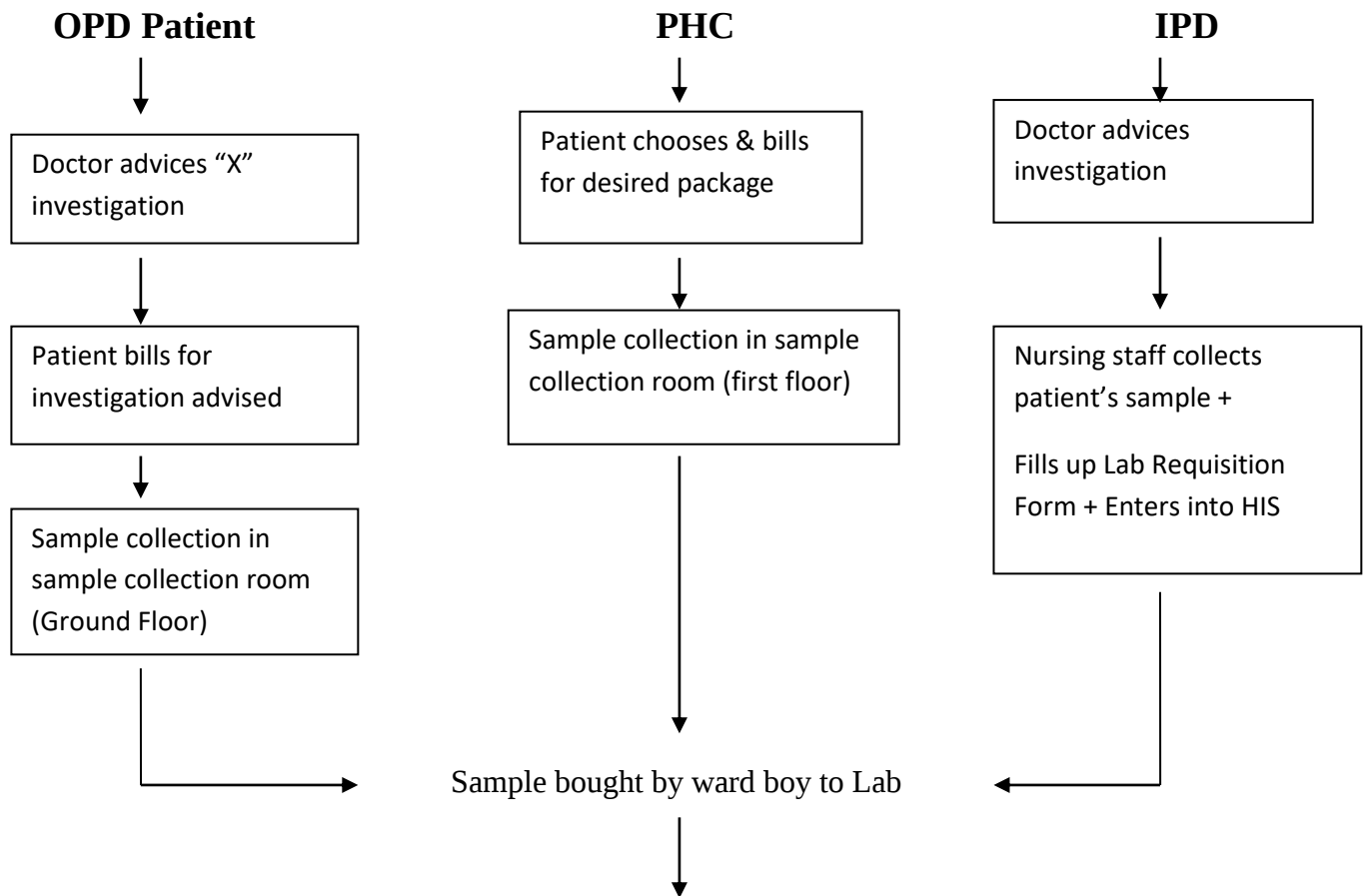
- **Donor Registration Room**
- **Medical Examination Room**
- **Donor room/Phlebotomy/Bleeding room-** Blood is collected in this room.
- **Apheresis Room**
- **Refreshment Room-** After donating the blood, refreshments are provided here.
- **Component Room:** Here collected blood is formed into different components.
- **TTI/ Infectious Markers Room-** Here Blood is checked to rule out any kind of infection in the collected blood.
- **Cross matching Room (Serology room) -** Here Blood is tested & cross matched.
- **Store Room/ Record Room-** All the records and inventories are stored here.
- **Wash & sterilization Room-** Here any blood tested +ve for any infection or unmatched blood is discarded.

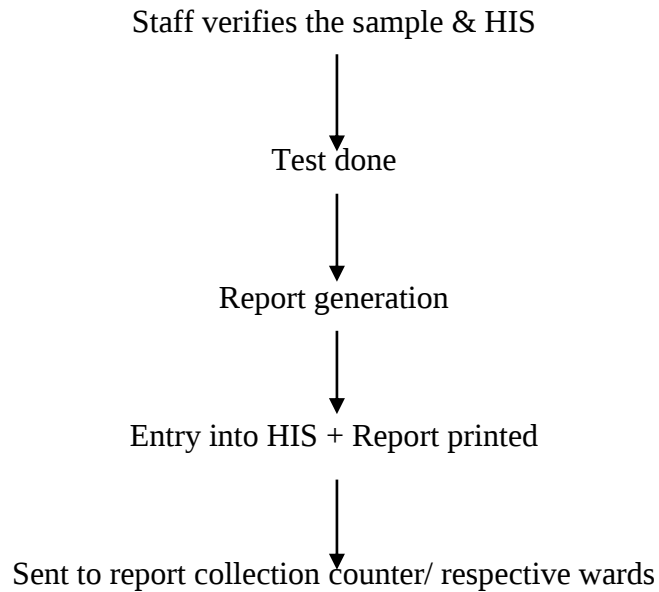
Laboratory Services



Layout: 4th floor

Workflow:





Equipments:

- Synchron CX 5- Pro (Beckman Coulter) – Fully Automatic Chemistry Analyser with Random Axis
- Vitek 2 compact – For Automated identification & Sensitivity Testing
- Bact Alert 3D- Blood Culture Machine
- Sysmex XT- 2000i
- Sysmex KX- 21
- Cytocentrifuge.

IMAGING & RADIOLOGY

Services provided:

- CT
- ULTRASOUND

- X-RAY
- MRI
- MAMMOGRAPHY
- BONE DENSITOMETRY

Staff & Hierarchy:

- Director
- 5 Senior Consultant Radiologists
- 1 Resident Radiologist
- 1 Part time Radiologist
- 1 Senior Manager
- 1 Senior Radiographer
- 1 Female Radiographer
- 6 Radiographers (X-Ray)
- 3 Radiographers (MRI)
- 5 Radiographers (CT)
- 3 Typists
- 1 Ultrasound Coordinator
- 1 Staff Nurse
- 6 GDA
- 1 Front Office Receptionists

Equipments:

- High End Digital X-Ray machine
- Mammography machine
- 1.5 T MRI Machine
- PET/CT Scan*
- 3D & 4D Ultrasound Machine
- Bone Densitometry Machine

*AIMS is equipped with the first PET/CT in this region. The PET/CT is one of the most advanced diagnostic equipments available today for early detection of cancer.

WORKFLOW:

OPD Patient



Doctor advises "X"
investigation



Patient bills for
investigation advised



PHC



Patient chooses & bills
for desired package



IPD



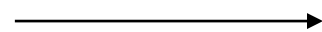
Doctor advises
investigation



Nursing staff fills
X-Ray/ Ultrasound/ MRI
Requisition Form



Ward boy brings
patient to Radiology Dept.



Patient in Radiology Dept.



Investigation done



Film & Report generation



Film & Report sent to Radiology Reception
desk/ respective ward.

HUMAN RESOURCE DEPARTMENT

Layout: -2 Basement

Jobs & Responsibilities:

- Manpower Planning
- Internal Job Posting Process
- CV Selection
- Credential Policy
- Confirmation and Appraisal
- Staff Queries
- Follow up with selected candidates
- Issuing of appointment letters
- Disciplinary Policy
- Leaves sanctioning
- Payroll
- Budgeting for departments
- Doctors payout
- Duty roster
- Issuing of Experience letters
- Investigation of staff grievances
- Issues of slow cause
- Salary statement
- Full n final settlement
- Outsource staff attendance
- Induction and orientation
- Finger print report checking
- Manpower planning

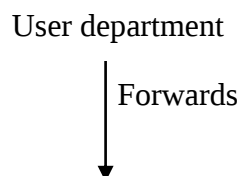
- Dispatch of salaries
- Pre recruitment calls
- Organizing interviews
- Housekeeping of CV'S
- Preliminary interviews
- Joining formalities
- Leave record maintenance
- Issuing of I-Cards
- Conducting Employee Welfare Programme e.g. Nurse Day
- Issuing of Refreshment Coupons
- Conducting Exit Interviews.

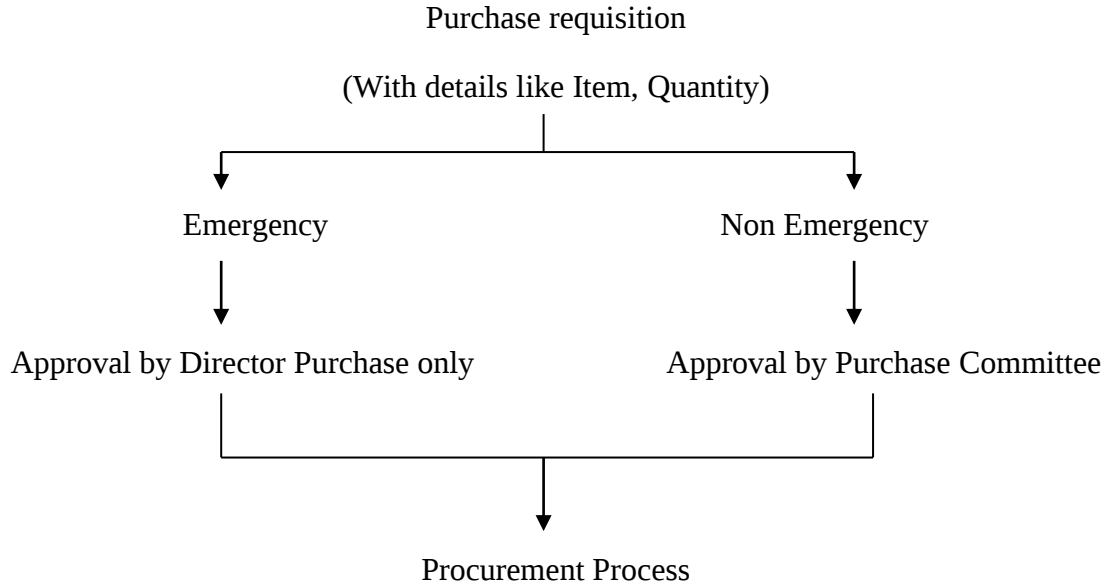
PURCHASE DEPARTMENT

Layout: 1st Floor (Admin Block)

Total Staff: 4

Procurement of medical consumables and drugs





Procurement Process



Recommendation Note signed by

- H.O.D
- Director Purchase/ Medical
- Finance



Final Approval of Recommendation Note by CMD



Purchase Requisition converted to **Purchase Order**



Circulation of Purchase Order copies

Procurement of Stocked (Regular) Medical Consumables & Drugs

Stores raise Purchase Requisition on HIS

(Based on – Quarterly Requirement

- Reorder Level)



Purchase Requisition approved by Store In Charge



Purchase Department receives Purchase Requisition on HIS



Purchase Requisition converted to Quarterly Purchase Order

(as per approved Rate, Terms, Conditions)



Circulation of Purchase Order copies



Vendor forwarded a copy of Purchase Order

(Mentioning – Delivery Schedule

Quantity Schedule)

STORES

Layout: -2 Basement

Staff: 5

WORK FLOW

Department in need of material

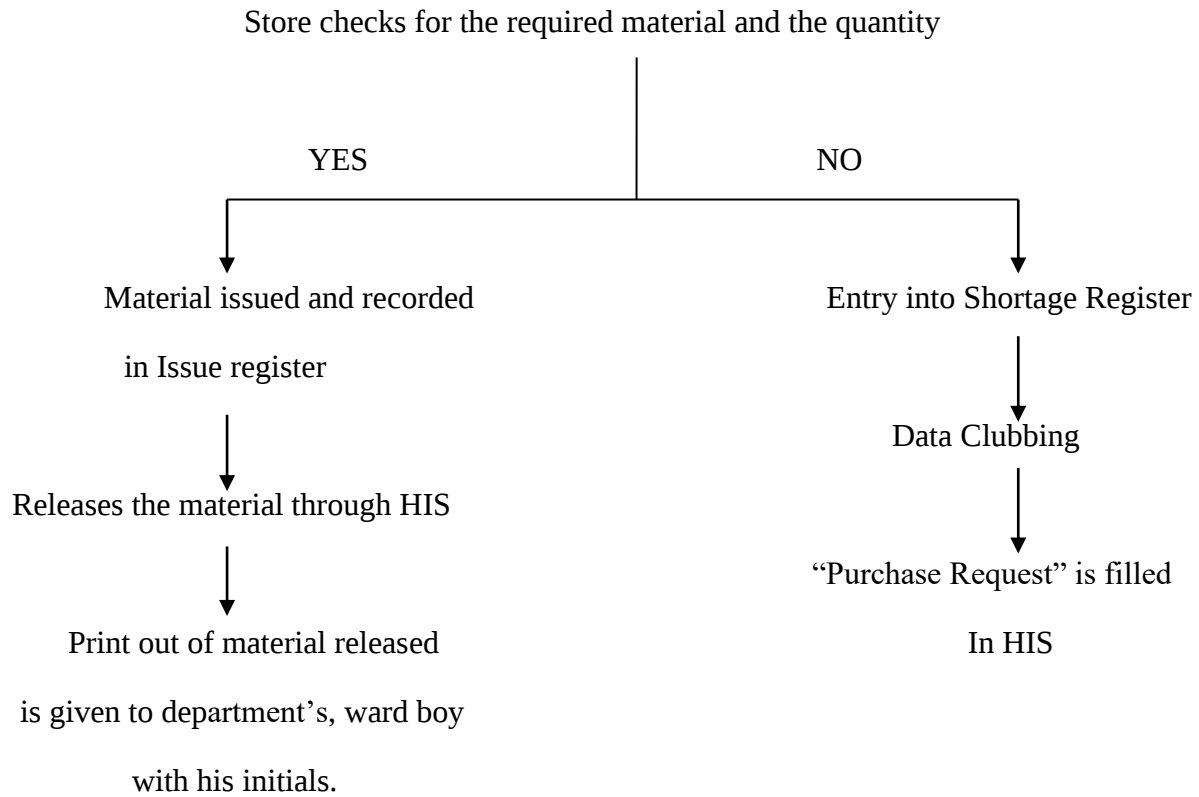


Through HIS Indentation

or Requisition slip

Store





Duties of Store Incharge:

- Forecasting requirement
- Budgetary requirement
- Inventory control
- Stock verification
- Inspection & Quality control
- Communicate the purchase department about requirement
- Minimize pilferage.
- Distribution
- Disposal of surplus/ obsolete material

IPD PHARMACY

Layout: -2 Basement

Status: Outsourced

Staff: 13

Work Flow:

In-Patient Wards, All ICU's, OT, Emergency, CTVS, Cath Lab



Ward boy/Nurse brings Request for Drug indentation through “**Indoor Patient Drug Requisition Form**”



IPD Pharmacy



Issues drugs



Ward boy/ nurse take drugs to respective ward/OT/ICU

FINANCE & ACCOUNTS

Layout: -2 Basement

Total Staff: 9

Scope of Services:

The scope & complexity of service provided by this department (which includes billing aspect also) is:

- Business building insights.
- Areas for lowering cost & improve profitability.
- Updating of bills on daily basis for IPD patients.
- Customer (Patient's Attendant) satisfaction for billing concern.
- The Billing staff has overall responsibility for coordination of various functions (Pharmacy, Wards etc.) and daily basis report for admission , Collection to higher management and Administration of the department, and they maintain a log of all the problems that arise on day to day basis and provide the necessary solution as deemed proper and reasonable.
- Daily collection of money from various sources in the hospital and its deposition in bank.
- Maintenance of petty cash.
- Budgeting.
- Department serves all departments for finance & billing aspect.
- Making Balance sheet, Profit & Loss Statement for the financial year.
- Maintenance of file of all employees, vendors, creditors & debtors.

MARKETING DEPARTMENT

Layout: -2 Basement

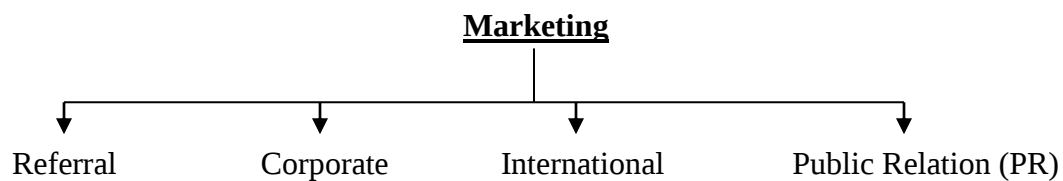
Total Staff: 8

Marketing Pattern:

- **<150 Km Zone:** Marketing of Super specialty & all Specialties
- **150-300 Km Zone:** Marketing of 3 Specialties : Oncology, Cardiac & Orthopaedics

- **>300 Km Zone:** Marketing of Super specialty : Oncology

Marketing Format:



1) Referral :

- Society Education Programmes
- General Practitioners
- Get together
- Free Community Checkup Camps
- Diagnostic centres
- Pharmacy stores
- School, College Camps: Debate Competitions, Drawing Competitions etc

2) Corporate

- Empanelment/ Corporate Tie ups
- Health Talks
- PSU's Tie-ups
- TPA Tie Ups

3) International

- Embassy

4) P.R

- Press Conferences

- Shoots/ Interviews
- Print Media: Newspapers, Magazines
- Branding: Events, Conferences, Trade shows.

Information Technology (IT) Department

Layout: -2 Basement

Staff: 7

Functions and responsibilities:

- To keep the servers alive
- To keep the network alive
- To keep internet connection alive
- To take care of all the desktops & laptops in the organization
- To track the records of all the desktops
- To keep an eye on the employees desktops.
- To resolve the complaints of the employees
- Training of the other staff for the HIS

2 Major Work Areas: General Administration & HIS

Access to Information:

Divided into 3 codes:

1. **Red:** Very restricted access to information e.g Wards
2. **Yellow:** Restricted but more than red. Access only after permission from higher authority.

3. **Green:** Large access to information. Available with higher authority.

HIS Backup:

- Done once a day
- 2 internal backups
- 1 backup outside the hospital.

MEDICAL RECORD DEPARTMENT

Layout: -1 Basement

Staff: 8

Infrastructure:

- Desktop: 1
- Printer: 1

Organogram: Mr. Gaurav

Functions of MRD

- To ensure that the AIMS Hospital has complete & accurate medical record for every patient.
- Public dealings wrt. to TPA **queries, Bill verification, MLC cases and dealing with Summons to the doctors, hospital.**
- To maintain high level of confidentiality as far as patient's records are concerned.
- To ensure that the records are Identified and stored safely to prevent unauthorized changes and easily retrieved whenever required.
- Issuing **Emergency, Medical, Birth & Death certificates.**
- To generate **Bed Occupancy reports** (daily & monthly), **P.N.D.T, M.T.P** reports (monthly).

Record Retention Periods:

- IP Record : 05 years
- Emergency Register : 02 years
- MLC Records : Not to be destroyed
- Birth/Death Register : Not to be destroyed
- OPD documents : Handed over to the patient

CLINICAL NUTRITION & DIETICS DEPARTMENT

Layout: -2 Basement

Functions:

- Catering to Inpatients, Hospital staff, Patient attendants.
- Diet counseling
- Education
- Smooth provision of laid out 9 diets to the patients.
- To check the patient, Attendant & Staff food for quality, preparation, presentation and packing.
- Coordinating closely with the Nursing shift in charges for changes in the patient's diet or new admissions etc.

	<u>Diet Card Color</u>	<u>Tray Color</u>
Normal	White	Red
Diabetes Mellitus	Yellow	Yellow
Chronic Renal Failure	Green	Green
Renal Stone	Pink	

SECURITY SERVICES

Status: Outsourced to **APOLLO SECURITY SERVICES**

Total security personnel: 58

- 34: In morning shift
- 24: In night shift

Operational CCTV's : 23

Area of Operation (Present):

To deal with 3 “M”- Man, Material & Machinery

- Visitor's check
- Surveillance of hospital through CCTV's
- Theft , Burglary
- Violence
- Handling of MLC
- Material movements in & out of the hospital
- Handling visitor's pass
- In case of patient's death, handling emotional chaos of attendants
- Parking management and traffic control.

HOUSEKEEPING

Status: Outsourced

Advantages of outsource:

- ✓ Reduce workload of management e.g. no salary, PF, Uniform headache.
- ✓ Manpower management is the responsibility of contractor
- ✓ Reduction in cost if services are contracted out.

FUNCTIONS:

- Clean Floor ,Wall Ceiling
- Discharge Cleaning
- Remove Garbage
- Replace Supplies In Utility Rooms
- Clean Housekeeping Equipments
- Clean Room, Wards, Reception, OT, ICU Etc.
- Infection Control
- Pest & Rodent Control
- Odour Control
- Environment Hygiene
- Sanitation Hygiene
- Checking Cleanliness Of All Areas
- Control & Reporting Of All Maintenance Works

- Hospital Waste Disposal
- In-Service Training
- Cooperation with Other Depts.

LAUNDRY SERVICES

Layout: -2 Basement

Equipments:

- | | |
|--------------------------------|-----|
| • Dryers | : 2 |
| • Washing machine (each 50 kg) | : 2 |
| • Extractors (each 25 kg) | : 2 |
| • Hand presses | : 2 |
| • Steam Boilers | : 1 |
| • Calendar Machine | : 1 |
| • Trolleys | : 6 |

Total Manpower: 11

MAINTENANCE & ENGINEERING

Layout: -2 Basement

Total Staff: 41

Components:

- Electricals
- Sewage treatment plant
- Carpentry
- Pump House + Fire Fighting
- HVAC
- Plumbing

Functions:

- Preparing the plan for equipment daily and preventive maintenance, spare parts and consumable for the department so that each facility works properly & there is minimum breakdown.
- Engineering is also responsible for controlling and ensuring for optimum use of power, water and diesel.

BIO MEDICAL ENGINEERING DEPARTMENT

Layout: 1st floor

Records Maintained:

With Biomedical Engineering:

- Complaint Register
- Daily Equipment Checklist
- Weekly Equipment Checklist
- AMC Records
- Preventive Maintenance Service (PMS) Record
- Calibration Records

With Gas Manifold:

- Gas Manifold Log Book for Oxygen, Nitrous Oxide

- Complaint Register
- Cylinder Issue Register
- Cylinder (Out Party) Register
- Shift Register

SPECIAL STUDIES:

- **Operation Theater Quality Indicators**
- **Clinical Audit on CABG over EURO Score**
- **Clinical Audit on Quality Indicators of Dialysis**
- **Discharge Planning**

Project on Operation Theater Quality Indicators

Abstract

✚ *Operation theatres are popularly known as the 'heart of hospital'.*

INTRODUCTION

Operation Theatre complex is an important profit making unit of clinical hospital operations. The OT Complex includes mainly three areas apart from other supporting areas-Operation rooms/ theatres, Pre-operative recovery area and post-operative recovery area. The concept of Zoning is followed in construction of OT Complex. The numbers of operation-rooms depend upon the size & type of hospital. Operation Rooms are located in central part of hospital building from ground floor to various floors of hospital. This special unit is capital intensive part of hospital as heavy investment is required to build it and to purchase the fixed and movable equipment. Heavy fixed and variable cost is incurred on run this unit. So, it makes utilization of this unit mandatory not only to increase revenues but also to curtail the cost and keep it within control. Utilization studies are conducted by hospitals especially by secondary and tertiary care hospitals in order to achieve two purposes-to increase revenue and to reduce costs in order to optimize profits/ save losses.

The Literature Review

Operating Theatre scheduling is a major contributing factor to enhance the efficiency of operating theatres. Accurate and real time scheduling assist in predicting staffing needs, ensuring availability of required equipment and supplies and thus contribute to a smooth running operating theatre. An accurate schedule must list realistically the starting and ending time of each surgery. In addition, conflicts of schedules shall be resolved by the operating theatre manager. Schedules need to be rearranged according to agreed-on principles among all surgeons. Many surgeons schedule their surgeries as emergency case thus staff might need to extend duty hours, other operations might need to be postponed thus result in corrupting the whole day plan. In addition some surgeons might accuse that the case was not an emergency. Accordingly literature does not question or challenge the level of urgency however recommend classifying surgeries as elective, where patient condition will not be affected as a result of delaying the surgery for a minimum of forty-eight hours, and nonelective. Under the concept of creating a realistic

operating schedule, reflected on the importance of having a real time based schedule which is essential to predict human and resource needs. The real time requires timely updating as the day goes on. In addition, literature reflected the importance of defining the start time of each surgery and the impact of providing a precise duration to avoid confusion, allow proper allocation and distribution of surgeries and standardize data collection. The turn over time describes the time delay between the first and the second surgery and measured by calculating the time the first case leaves an operating theatre on that day schedule to the time the second patient enters that same theatre and the impact of this delay on the suspension of all consecutive surgeries which will result in stretching the schedule time and extending the operating theatre working hours. Macario (2010) scored the value of turn over time in his study so that it reflects poor performance if it is more than forty minutes and for good performance it shall be less than twenty five minutes

OBJECTIVES

1. Identify characteristics of OT management, which maximize effective OT Utilization.
2. Flag variations in management & practices of OT
3. To study the process flow of Operating Theatre Complex
4. To find out the turnaround time at each end and identify the bottlenecks.
5. To examine the utilization of operation theatre of Asian Institute of Medical Sciences in relation to work load and related bottlenecks if any.
6. Suggest remedial measures for improving the Operation Theatre Utilization.
7. To assess the quality indicators of Operation Theatre (OT Rescheduling)
8. To assess the cost-effectiveness of the OT.

METHODOLOGY

- **Study Design** - Cross sectional , prospective, analytical study
- **Sampling Unit** - Patients undergoing surgery
- **Type of sampling** - Convenience Sampling
- **Sample size** - All patients undergoing surgery in the month of May, 2015
- **Location** - The Primary data is collected on routine basis from OT and recovery area of tertiary care hospital, ASIAN INSTITUTE OF MEDICAL SCIENCES of FARIDABAD.

All the analysis and graphical depictions were done with the help of MS-Excel.

DATA ANALYSIS

On the basis of the data collected for the past one month, we have worked on the following parameters-

- % of Add on cases
- %of Postponed cases
- % of Cancelled cases
- % of rescheduled cases
- % delayed start (8:30) and total cases
- % on time start (8:30) and total cases
- Cost Analysis of Operation Theatre

1. % OF ADD ONS

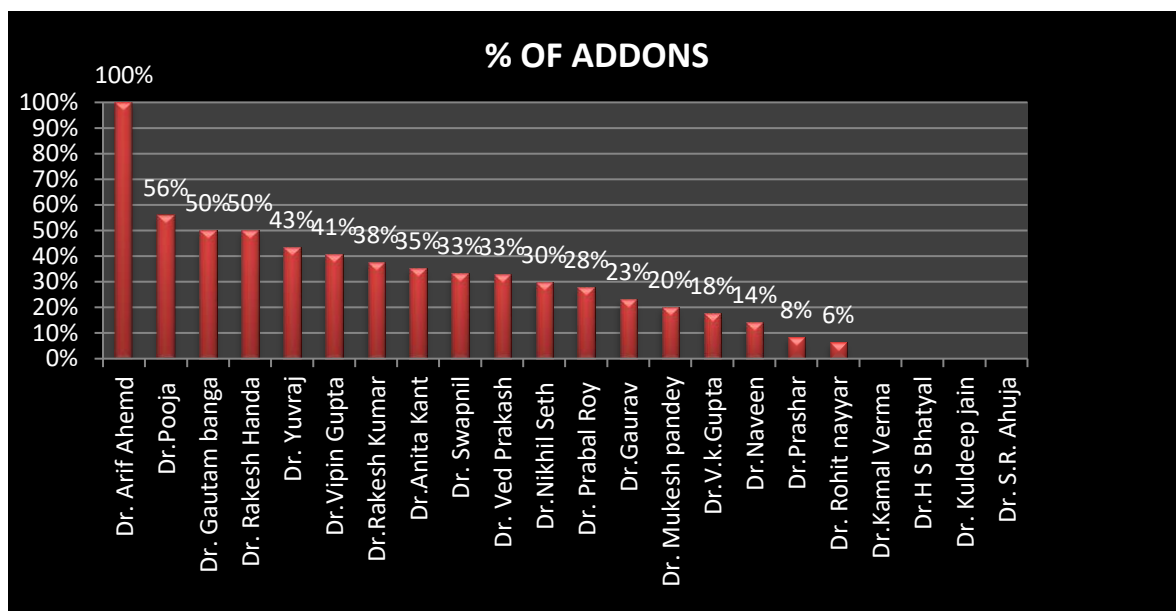
a) % OF ADD ONS= TOTAL ADD ON CASES

TOTAL CASES DONE

Total Add On cases= 188

Total cases done= 582

Average % of Add Ons= $188/582$
= 32%



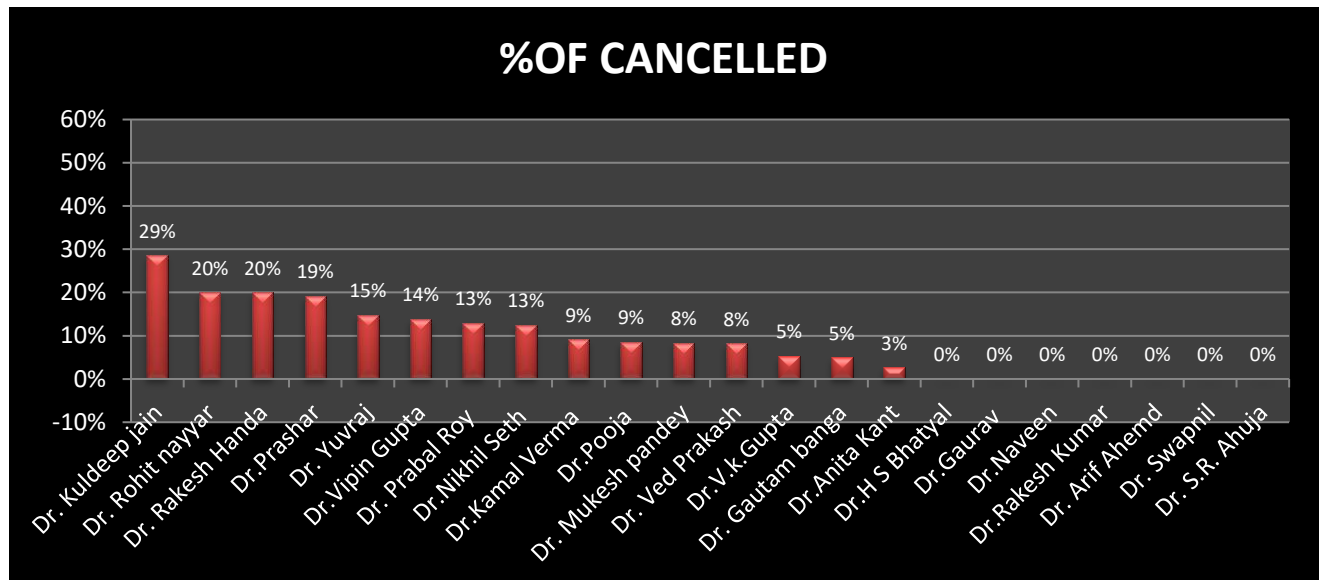
2. % OF CANCELLED CASES

$$\text{\% OF CANCELLED CASES} = \frac{\text{TOTAL CANCELLED CASES}}{\text{TOTAL SCHEDULED CASES} + \text{TOTAL ADD ONS}}$$

Total Cancelled Cases= 73

Total Cases (Scheduled+AddOn) = 677

Average % of Cancelled Cases = 11%

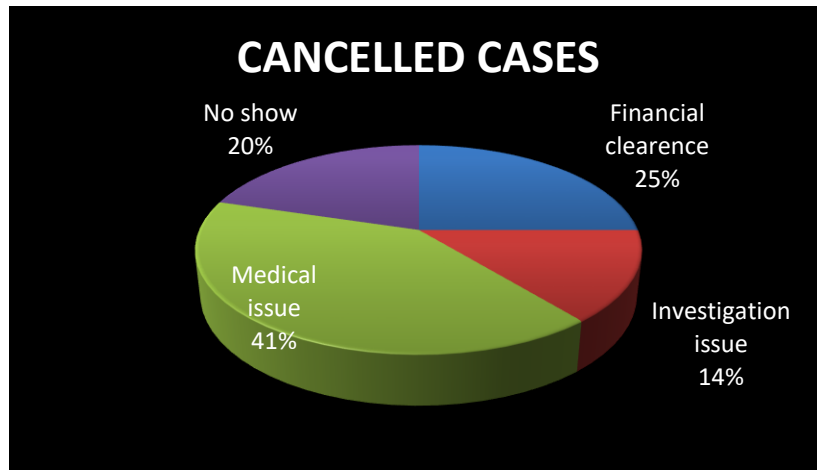


Cancelled cases are mainly due to the following reasons-

- Financial clearance
- Investigation issue
- Medical issue
- No show

Cancellations caused by medical problems are especially upsetting for patients and can be more contentious for members of the medical staff.

- Inadequate preoperative medical optimisation was one of the most important reason for cancellation of cases in our study.
- The major reasons are hypertension, recent onset respiratory tract infection, uncontrolled diabetes and acute onset cardiovascular abnormality. It may also occur due to sudden onset of fever, vomitting or thrombocytopenia.
- Sometimes, patient dint turn up or pre operative instructions are not followed by the patient. These issues may also lead to cancellations.



3. % OF POSTPONED CASES

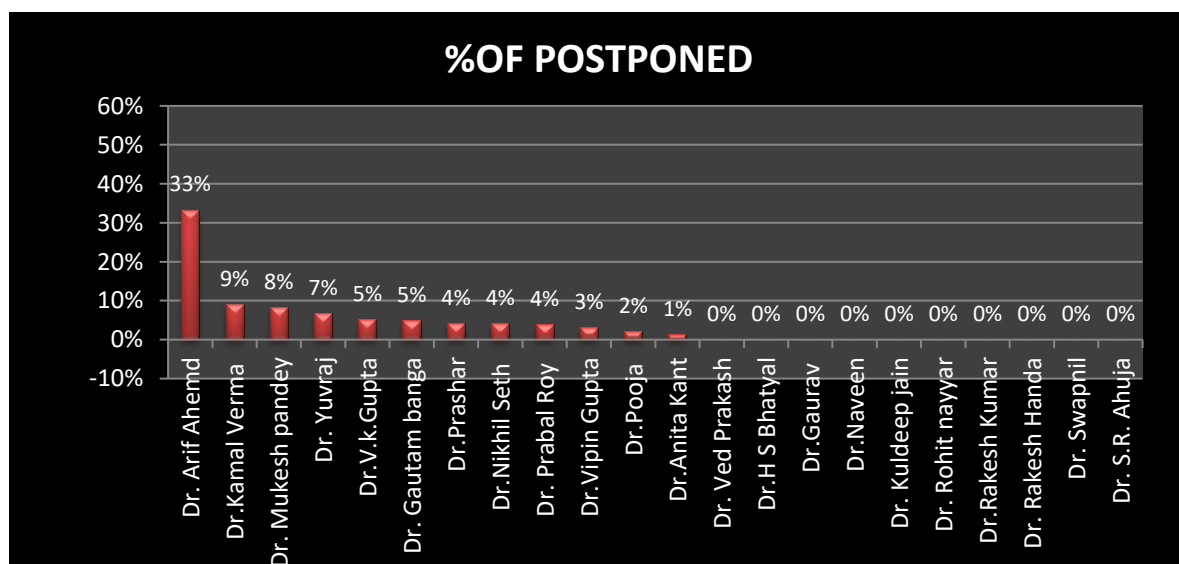
% OF POSTPONED CASES = TOTAL POSTPONED CASES

TOTAL SCHEDULED CASES+ TOTAL ADD ONS

Total Cases Postponed= 23

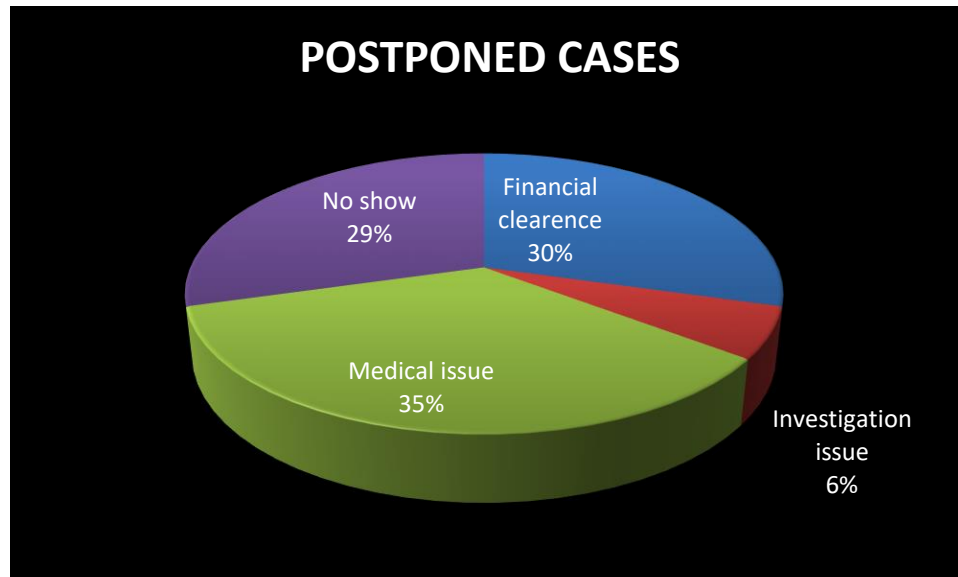
Total Cases = 677

Average % of Postponed Cases = 3%



Postponed cases are mainly due to the following reasons-

- Financial clearance
- Investigation issue
- Medical issue
- No show



4. % OF RESCHEDULED CASES

% OF RESCHEDULED CASES = TOTAL CASES RESCHEDULED

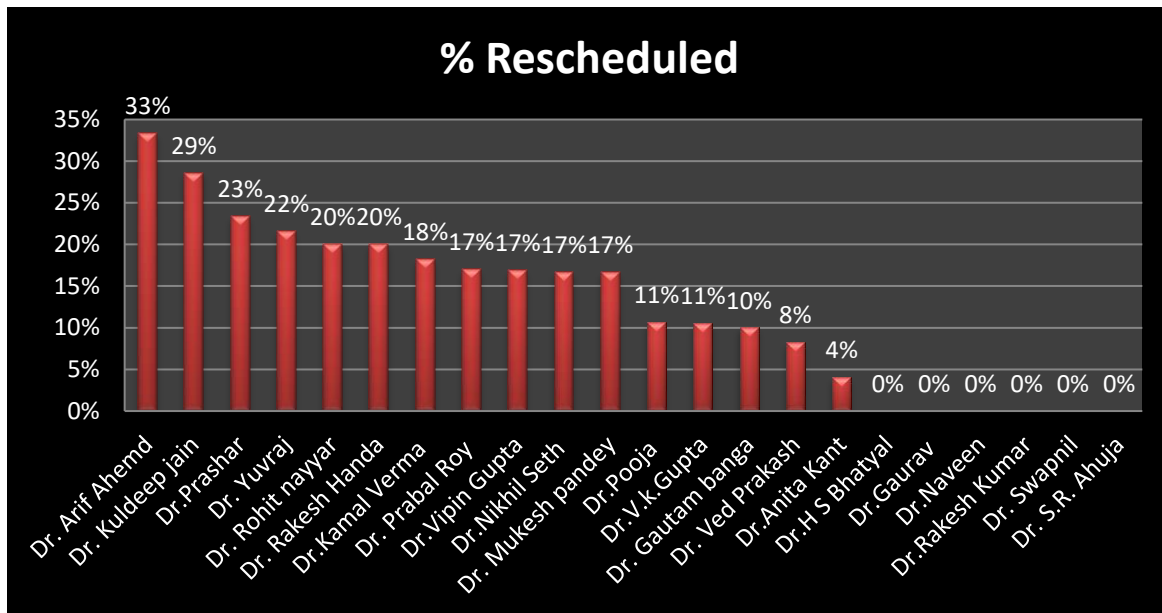
TOTAL SCHEDULED CASES +TOTAL ADD ON

Total Cases Rescheduled = Total Cancelled + Total Postponed Cases

= 96

Total cases (Scheduled+AddOn) = 677

Average % of the Cases Rescheduled= 14%



On the basis of the data collected for 1 month, a **Pivot Table** was made showing the delayed and on time starts percentages for different surgeons of the hospital.

First, the data was collected in terms of scheduled time, Wheel In time and Wheel out Time.

- Total cases: **582**

Delayed Case definition: Cases which exceed 15 minutes from their scheduled time

Then, the time delayed is calculated.

Delay Time = Wheel in time- Scheduled Time

If the Time ≤ 15 minutes



If the Time > 15 minutes



On Time Start**Delayed Start**

➤ **Overall Stats (in numbers) for all Cases for the month of May, 2015**

	% out of Total Cases	Total Cases	DELAYED START	ON TIME START
EMERGENCY CASES	3%	16	0	16
SAMEDAY SCHEDULED	30%	176	1	175
SCHEDULED CASE	67%	390	110	280
Grand Total		582	111	455

➤ **Category wise delay %**

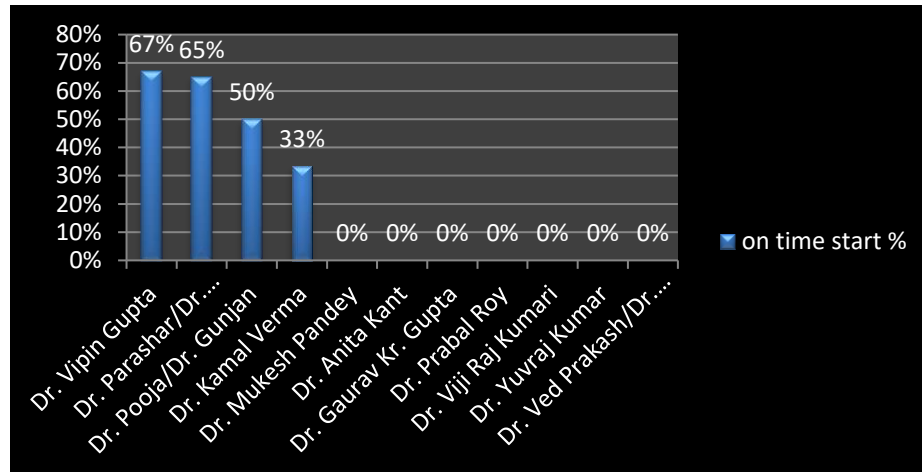
	Delayed Start	On Time Start
Emergency Case	0%	100%
Same Day Scheduled	0.6%	99.4%
Scheduled	28%	72%
Of Total Cases	20%	80%

➤ **Main concern : Delayed Start for Cases Scheduled at 8:30 am**

Cases Scheduled at 8:30 am	51	
Delayed Start (> 15 minutes)	36	71%
On Time Start (<=15 minutes)	15	29%

➤ **Calculated On time Start %**

Consultant Name	on time start %
Dr. Vipin Gupta	67%
Dr. Parashar/Dr. Swapnil	65%
Dr. Pooja/Dr. Gunjan	50%
Dr. Kamal Verma	33%
Dr. Mukesh Pandey	0%
Dr. Anita Kant	0%
Dr. Gaurav Kr. Gupta	0%
Dr. Prabal Roy	0%
Dr. Viji Raj Kumari	0%
Dr. Yuvraj Kumar	0%
Dr. Ved Prakash/Dr. Shailesh	0%



➤ Costing

✚ *For all the Delayed Cases scheduled at 8:30 am*

- Average delay for Cases scheduled at 8:30 am is **50 minutes**
- Maximum peak observed is **3hour 15 minutes**
- Total loss/delay of hours (for 8:30 cases) is **30 hours 35 minutes = 1835 minutes**
- Average cost of OT per hour is **Rs 4500**
- Avg cost of OT per minute is $4500/60$, i.e. **Rs. 75**
- Average Cost of OT = 1835×75 , that equals to 137625
- So, Average Cost of Operation Theatre per month for delay is **Rs 137625**

✚ *For all the Delayed Cases*

- Avg delay for scheduled cases is **1 hour 8Mins**
- Total loss/delay of hours is **124 hrs 30 min = 7470 minutes**
- Avg cost of OT per minute is **Rs 75**
- So, Average Cost of Operation Theatre per month for all the cases for delay is **Rs 560250**

DATA INTERPRETATION

In a study of on-the-day surgery cancellations and postponed undertaken in a tertiary hospital, the main reasons are issue in (i) Financial clearance (ii) Investigation issue (iii) No show (iv) Medical issues. Surgery was postponed or cancelled in the OR mainly for changes in medical condition either medical risk outweighed the benefits of surgery, or alternative treatments were used.

Elective surgical case cancellations form a persistent problem that has negative impact on hospital; operation theatres require substantial human resources and outgoings from hospital budget, last minute cancellation of scheduled operations reflects inefficiency in management. Besides, it increases theatre costs and also causes emotional trauma; additional anxiety, as well as frustration and anger, to the patients and their families. The causes are multifactorial.

The decision to postpone surgery in a patient after admission for surgery has psychological, social, and economic implications and is not only based on clinical considerations.

The present study was done to survey the rate of cancellation, postponed, add-on's & rescheduling of the cancelled and postponed cases.

According to our study, the average % of the Add-on cases in the hospital is 28%.

S.No	PARAMETER	Average %
1	Cancelled	11
2	Postponed	3
3	Add Ons	32
4	Rescheduled	14

 *As per the International standards, the average acceptable percentages for these parameters is <10%.*

On comparing our data with international standards, we have observed that the compliance rate for these parameters is less than the international standards except the average % of the Postponed cases.

High percentage of these parameters are somewhere causing the interference with the regular scheduling and functioning of the OT which may further leads to the under or over utilization of Operation Theatre.

The reasons for cancellation were grouped into patient-related reasons, hospital clinical reasons and hospital non-clinical reasons. The cancellation rates could be significantly improved by directing resources to address patient-related causes and hospital non-clinical causes.

Better management could have avoided most of these cancellations

The increased % of Add-on cases affects the quality of services of OT and the Cancellation rate is also higher in add-on cases as compared to scheduled cases. Due to more Add-ons, the OT services are utilized beyond the usual timings and for which we have to pay overtime to the staff who are working beyond their duty hours.

Next important parameter which is an important point of concern is the **Delayed Time**. The delayed cases have a direct impact on the cost to the hospital. As observed in the study for the month of May, the average delay for all the cases is 1 hour 8 minutes that has lead to a total loss of Rs 560250 to the hospital.

As far as the delay of the cases scheduled at 8:30 AM is concerned, the total loss to the hospital is observed to be Rs 137625.

Late starts of cases are an area where improvement is possible. The commonest reasons stated were delay in shifting of patients to OTs from wards and surgeons being late. Delay in readiness of other equipment was also an important reason mentioned.

RECOMMENDATIONS

- First case should reach O.T. in time from the ward, to allow the O.T. to be started on time.
- Perform all the minor procedures in minor O.T. that are attached to the OPD.
- The first case to be done in OT must be In-house so that delay because of late admission of the patient in the hospital can be avoided.
- The Anesthesia and other equipment must be made ready by the assisting staff so that the O.T. starts on time.
- Accountability should be fixed for any delay caused, even if it is because of surgeon.
- A team approach ensuring presence of policies and procedures for improving and ensuring realistic scheduling of theatre lists.

Clinical Audit on CABG over EURO Score

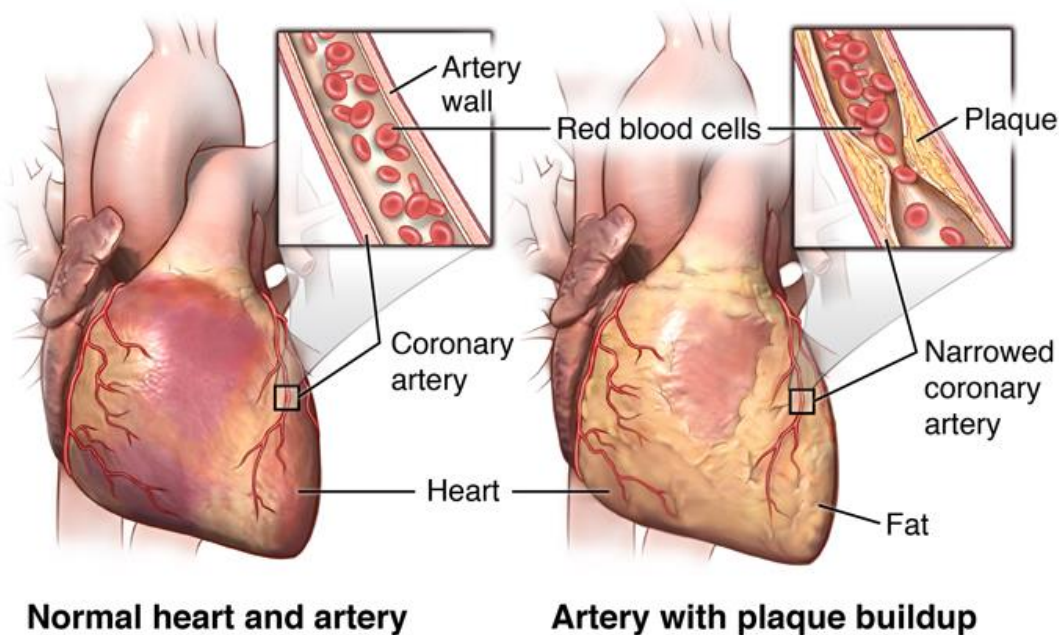
INTRODUCTION

(CABG Coronary Artery Bypass Graft)

What is coronary artery bypass graft (CABG) surgery?

According to the **American Heart Association**, coronary artery bypass graft (CABG) surgeries are among the most commonly performed major operations.

Coronary artery bypass graft surgery (CABG) is a procedure used to treat coronary artery disease in certain circumstances. Coronary artery disease (CAD) is the narrowing of the coronary arteries (the blood vessels that supply oxygen and nutrients to the heart muscle), caused by a buildup of fatty material within the walls of the arteries. This buildup causes the inside of the arteries to become narrowed, limiting the supply of oxygen-rich blood to the heart muscle.



CABG surgery creates new routes around narrowed and blocked arteries, allowing sufficient blood flow to deliver oxygen and nutrients to the heart muscle.

How does coronary artery disease develop?

Coronary artery disease (CAD) occurs when atherosclerotic plaque (hardening of the arteries) builds up in the wall of the arteries that supply the heart. This plaque is primarily made of cholesterol. Plaque accumulation can be accelerated by smoking, high blood pressure, elevated cholesterol, and diabetes. Patients are also at higher risk for plaque development if they are older (greater than 45 years for men and 55 years for women), or if they have a positive family history for early heart artery disease.

The atherosclerotic process causes significant narrowing in one or more coronary arteries. When coronary arteries narrow more than 50 to 70%, the blood supply beyond the plaque becomes inadequate to meet the increased oxygen demand during exercise.

The heart muscle in the territory of these arteries becomes starved of oxygen (ischemic). Patients often experience chest pain (angina) when the blood oxygen supply cannot keep up with demand. Up to 25% of patients experience no chest pain at all despite documented lack of adequate blood and oxygen supply. These patients have "silent" angina, and have the same risk of heart attack as those with angina.

When a blood clot (thrombus) forms on top of this plaque, the artery becomes completely blocked causing a heart attack.

EURO SCORE

It stands for **E**uropean **S**ystem for **C**ardiac **O**perative **R**isk **E**valuation. Operative mortality is a good measure of quality of cardiac surgical care, as long as patient risk factors are taken into consideration. It is a method of calculating predicted operative mortality for patients undergoing cardiac surgery.

If a risk factor is present in a patient, a weight or number is assigned. The weights are added to give an approximate percent predicted mortality. .

SCORING SYSTEM

ADDITIVE EUROSORE

Patient-related factors		Score
Age	(per 5 years or part thereof over 60 years)	1
Sex	female	1
Chronic pulmonary disease	long-term use of bronchodilators or steroids for lung disease	1
Extra cardiac arteriopathy	any one or more of the following: claudication, carotid occlusion or >50% stenosis, previous or planned intervention on the abdominal aorta, limb arteries or carotids	2
Neurological dysfunction disease	severely affecting ambulation or day-to-day functioning	2
Previous cardiac surgery	requiring opening of the pericardium	3
Serum creatinine	>200m micromole/L preoperatively	2
Active endocarditis	patient still under antibiotic treatment for endocarditis at the time of surgery	3
Critical preoperative state	any one or more of the following: ventricular tachycardia or fibrillation or aborted sudden death, preoperative cardiac massage, preoperative ventilation before arrival in the anesthetic room, preoperative inotropic support, intraaortic balloon counter pulsation or preoperative acute renal failure (anuria or oliguria<10 ml/hour)	3

CARDIAC RELATED FACTORS		SCORE
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Unstable angina	rest angina requiring iv nitrates until arrival in the anesthetic room	2
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LV dysfunction	moderate or LVEF30-50%	1
	poor or LVEF <30	3

Recent myocardial infarct	(<90 days)	2
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Pulmonary hypertension	Systolic PA pressure>60 mmHg	2
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OPERATION RELATED FACTORS		SCORE
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Emergency	carried out on referral before the beginning of the next working day	2
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Other than isolated CABG	major cardiac procedure other than or in addition to CABG	2
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Surgery on thoracic aorta	for disorder of ascending, arch or descending aorta	3
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Post infarct septal rupture		4
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LOGISTIC EUROSORE

For a given patient, the “logistic Euro SCORE” is the predicted mortality according to the logistic regression equation.

The Asian Institute of Medical Sciences follows the same set of parameters to calculate the EURO Score.

REVIEW OF LITERATURE

- According to the study “Euro SCORE Predicts Immediate and Late Outcome After Coronary Artery Bypass Surgery” by Fausto Biancari, MD, PhD, Olli-Pekka Kangasniemi, MS, Johannes Luukkonen, MS, MD, Sailaritta Vuorisalo, MD, PhD, Jari Satta, MD, PhD, Risto Pokela, MD, PhD, Tatu Juvonen, MD, PhD, Euro SCORE is a relevant predictor of immediate and late outcome after on-pump CABG.
- According to “The performance of the Euro SCORE and the Society of Thoracic Surgeons mortality risk score: the gender factor” by Niv Ad*, Scott D. Barnett and Alan M. Speir, The utilization of preoperative mortality risk algorithms to determine the best treatment modality for a given patient with cardiovascular disease is a common practice among cardiac surgeons and cardiologists. The Euro SCORE has gained increasing popularity due to its format, and is now used quite extensively.

AIM

To assess the Quality of the Surgical Care given to the Cardiac patients undergoing CABG in the hospital.

OBJECTIVES

1. To assess the Quality of cardiac surgery with respect to European system for cardiac operative risk evaluation (EURO Score).
2. To assess the morbidity factors in cardiac surgeries (Readmission within 30 days).
3. To assess the mortality factors in cardiac surgeries.

STUDY DESIGN AND METHODOLOGY

PERIOD OF STUDY

First three quarters of 2014

TYPE OF STUDY

Retrospective and Exploratory

SETTING

The study was conducted in the Medical Records Department of The ASIAN Institute of Medical Sciences.

SAMPLING TECHNIQUE

Selective Sampling

To capture the maximum data of cardiac surgery, selective sampling has been used.

SAMPLING UNITS

IPD patients

SAMPLE SIZE

94 Patients who underwent CABG in 2014 and 2015

TOOL USED

A Checklist was prepared to use as a tool for collection of data.

S. No.	UHID No.	IPD No.	D.O.A	EURO Score Additive	EURO Score Logistic	D.O.S	ALOS	Post Surgery ALOS	Re- ad within 30 days	Mortality within 30 days	Out- come

DATA ANALYSIS AND INTERPRETATION

Some protocols were used in the Analysis. These are -

➤ CATEGORY OF PATIENTS

Based on the score of European system for cardiac operative risk evaluation, all the cases have been divided into 3 categories.

<u>Category</u>	<u>Euro Score</u>
<u>Low Risk</u>	<u>0-3</u>
<u>Medium Risk</u>	<u>3-6</u>
<u>High Risk</u>	<u>6-10</u>

➤ LENGTH OF STAY

Normal length of stay- 7 days post surgery

Extended length of stay- More than 7 days post surgery

Data Analysis

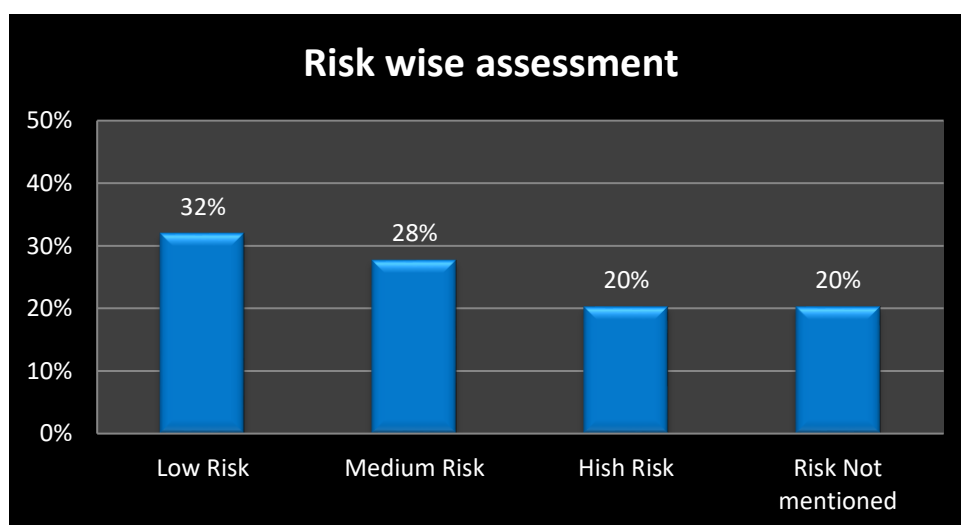
- No. of patients in each category (As per EURO Score)

- Low Risk Category - 30
- Medium Risk Category - 26
- High Risk Category- 19
- Risk Not Mentioned category- 19

Total no. of Patients- 94

% of Patient in a particular risk = $\frac{\text{No. of Patients in the risk}}{\text{Total No. of Patients}}$

Category	In %
Low Risk	32%
Medium Risk	28%
High Risk	20%
Risk Not mentioned	20%



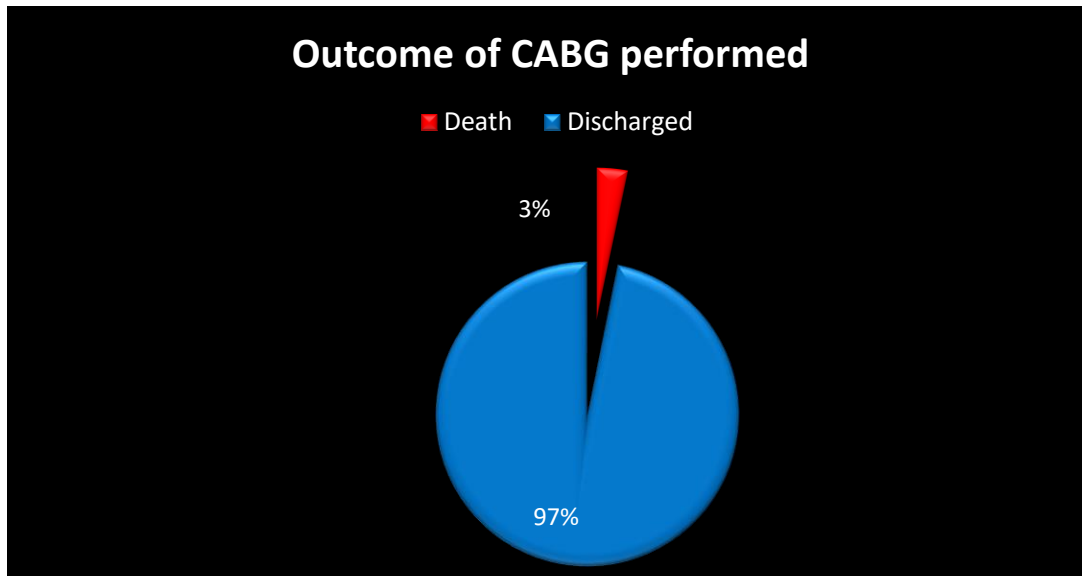
- Outcome of CABG Performed

Out of 94 patient's undergone CABG procedure, 91 patients were discharged and 3 cases of mortality were reported.

% of Discharged or death = $\frac{\text{No. of Discharges or Death}}{\text{Total No. of patients}}$

Outcome	In %	No. of Patients	Total Sample size
Death	3.19%	3	94

Discharged	96.81%	91	94
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- Readmission Cases out of Total Discharges

Total sample- 94

Mortality- 3

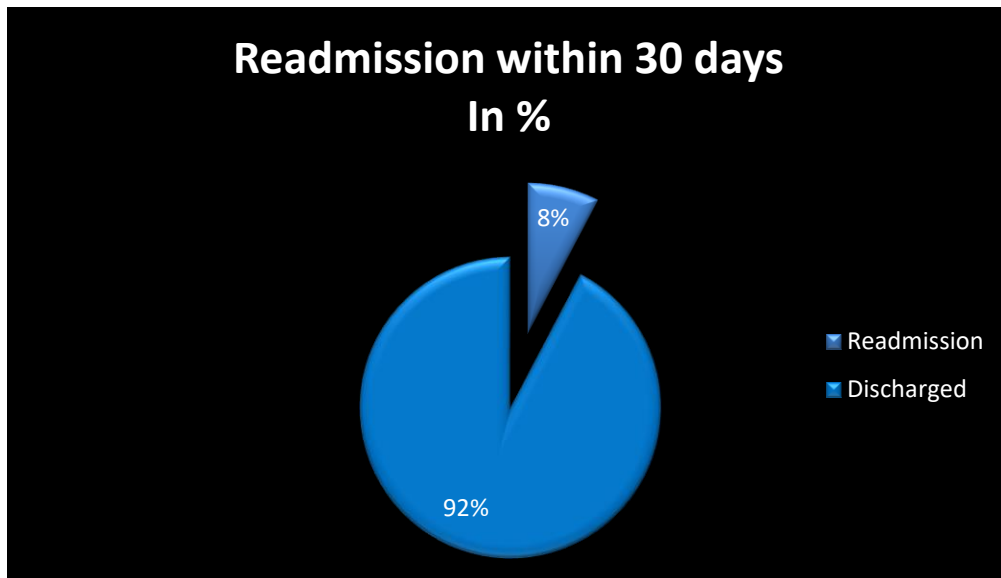
Total Discharges – 91

Out of total discharges, 7 patients got readmitted.

Readmissions – 7

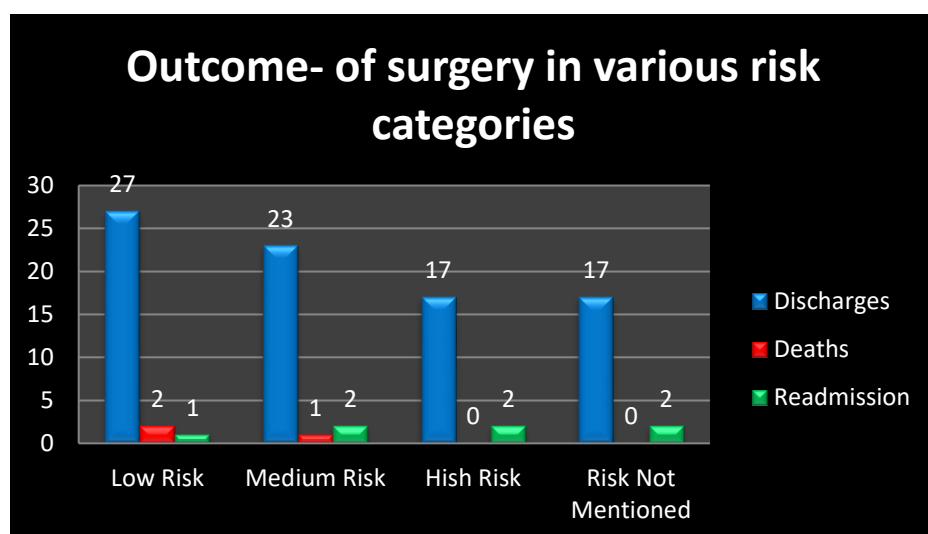
$$\% \text{ of Readmissions} = \frac{\text{No. of patients Readmitted}}{\text{Total No. of Patients Discharged}}$$

Outcome of Discharge	In %	No. Of patients	Total Discharges
Readmission	8%	7	91
Discharged	92%	84	91



- Outcome of Surgery in various Risk Categories

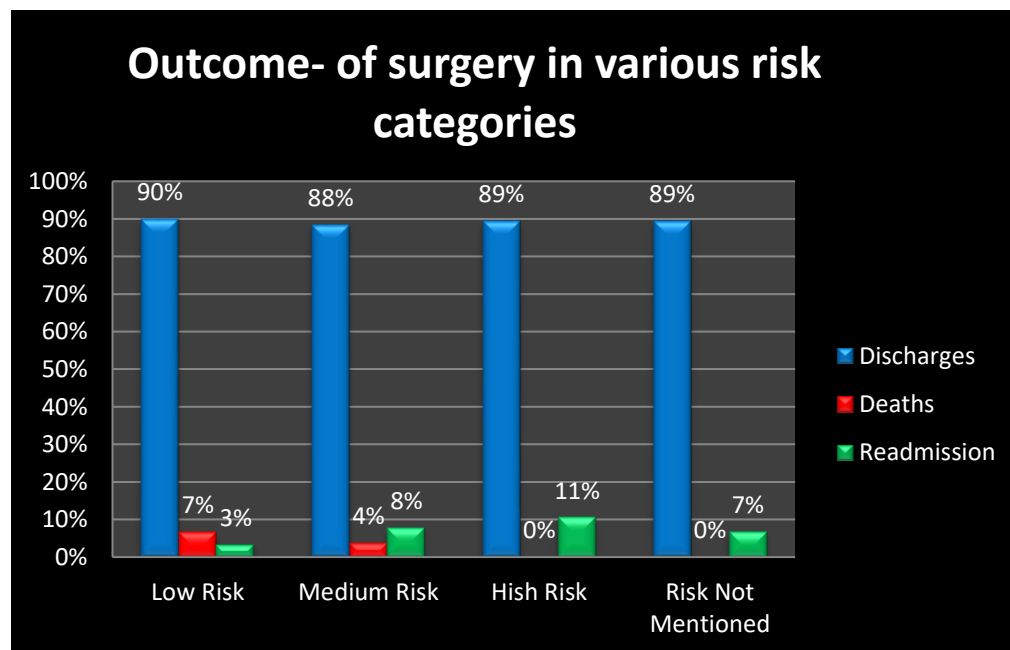
Risk Category	Discharges	Deaths	Readmission	Total
Low Risk	27	2	1	30
Medium Risk	23	1	2	26
High Risk	17	0	2	19
Risk Not Mentioned	17	0	2	19



In a particular Risk Category-

$$\% \text{ of Patients discharged/ Readmitted/ Mortality} = \frac{\text{No. of patients Discharged/Mortality/Readmit}}{\text{Total No. of Patients in that risk category}}$$

Risk Category	Discharges	Deaths	Readmission
Low Risk	90%	7%	3%
Medium Risk	88%	4%	8%
High Risk	89%	0%	11%
Risk Not Mentioned	89%	0%	7%



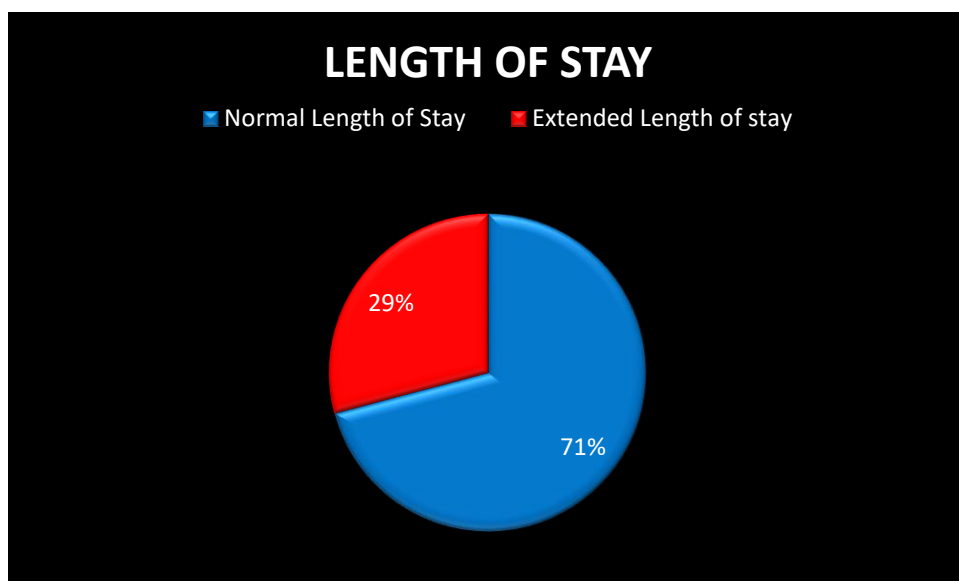
- Length of Stay in Patients

Out of total 91 patients (Discharged), 27 patients had extended length of stay (more than 7 days); whereas 66 patients had normal length of stay (less than 7 days).

% of Patients with ALOS = $\frac{\text{Total no. of Patients with ALOS (less or more than 7)}}{\text{Total no. of Patients Discharged}}$

(Less than or more than 7)

	No. Of cases	Total Discharged patients	%
Normal Length of Stay	66	91	71%
Extended Length of stay	27	91	29%



- Normal/Extended Length of Stay in various Risk Categories

	Post surgery ALOS less than or equal to 7	Post surgery ALOS more than 7	Deaths
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Low Risk	21	7	2
Medium Risk	19	6	1
High Risk	11	8	0
Risk Not Mentioned	13	6	0
Total	64	27	3

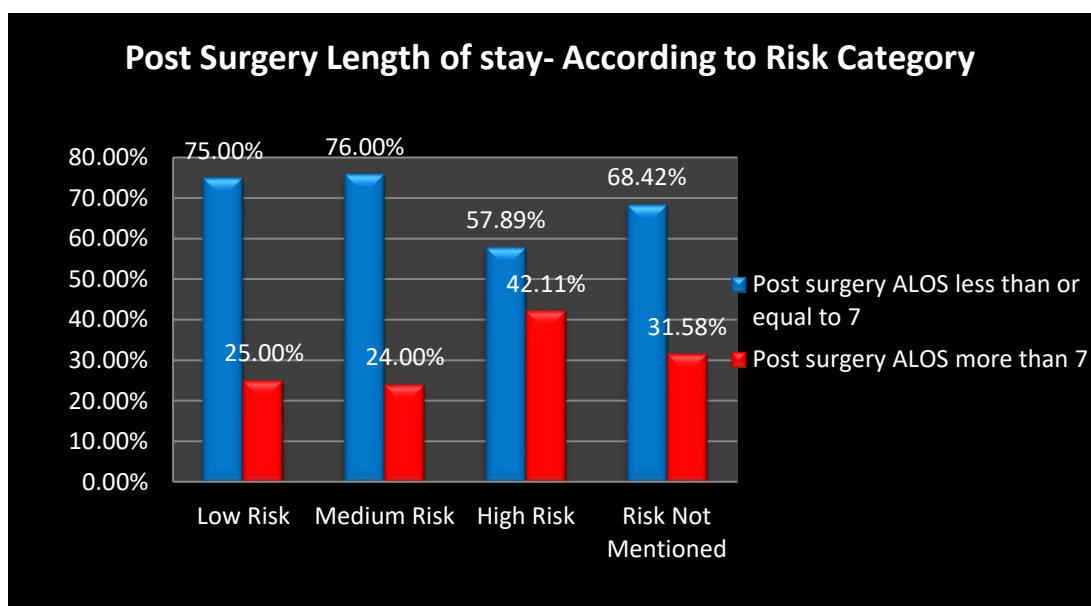
In a particular Risk Category,

% of patients with ALOS = No. of patients with ALOS (less or more than 7)

(Less or more than 7)

Total No. of Discharges

	Post surgery ALOS less than or equal to 7	Post surgery ALOS more than 7	Total Discharges
Low Risk	75.00%	25.00%	28
Medium Risk	76.00%	24.00%	25
High Risk	57.89%	42.11%	19
Risk Not Mentioned	68.42%	31.58%	19



Data Interpretation

- Successes Rate of Cardiac Surgery – 97%.
 - No death occurred in High risk cases.
 - 2 deaths occurred in low risk category.
 - 1 death occurred in Medium risk category.
 - Morbidity percentage (Readmission within 30 days)- 8%
 - Average length of stay in all the discharged cases was- 7.64%
- ✚ The files showing mortality were given to the H.O.D CTVS for further clinical audit. These are the findings--

Reasons for Death of the Patients

Death 1st

Category- Low Risk Patient

Diagnosis-

- Mesenteric Ischemia
- Unstable Angina
- Triple Vessel Disease
- QLD Post PTCA

Death 2nd

Category- Medium Risk Patient

Diagnosis-

- Septic Shock with VAP with single vessel disease.
- Coarctation of Aorta, Severe AR, Severe LVD (EF-15-20%)

Death 3rd

Category- low risk Patient

Diagnosis—

- Ischemic Heart Disease
- Recent Anterior Wall MI (STK+)
- Post MI Angina
- Moderate LV Dysfunction
- Triple Vessel Disease
- Preoperative MI and Cardiogenic Shock

✚ The patient details cannot be mentioned because it is a confidential data of the hospital.

LIMITATIONS OF THE STUDY

1. The study was limited to a period of three months only.
2. Only one tool has been used i.e. Checklist.
3. Old calculator was being used to calculate the risk while new calculator of EURO score is available i.e. EURO Score II.
4. In 20% (19 files) cases EURO score risk assessment has not been done. Ideally the compliance should be 100%.

SUGGESTIONS

1. New model of EURO Score i.e. EURO Score II must be used.
2. Strict compliance for EURO Score needs to be followed.

Clinical Audit on Quality Indicators of Dialysis

Introduction

The burden of end stage kidney disease (ESKD) patients requiring renal replacement therapy (RRT) is increasing day by day. Hemodialysis is one form of RRT which is popular among nephrologists. Many patients are undergoing hemodialysis twice/ thrice a week each for four hours. However, the dialysis procedure is not without risk and it is absolutely important to monitor few parameters for monitoring of dialysis treatment to minimize the risk to kidney patients. Such monitoring is endorsed by **National kidney foundation, Kidney disease outcome quality initiative (NKD-KDOQI 2000) Guidelines.**

Dialysis Department is the Centre of Excellence of the Hospital.

To assess the quality of the dialysis care given to the patients, an audit was conducted in May last year on a sample of 55 patients. On the basis of the findings, Following recommendations were given to the dialysis department-

- Post audit, training should be given to the staff regarding importance of pre-dialysis patient evaluation and post dialysis patient assessment.
- Staff was instructed to comply with all the parameters of pre-dialysis patient evaluation and post dialysis patient assessment.

To reassess the impact of the previous study, a clinical audit has been reconducted in the dialysis department on a sample of 49 patients.

An analytical study has been done to recheck the compliance of the quality indicators of dialysis.

To review the impact or results of the previous study, a PDCA Cycle is performed.

Parameters

In this study, mandatory parameters are being evaluated to check the efficacy of dialysis treatment. Following are the parameters:

1. Viral Marker check (documented) at the time of 1st Dialysis / Quarterly
2. Pre dialysis weight measurement
3. Post dialysis weight measurement
4. Weight gain measurement

5. UF rate calculated in each dialysis
6. Dose of Heparin calculated
7. Pre HD event – BP taken or not
8. Post HD event – BP taken or not
9. Consent Taken or Not
10. Doctor's Sign on Consent Form
11. Patient's Sign on Consent Form

Review of Literature

According to “Integrated Vital Sign Monitoring of Hemodialysis Patients: Pilot Study” done by Sutherland, S1. and Hills, L1., in collaboration with Meredith, D1., Borhani, Y2., Clifton, D2., Fleming, S2., Mosson, A1., Thornley, A1., Tarassenko, L2. And Pugh, C1. Oxford Kidney Unit1, Oxford Biomedical Research Centre2,

It is thought that the use of vital sign monitoring can identify those who are unstable on dialysis and would benefit from frequent monitoring to prevent such common hypotensive episodes.

Studies such as Mancini et al. (2007) are promising in adding to potential technical advancements in preventing hypotension by using blood pressure monitoring as a key parameter in automatic systems.

Also, according to an article on “Patient information: Hemodialysis (Beyond the Basics)” by Jeffrey S Berns, MD, Body weight monitoring is important because kidneys that are failing cannot remove enough fluid from the body, dialysis must perform this task. Accumulation of fluid between hemodialysis treatments can lead to complications. Most patients will be weighed before and after dialysis, and will be asked to monitor their weight on a daily basis at home.

Aim:

To study whether the dialysis unit is adhering to the protocols to reduce the risk of dialysis complications.

Objective:

- To Reassess the compliance of pre and post dialysis patient evaluation
- To Follow up the previous study and reassess the measures taken for the improvement on the basis of PDCA Cycle.
- To improve patient satisfaction by providing safer dialysis treatment.

- To prevent patient related complications, that are :

Hypotension	Central Venous Catheter Infection	Anaphylaxis
Hypertension	Catheter Thrombosis	Pruritis
Muscle Cramps	Cardiac Dysrhythmia	Steal Syndrome
Headache	Pericarditis, pericardial effusion, cardiac tamponade	Cardiac Arrest
Nausea & Vomiting	Dialysis Disequilibrium Syndrome	Dialysis Encephalopathy (Al ⁺)
Fever &/or Chills	First Use Syndrome	Seizures
Fistula/Graft Infection, Thrombosis	Angina	Fistula Aneurysm, Psuedoaneurysm

Methodology:

- **Period of Study:** April 2015 – May 2015 (2 months)
- **Study Design:** Retrospective and Analytical Study
- **Sampling Technique :** Random Sampling
- **Sample Size :** 49 patients undergoing hemodialysis treatment
- **Sampling Units:** OPD/IPD Patients
- **Location:** The study was done in the Dialysis department of the Asian Institute of Medical Sciences.
- **Study Tool:** A Checklist was designed to carry out the study & PDCA cycle.

Clinical Audit Check list					
	UHID No.				
	Patient Name				
1	Viral Marker check at the time of 1st Dialysis				
2	Pre dialysis Wt. measurement				
3	Post Dialysis Wt. Measurement				
4	Wt. Gain Measured				
5	UF rate Calculated in each dialysis				
6	Dose of Calculated Heparin				
7	Pre HD event -BP taken or not				
8	Post HD event -BP taken or not				
9	Consent taken				
10	Doctor's sign				

Discussion:

Healthy kidneys clean your blood and remove extra fluid in the form of urine. They also make substances that keep your body healthy. Dialysis replaces some of these functions when your kidneys no longer work

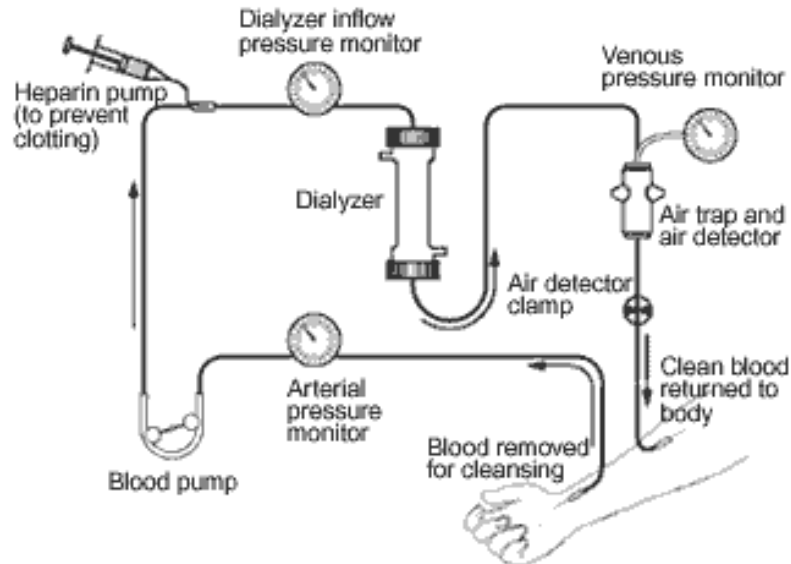
Dialysis is a process for removing waste and excess water from the [blood](#), and is used primarily as an [artificial replacement](#) for lost kidney in people with [renal failure](#). Dialysis may be used for those with an acute disturbance in kidney function ([acute kidney injury](#), previously acute renal failure), or progressive but chronically worsening kidney function—a state known as [chronic kidney disease](#) stage 5 (previously chronic renal failure or end-stage renal disease).

It is needed when you develop end stage kidney failure --usually by the time you lose about 85 to 90 percent of your kidney function and have a GFR of <15.

When your kidneys fail, dialysis keeps your body in balance by:

- removing waste, salt and extra water to prevent them from building up in the body

- keeping a safe level of certain chemicals in your blood, such as potassium, sodium and bicarbonate
- helping to control blood pressure



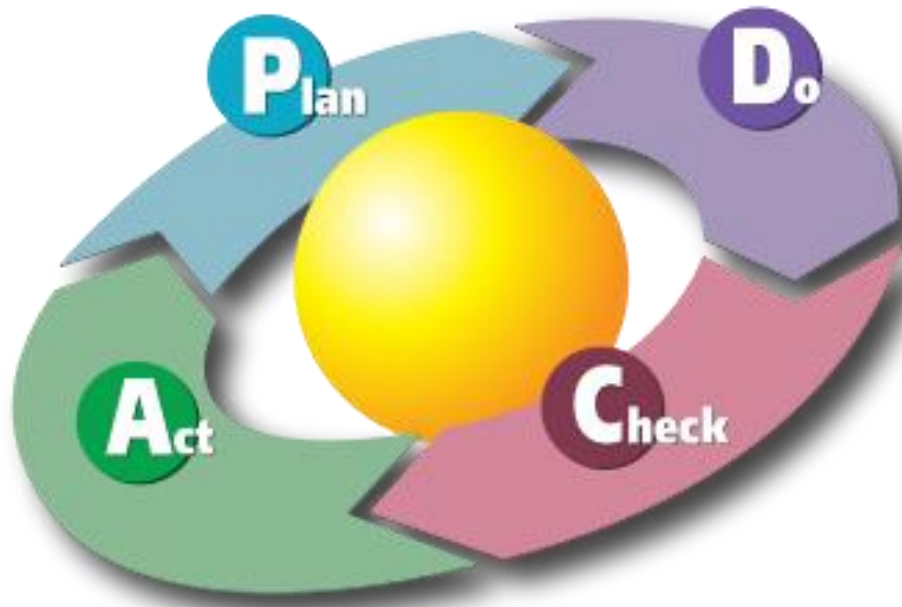
There are two types - Hemodialysis and Peritoneal dialysis

The Focus of the Clinical Audit done in the Dialysis Department of ASIAN Institute of Medical Sciences is Hemodialysis.

Tool used to attain the Objective is PDCA cycle.

PDCA Cycle

The **PDCA Cycle** is a systematic series of steps for gaining valuable learning and knowledge for the continual improvement of a product or process.



PLAN

- To impart training to the staff (post audit) regarding the importance of pre dialysis patient evaluation and post dialysis patient assessment.
- To give instructions to the staff to comply with all the parameters of pre dialysis patient evaluation and post dialysis patient assessment.

DO

Training is a learning experience that seeks a relatively permanent change in an individual that will improve his ability to perform on the job.

Training plays an important role in manpower development. Employees need training to perform their duties effectively, eliminate wastage and reduce accident.

Training imparted and instructions were given to adhere to protocols to all the staff members.

TRAINING CONDUCTED

Serial No.	Date	Topic
1.	10-6-2014	Dialysis- Patient Monitoring and Care
2.	29-10-2014	File documentation of Dialysis Patient
3.	19-11-2014	Dialysis- Patient Monitoring and Care
4.	17-2-2015	Vital Monitoring
5.	5-5-2015	Patient Monitoring Care

Post Audit, only one training session was conducted in 10-6-2014.

Total staff strength at that time was 26. Out of those 26 staff members, only 12 attended the training.

The next training session was conducted after a wide gap of 4 months.

Attrition rate from dialysis department- 12 members have left the department since last clinical audit. (46%)

9 new members have joined the department since last audit and all of these members have attended the last training session.

Total Staff Strength of Dialysis Department presently- 26

Out of those 26 members, 13 staff members attended the last training session.

CHECK

This part will be mentioned in the finding and analysis part of the audit.

ACT

This part will be mentioned in the suggestions and recommendation part of the audit.

Findings:

S.NO	PARAMETERS	2014		2015	
		COMPLIANCE (%)	NON-COMPLIANCE (%)	COMPLIANCE (%)	NON-COMPLIANCE (%)
1	Viral Marker checked, documented in Face sheet at the time of 1st Dialysis	100	0	73	27
2	Pre dialysis Wt. measurement	100	0	82	16
3	Post Dialysis Wt. Measurement	85	15	39	59
4	Wt. Gain Measured	85	15	53	45
5	UF rate Calculated in each dialysis	100	0	100	0
6	Dose of Calculated Heparin	100	0	94	6
7	Pre HD event -BP taken or not	100	0	100	0
8	Post HD event -BP taken or not	78	22	94	6

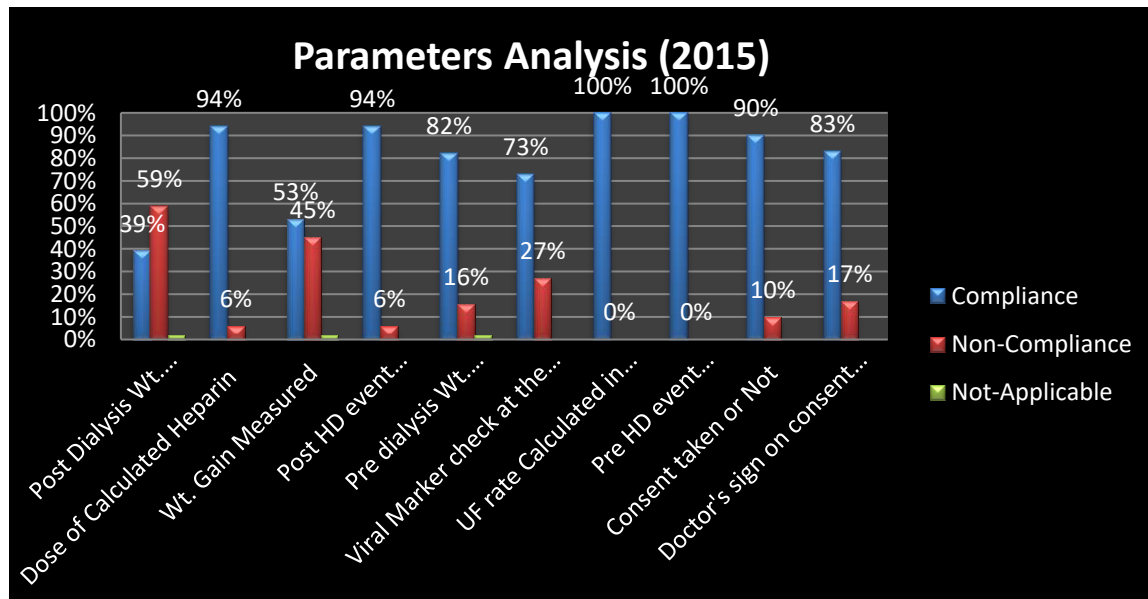
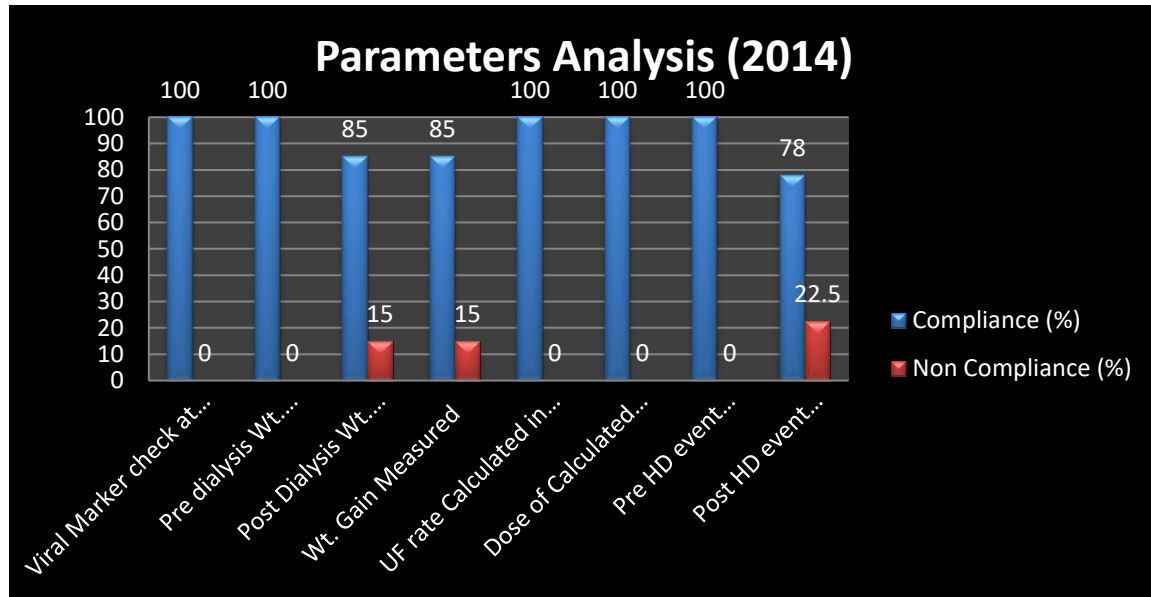
- 2015 audit analysis- In 2% cases, wt. measurement was not applicable due to physical condition of patients.

A new Parameter introduced for the study i.e. **Consent Form**

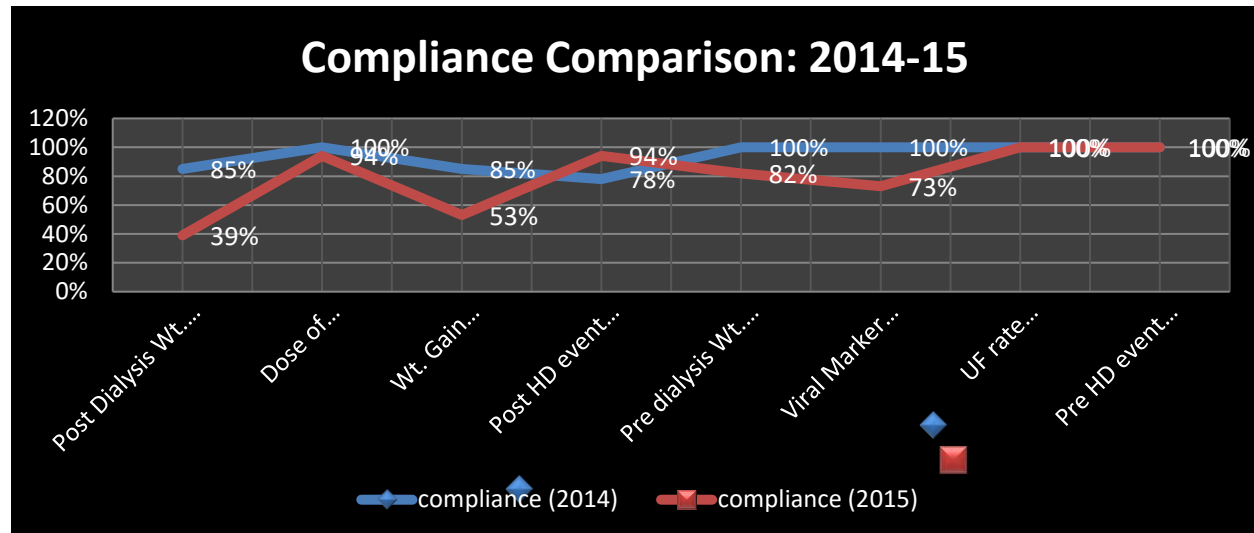
		COMPLIANCE (%)	NON-COMPLIANCE (%)
9	Consent Taken or Not	90	10
10	Doctor's Sign Present or Not	83	17
11	Patient's Sign Present or Not	100	0

Data Analysis

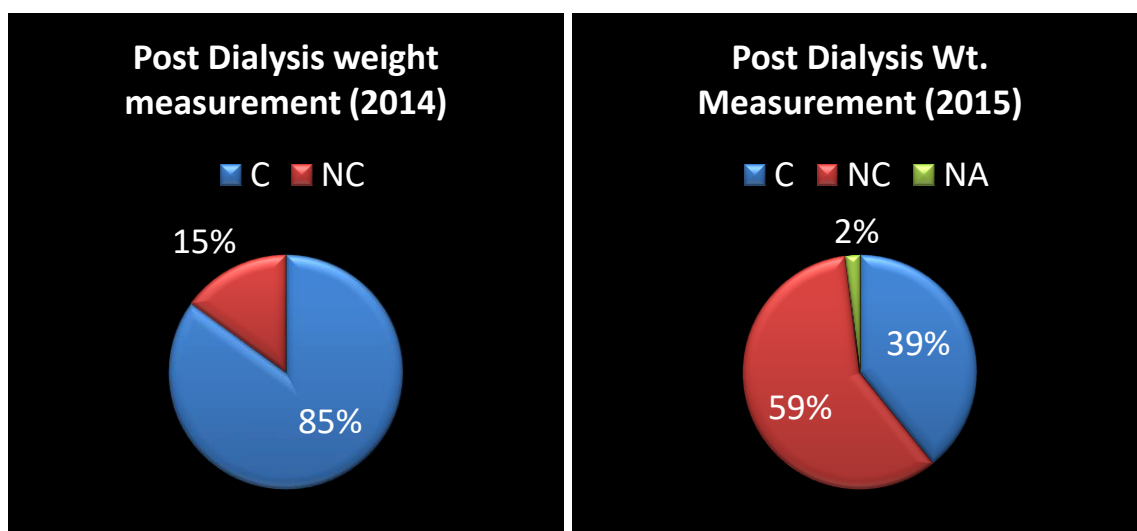
Comparative Analysis of Parameters



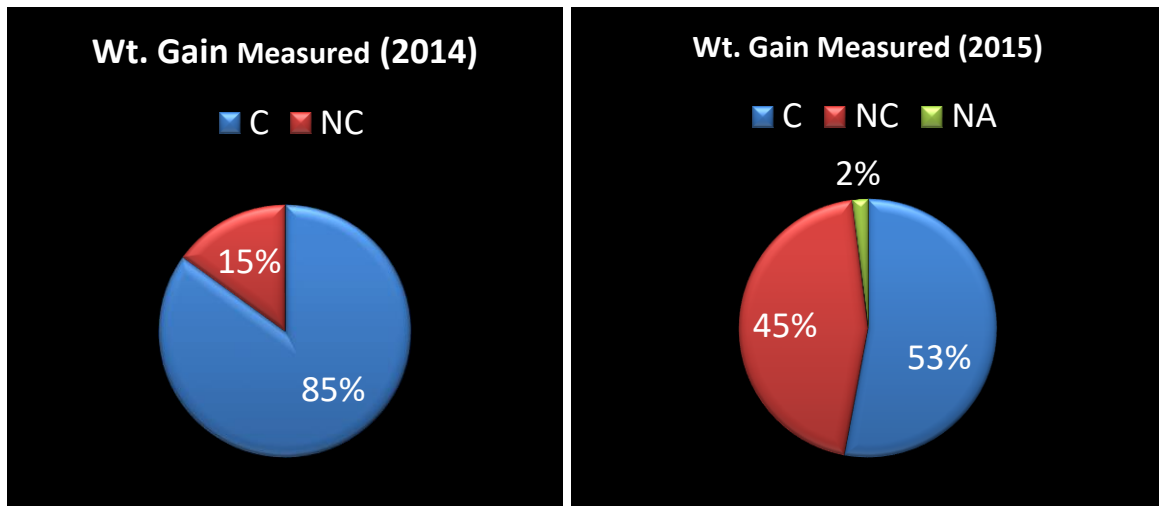
- Comparing compliance of both audits



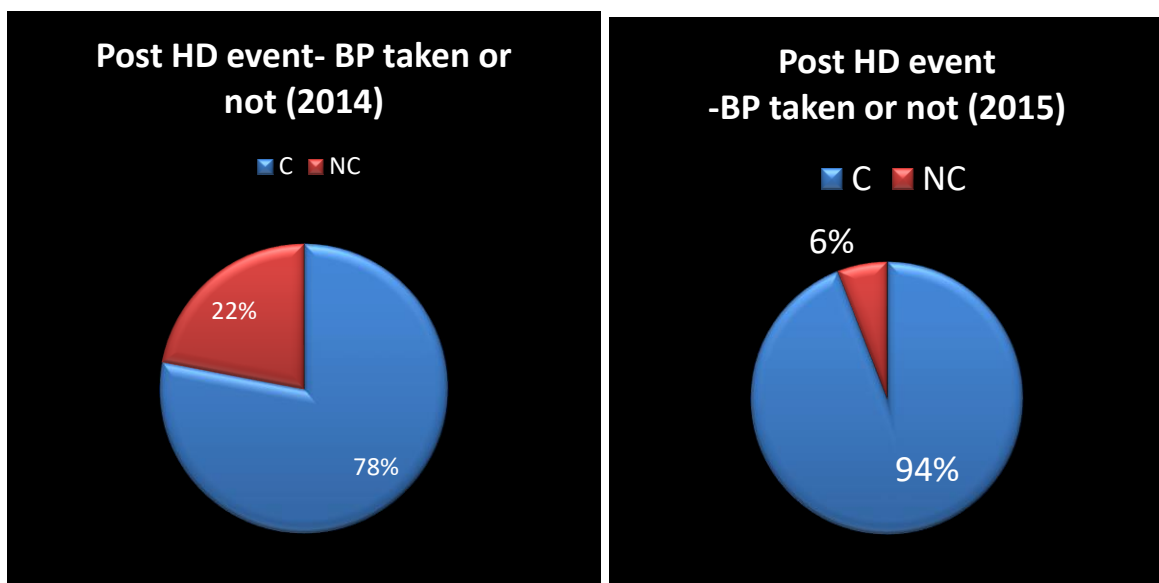
Post Dialysis Weight Measurement



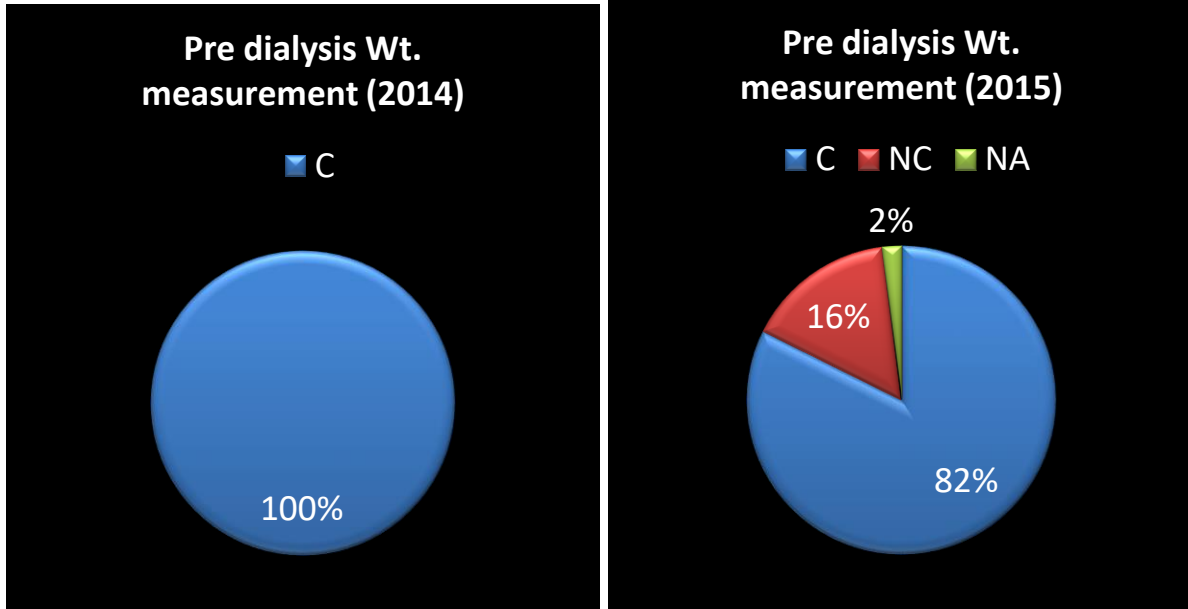
Weight Gain Measured



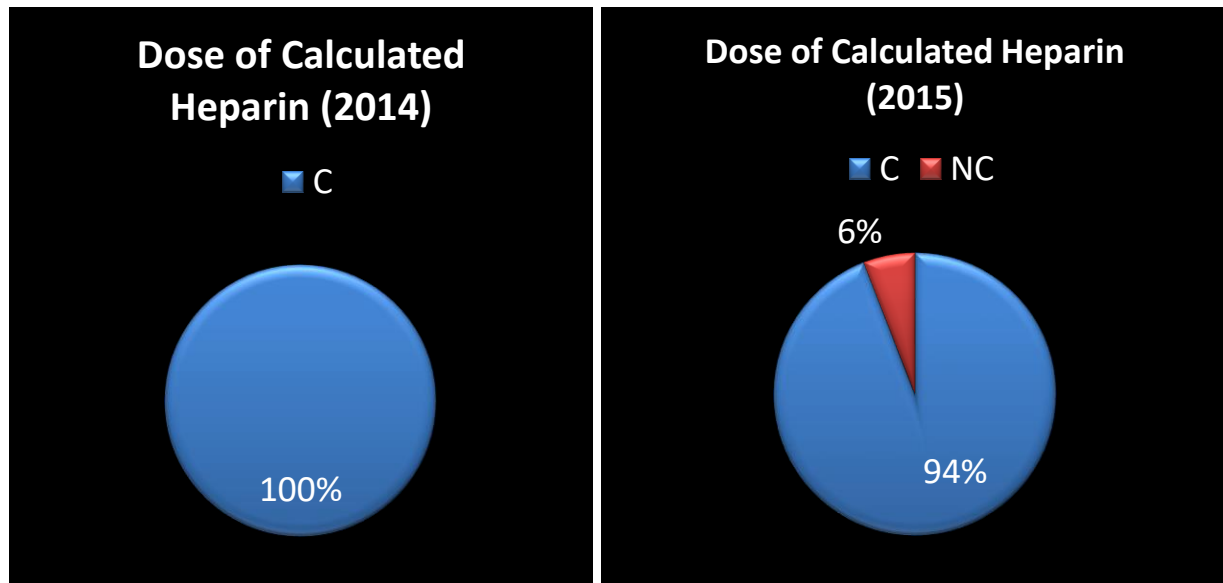
Post HD event – BP taken or not ?



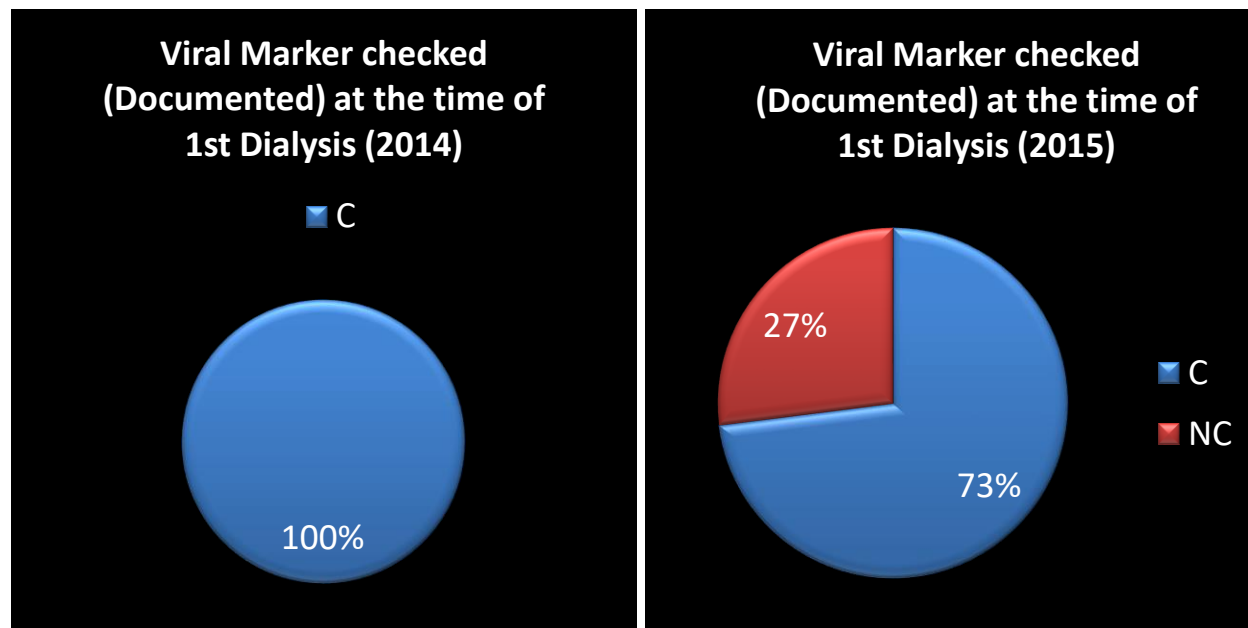
Pre-Dialysis Wt. Measurement



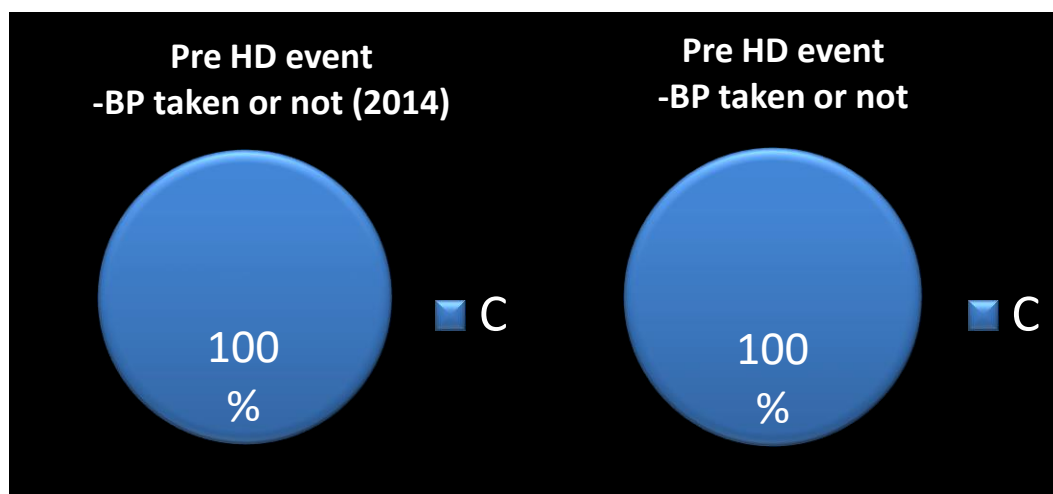
Dose of Calculated Heparin



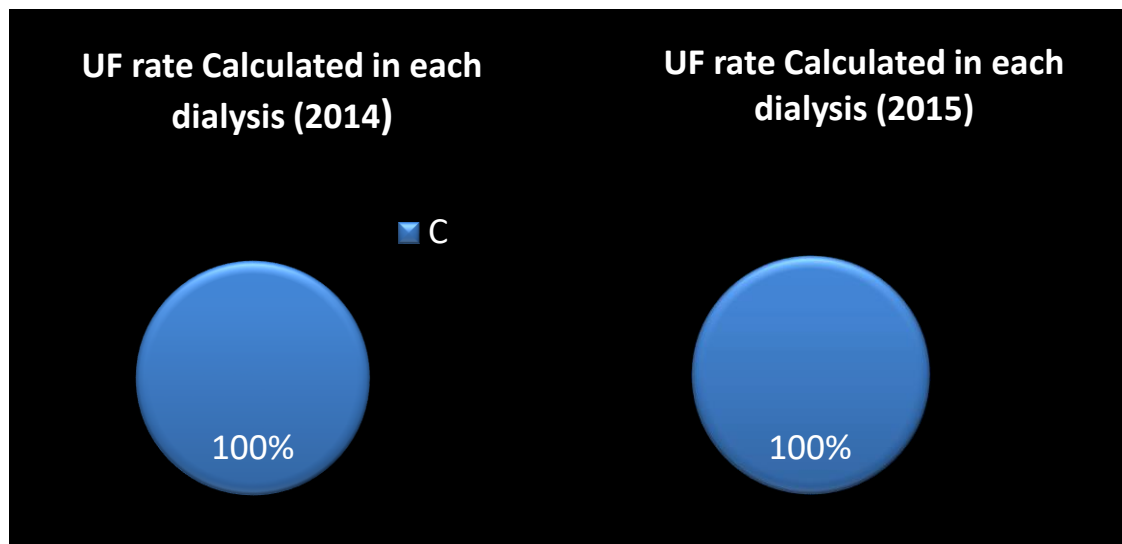
Viral Marker checked (Documented) at the time of 1st Dialysis



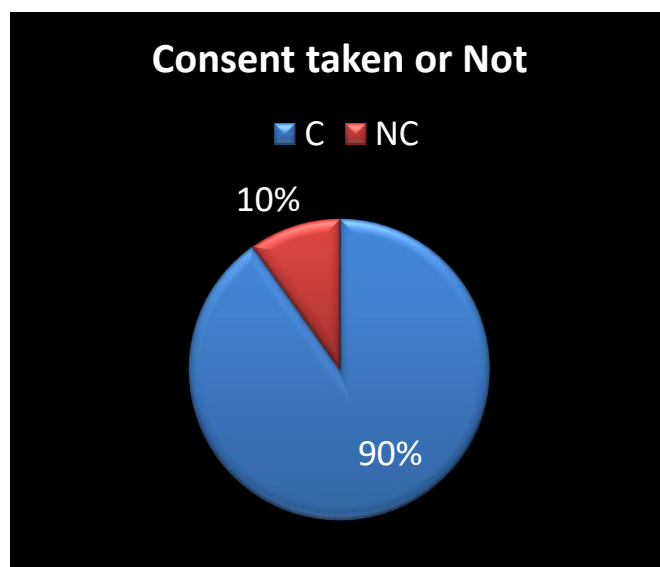
Pre HD Event – BP taken or not



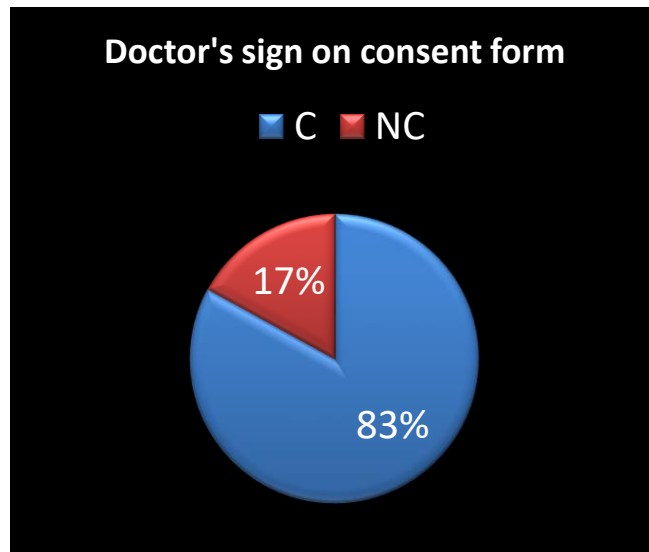
UF Rate Calculated in each dialysis



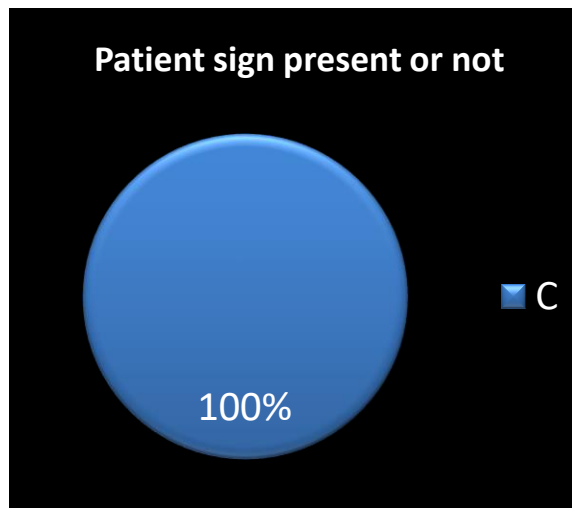
Consent taken or Not



Doctor's Sign on Consent form



Patient Sign present or not



Data Interpretation:

In 2014, Out of 8 parameters, 5 parameters showed 100 % compliance whereas in 2015, only 2 Parameters are showing 100% compliance. The compliance of three parameters i.e. Viral Marker check at the time of first dialysis, Measurement of weight gain and Post Dialysis weight measurement has significantly reduced in 2015 as compared to 2014. Ideally, the compliance should have increased.

As compared to the year 2014, the compliance of only one parameter has increased in the year 2015 i.e. Post Dialysis BP measurement.

As far as the new parameter, Compliance to contents of Consent Form is concerned; it's not up to the mark, ideally the compliance should be 100% to avoid any legal hassles in future.

Measurement of weight is integral part of hemodialysis to prevent under- or over hydration, both of which have been demonstrated to have significant effects on intradialytic morbidity and long-term cardiovascular complications. Fluid removal to achieve fluid balance is an important component of hemodialysis (HD) treatment for end-stage renal disease (ESRD), as both under- or over hydration is associated with deleterious consequences. So, it is essential to measure weight post dialysis and to calculate weight gain to offer effective dialysis to the patient.

Blood pressure (BP) varies significantly in hemodialysis patients depending upon the time taken: predialysis, post dialysis, or interdialytic. Hypertension is associated with increased cardiovascular mortality and morbidity, and that its control can reduce these adverse consequences.

Hence, it is concluded that all the patients undergoing dialysis should be assessed by post dialysis weight, weight gain and post HD – BP measurement.

Recommendations:

- Topic of Training suggested by the clinical audit should be incorporated in the Training Calendar of the department.
- Each and every employee must attend the training sessions at least once in each quarter.
- Staff must be strictly instructed to comply with all the parameters of pre-dialysis patient evaluation and post dialysis patient assessment.

Project on Discharge Planning

Introduction:

Organizations have to closely monitor the environment and continuously plan to gain a competition advantage due to exceeding intensity of the competition in today's market and business environment. Organizations need to adjust their operations and reorganize structure to retain customer and maintain profitability and survive competitiveness, especially when the competitive market associated with cost and unsatisfied customers.

Likewise, being one of the largest service sector, hospitals often encounter situations where the available resources fail to deliver desired output, resulting in the exceeding bed demand against the capacity. As a resultant there will be an undesirable delay, Post pone of the treatment or cancellation of admission, Patient dissatisfaction and damage to the loyalty, Loss of the hospital revenue and competitive edge.

Although, efficient utilization of the existing beds in a hospital is one of the effective strategies in achieving the demand and supply gap, hospital encounter a potential challenge in achieving the efficiency and effective management of the existing beds.

Available beds are a hospital's most important resource and the length of stay in hospital is an important factor in its efficiency. The unnecessary occupation of hospital beds and rooms and consequent low hospital bed turnover rate represent a waste in health care resources, and result in heavy associated organizational costs (Porhasani 1995).

To maintain a competitive edge, a major focus of hospitals today is to increase bed capacity without the need to build and staff additional beds.

One of the prime process by which a hospital can improvise the availability of the beds in the hospital is patient discharge process. A good discharge process is a vital for a hospital to ensure patient satisfaction, bed availability, quality process towards patient care, customer loyalty.

A fast discharge process can ensure early availability of patient beds, which in turn, can reduce the waiting time of patient admissions or even reduce the incidence of patient rejection due to unavailability of beds (Nagaraju 2005).

Turnaround time is the period for completing a process cycle or time taken to deliver output once the process is submit to operate, often turnaround time tool is used to evaluate whether the processes are economically advantageous, making the most efficient use of time and materials.

Discharge turnaround time can be defined as the interval from the time the consultant orders for discharge of the patient to the time physical walkout of the patient from the floor.

Monitoring discharge turnaround time allows hospital to measure the efficiency of bed management and effectiveness of the operating process within the hospital.

Literature review

Cohen n et al., (1980) states the Operational definition of hospital as “A hospital can be described as a network of service units with finite capacity through which patients are flowing”

“An ‘inpatient’ is a person who has been admitted to a hospital for bed occupancy for purposes of receiving inpatient hospital services. A person is considered an inpatient if formally admitted as an inpatient with the expectation of remaining at least overnight and occupying a bed, even if it later develops that discharge or transfer to another hospital is possible and a hospital bed actually is not used overnight”-as defined by Health Law Professional Series

Nagaraju.D. (2005) defines the discharge process as “patient discharge process is ‘the final step of the treatment procedure during patient’s length of stay’, and timely discharge as ‘when the patient is discharged home or transferred to an appropriate level of care as soon as they are clinically stable and fit for discharge”

Levesque and McDougall (1996) defines customer Satisfaction as an “overall customer attitude towards a service provider”¹⁰ and “When customers are satisfied, they are more likely to return, while dissatisfied customers are more likely to go elsewhere” Heskett et al., 1994; Strauss et al., 2001; Zairi, 2000 ¹¹ Satisfied customers are more inclined to be loyal, producing several benefits for organizations (Asif and Sargeant, 2000; Hansemark and Albinsson, 2004; Reichheld and Sasser, 1990)

According to (Gholipor & Ghomry 2003) “The discharge process represents the final contact between the patient and the hospital health professionals, and the outcomes of all procedures undergone by the patient are recorded at this stage. Improving the quality of the discharge process should therefore lead to an increase in patient satisfaction. As a result patients are likely to return to a health centre where they have experienced an efficient discharge process when they next seek treatment. In turn, efficiency and productivity are increased at the hospital”.

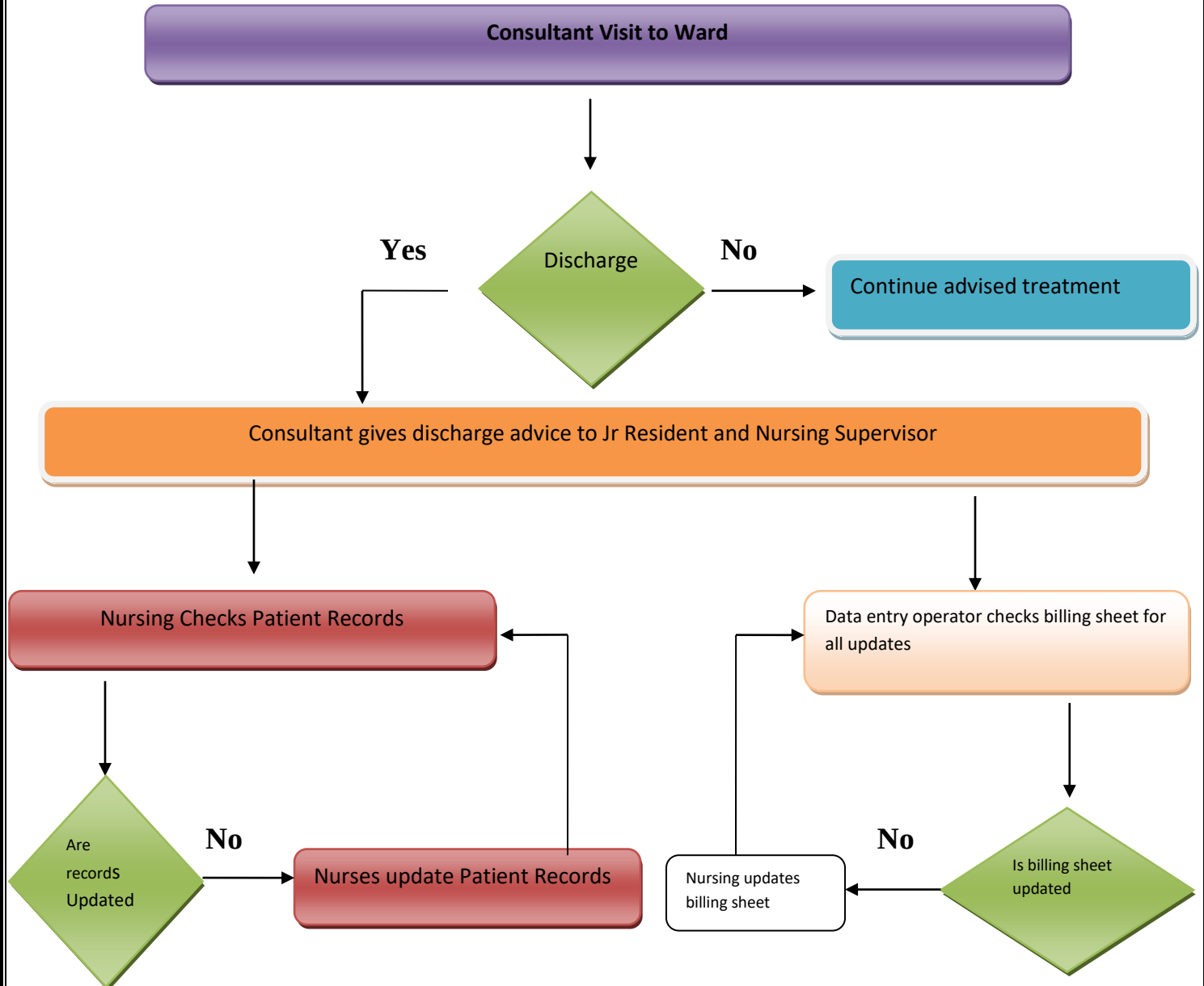
Sima Ajami and Saeedeh Ketabi (2004) analyzed the average waiting time during the patient discharge process at Kashani Hospital in Esfahan, Iran as-the average waiting time in the discharge process in Kashani Hospital was 4.93 hours. The personnel at the hospital had the opinion that the factors affecting waiting time in the discharge process, based on their importance from most to least, is as follows: physicians do not visit patients on time, delay by interns in completing the documentation summary sheet (Discharge Summary) in the medical record absence of networked Hospital Information Systems, absence of guidelines for personnel involved in the discharge process. Same study is performed at ASIAN Institute of Medical Sciences from January to May 2015.

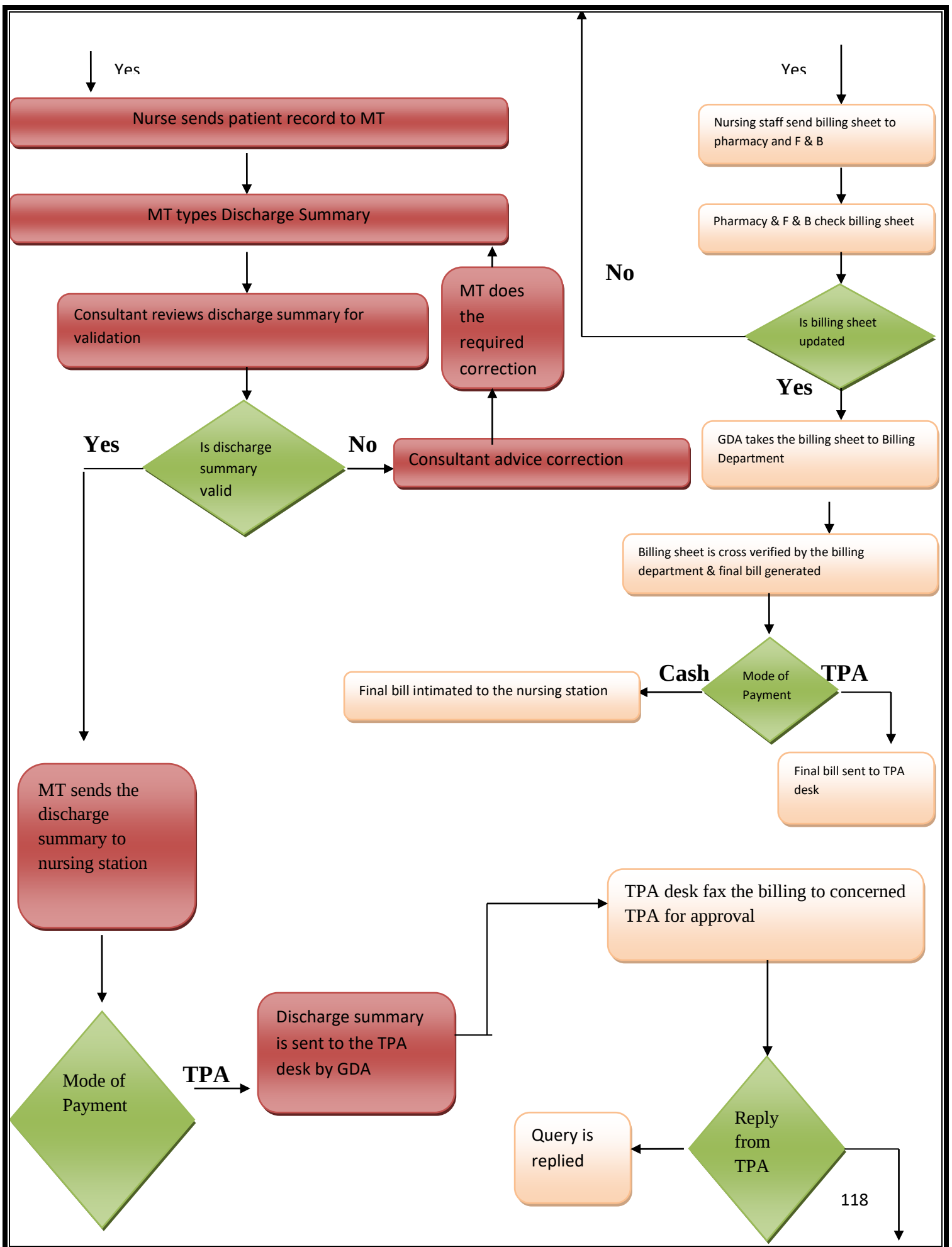
Discharge process at Asian Institute of Medical Sciences

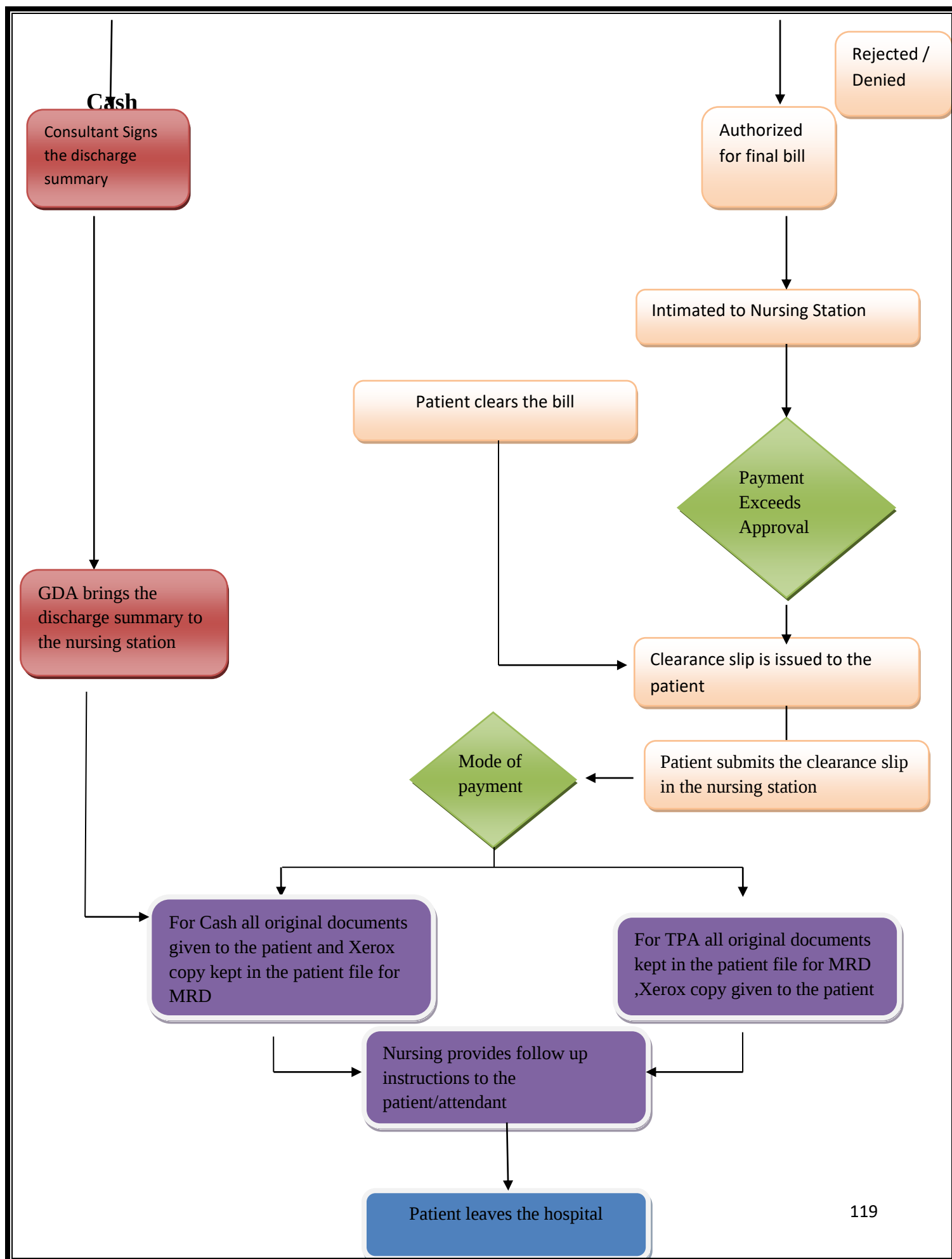
- **Start point:** consultant advice discharge of the patient.
- **Important Interface point:** Billing of patients
- **End point:** physical walkout of the patient from the hospital.
- Departments directly involved in discharge process:
 - ✓ Admitted ward

- ✓ Nursing stations
- ✓ Inpatient billing department
- ✓ Insurance desk

Discharge Process







Aim

- ✓ To assess the discharge process of Asian Institute of Medical Sciences.
- ✓ Monitoring turnaround time (TAT) for different categories of Discharges.

It allows hospital to measure the efficiency of bed management and effectiveness of the operating process within the hospital.

Objectives

- To compare the TAT for different categories of discharges.
- To analyze the % of planned discharges out of total discharges for two months (April and May)
- To analyze the % of converted planned discharges out of total planned discharges for two months.
- To analyze the % of both unplanned and converted planned discharges (Floor wise) for two months.

- To analyze the % of both planned and converted planned discharges (Department wise) for two months.
- To analyze the % of billing status of converted planned and unplanned discharges for two months.

Research Methodology

- ✓ **Data collection period:** The data collected from January to May 2015.
- ✓ **Data collection: Primary data** collected from April to May.

Secondary data taken from January to March.

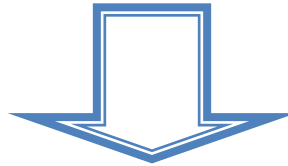
- ✓ **Type:** Retrospective, Comparative and Analytical study
- ✓ **Sample Size:** Total Discharges of the hospital from January to May, 2015.
- ✓ **Sampling Technique:** Convenience Sampling.
- ✓ **Location:** Asian Institute of Medical Sciences, Faridabad.
- ✓ **Inclusion:** All the inpatient discharges.
- ✓ **Exclusion:**
 - Sunday & Monday Discharges
 - LAMA
 - DOR
 - Death

- Day-care
- Critical Care.

Data Collection Process:

Total Discharge Patient Billing Sheet

(Updated Automatically)

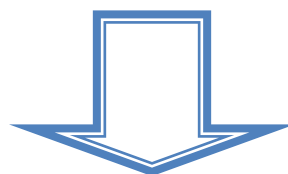


Then Data is copied and pasted on a new Excel sheet date wise on a routine basis. Here data is categorized into **Converted planned** and **Unplanned Discharges**. Also data is Segregated **Date wise, Floor wise, department wise**.

Billing details and TAT is also mentioned in this sheet.



Planned discharges are reported by **NO/MOD** on a routine basis.

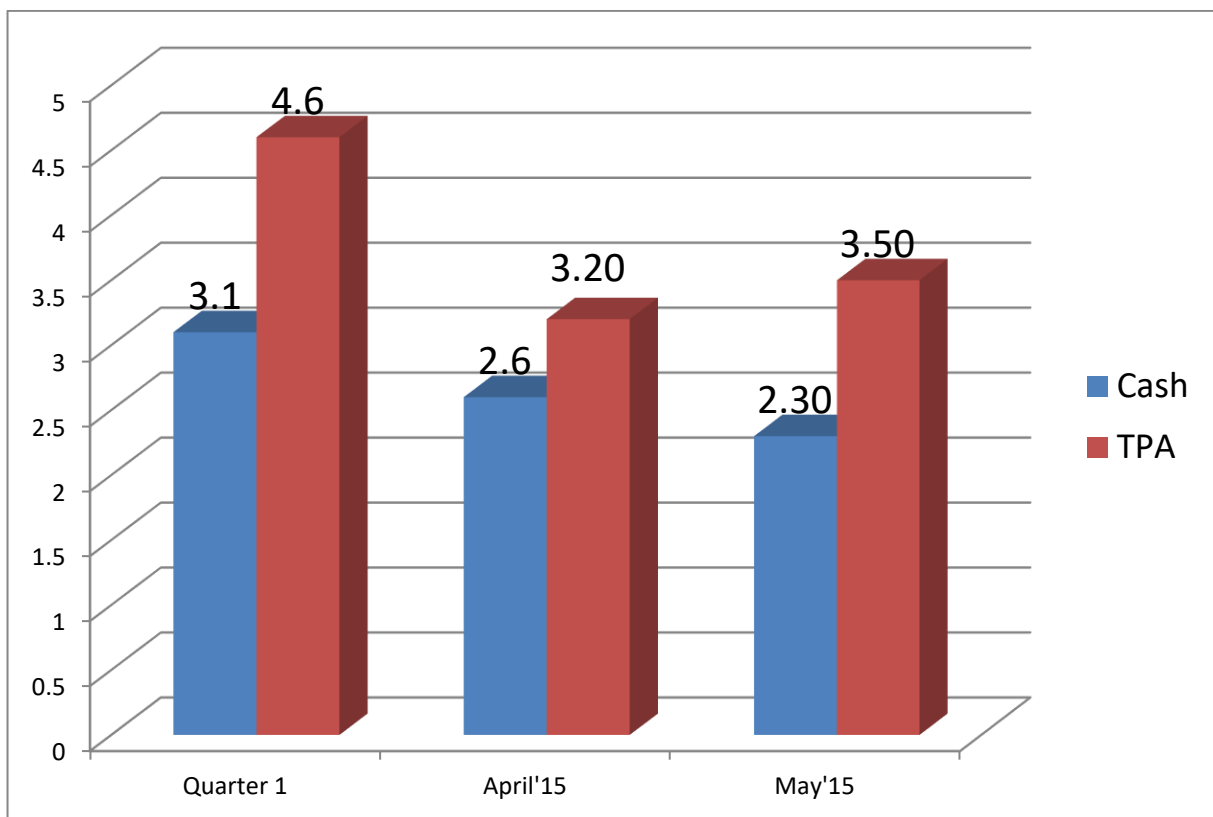


All these data is entered into **Master Excel sheet** and through this sheet Data is analyzed.

Data Analysis

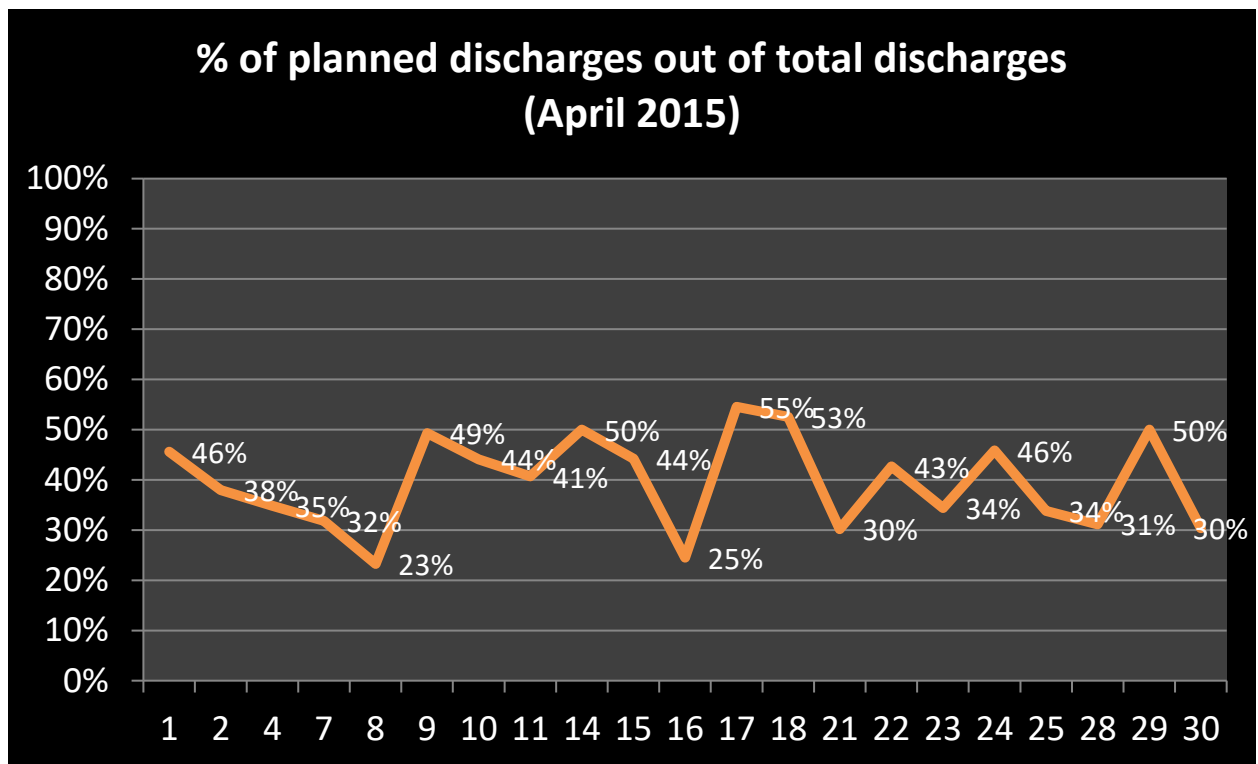
- **Comparative Analysis of TAT (Turn around Time) for Cash and TPA patient from January to May 2015.**

(First Quarter- Jan, Feb and March)

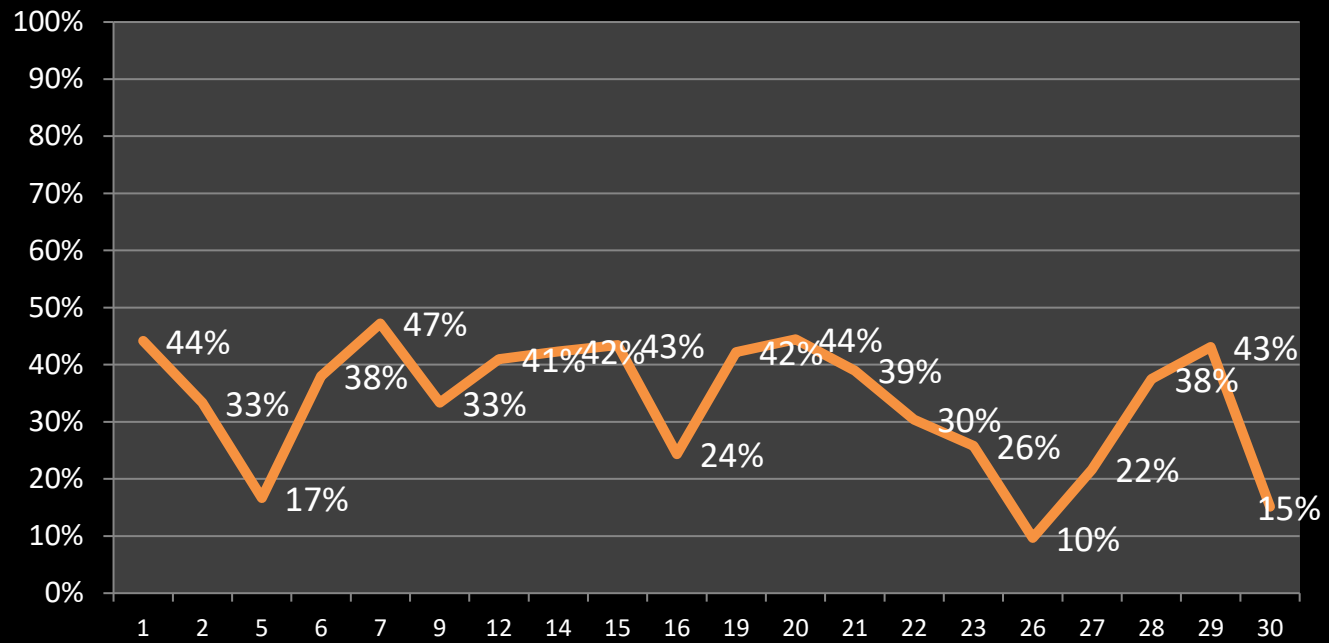


- **Data Analysis of % of planned discharges out of total discharges for two months (April and May)**

$$\text{\% of Planned Discharges} = \frac{\text{Total Converted Planned Discharges}}{\text{Total Discharges}}$$



% of planned discharges out of total discharges (May 2015)

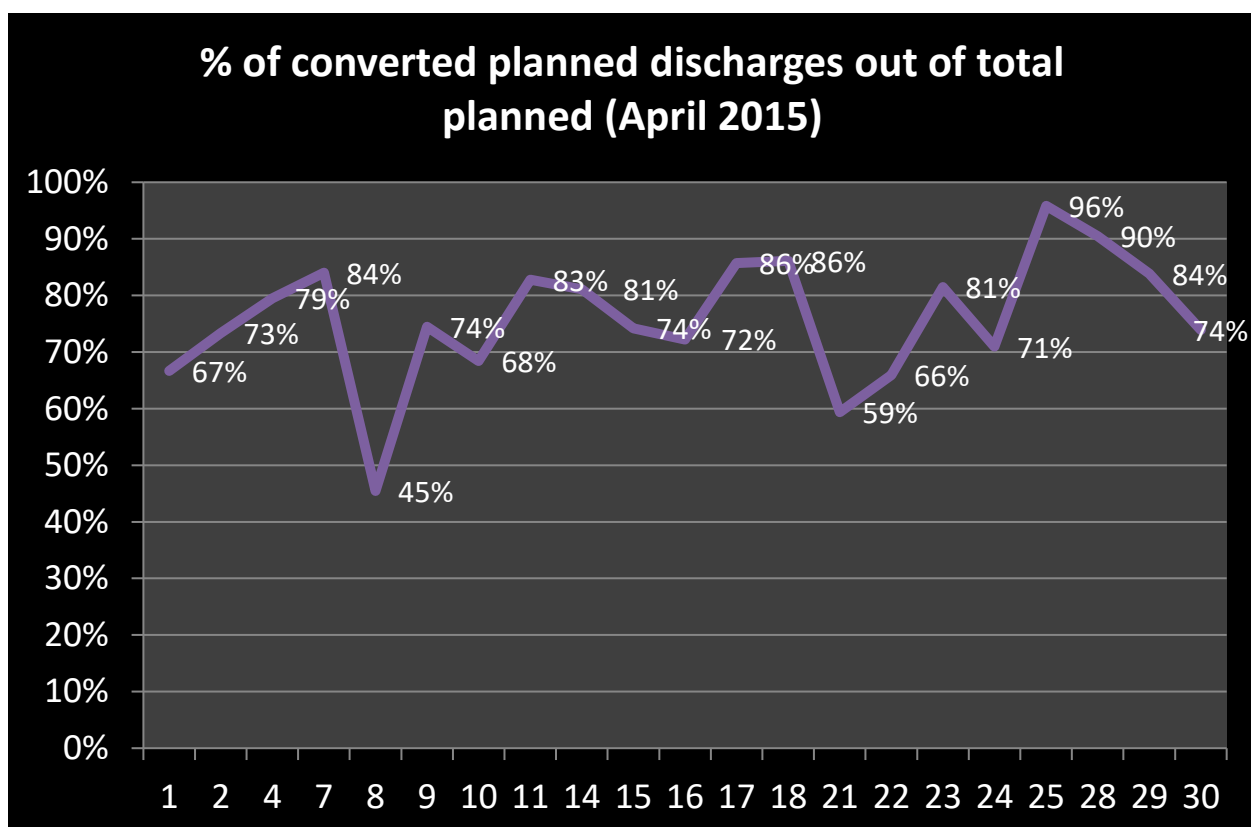


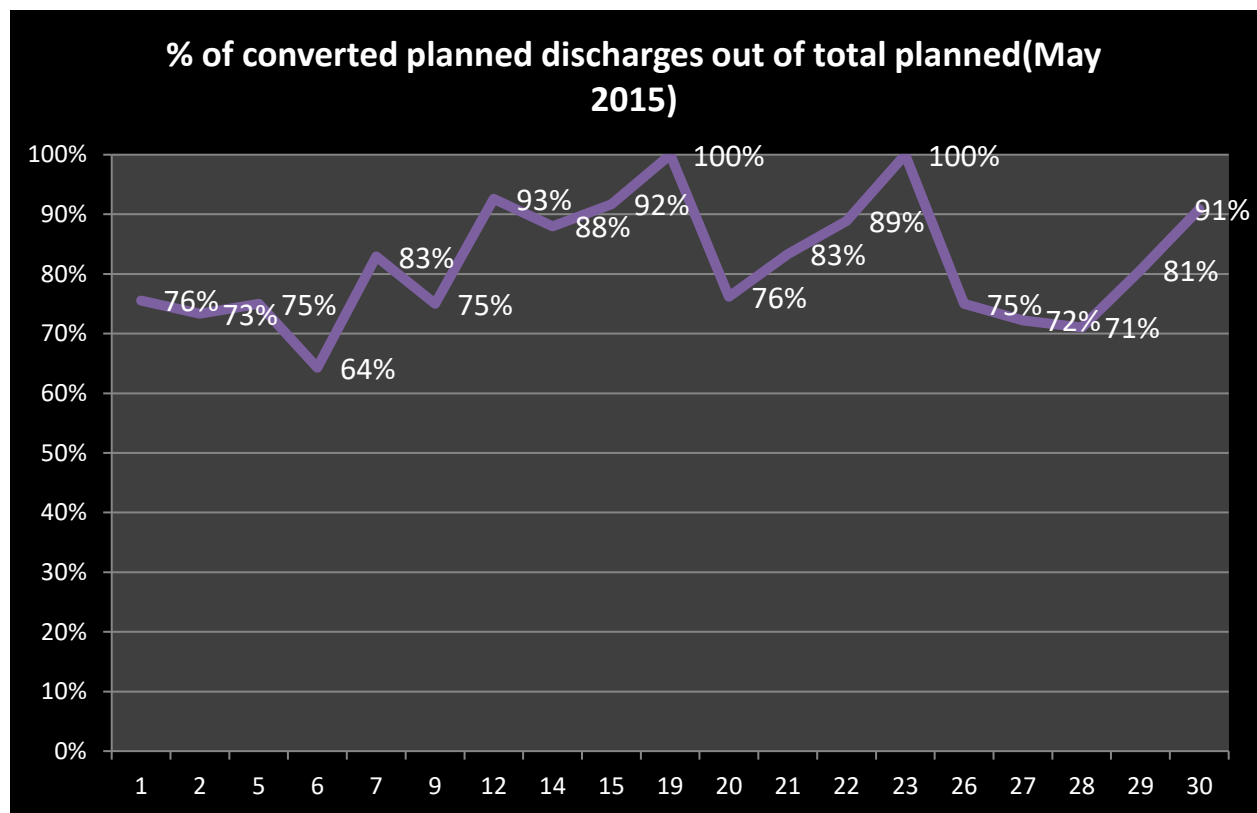
% of Overall planning status & Comparative Analysis

Month	Average	Max	Min
Quarter 1	52%	69%	35%
April,15	40%	55%	23%
May,15	34%	47%	10%

- **Data Analysis of % of converted planned discharges out of total planned discharges for two months.**

$$\text{\% of Converted Planned Discharges} = \frac{\text{Total Converted Planned Discharges}}{\text{Total Planned Discharges}}$$



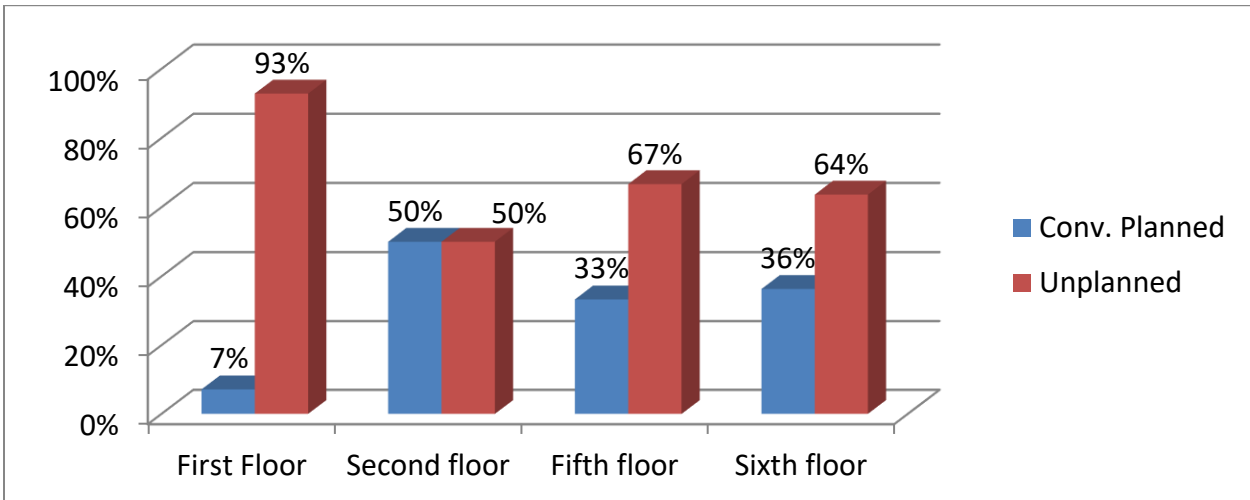


% of Converted Planned Discharges out of Total Planned & Comparative Analysis

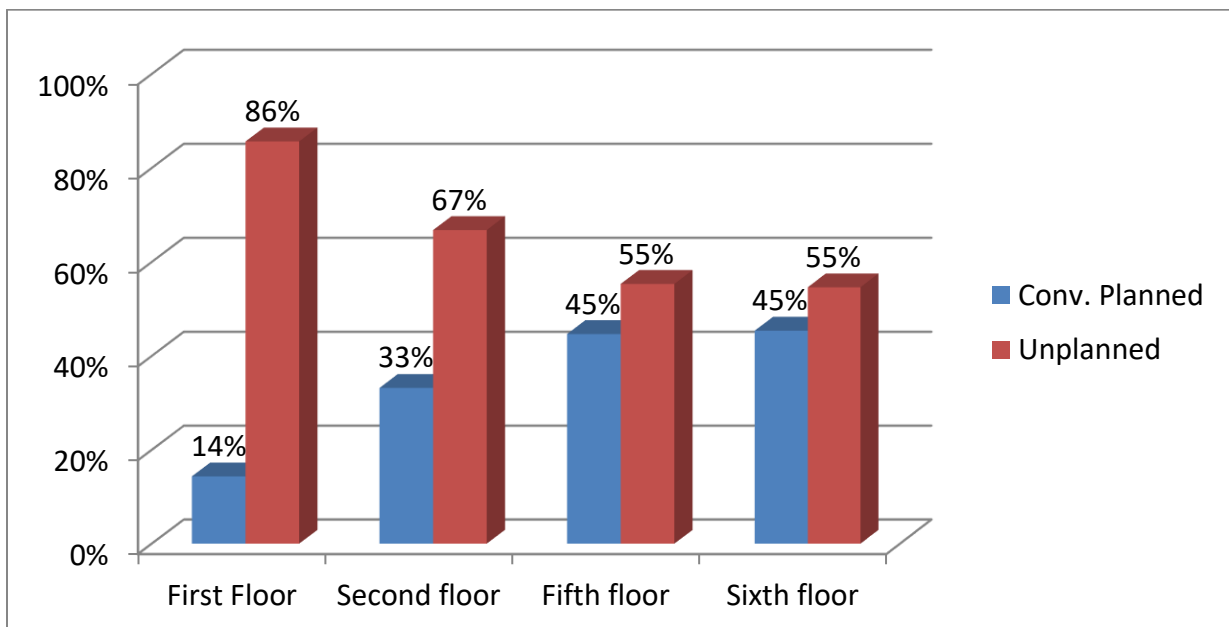
Month	Average	Max	Min
Quarter 1	79%	95%	67%
April,15	76%	96%	45%
May,15	82%	100%	64%

- **Data Analysis of % of both unplanned and converted planned discharges (Floor wise) for two months.**

Floor wise – Planned discharges April'15

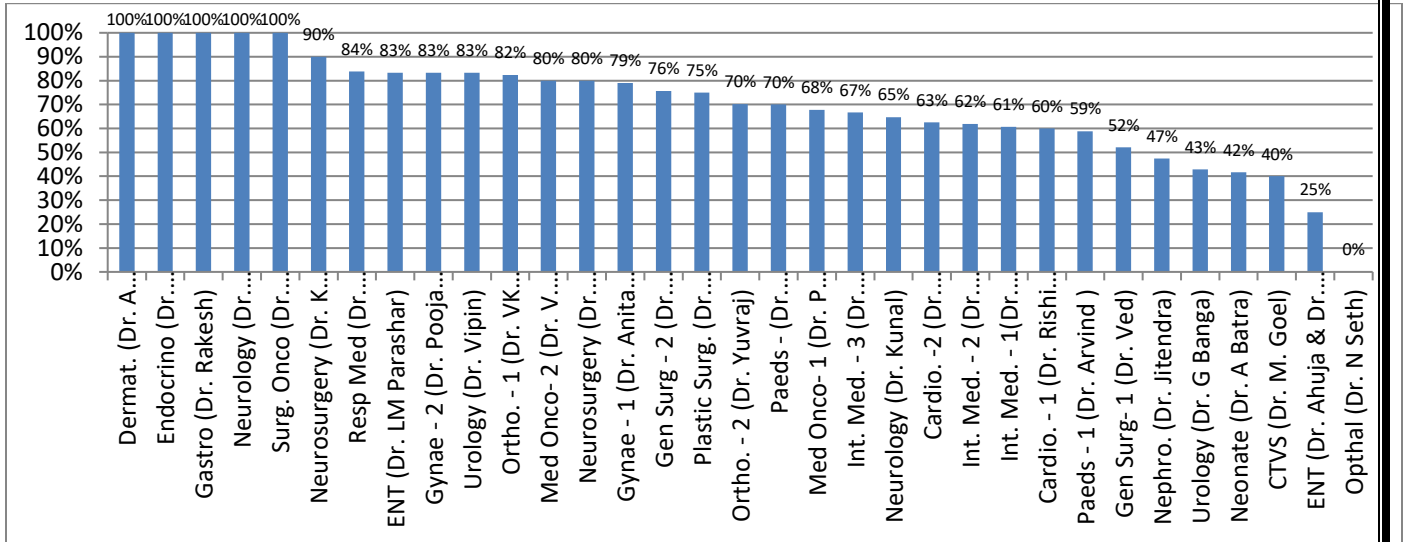


Floor wise – Planned discharges May'15

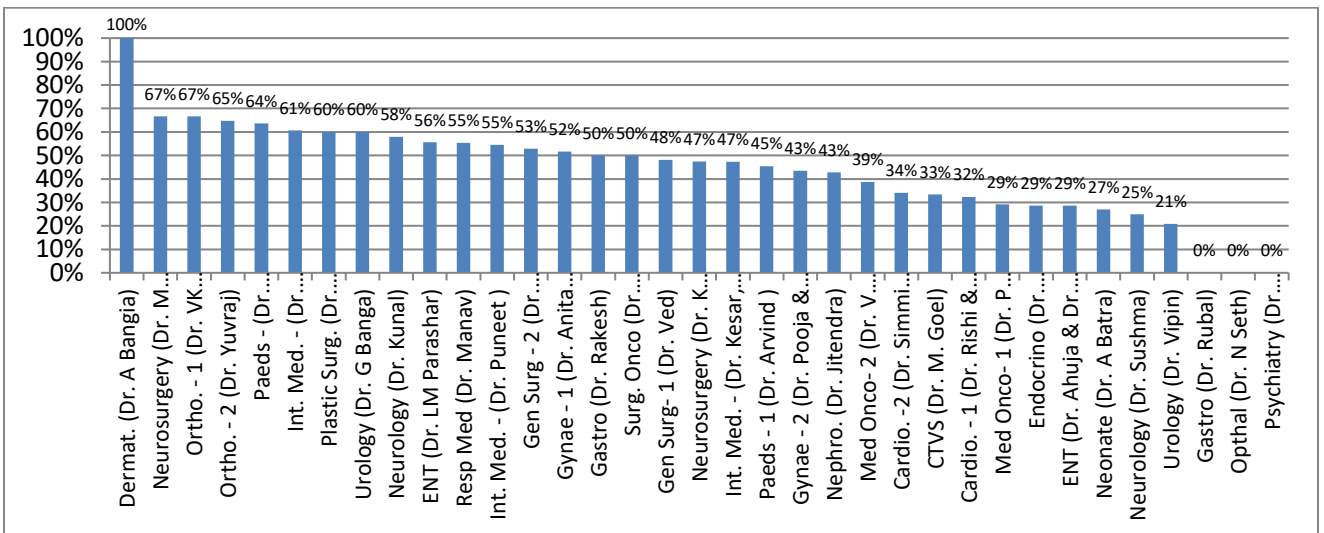


- Data Analysis of % of both planned and converted planned discharges (Department wise) for two months.

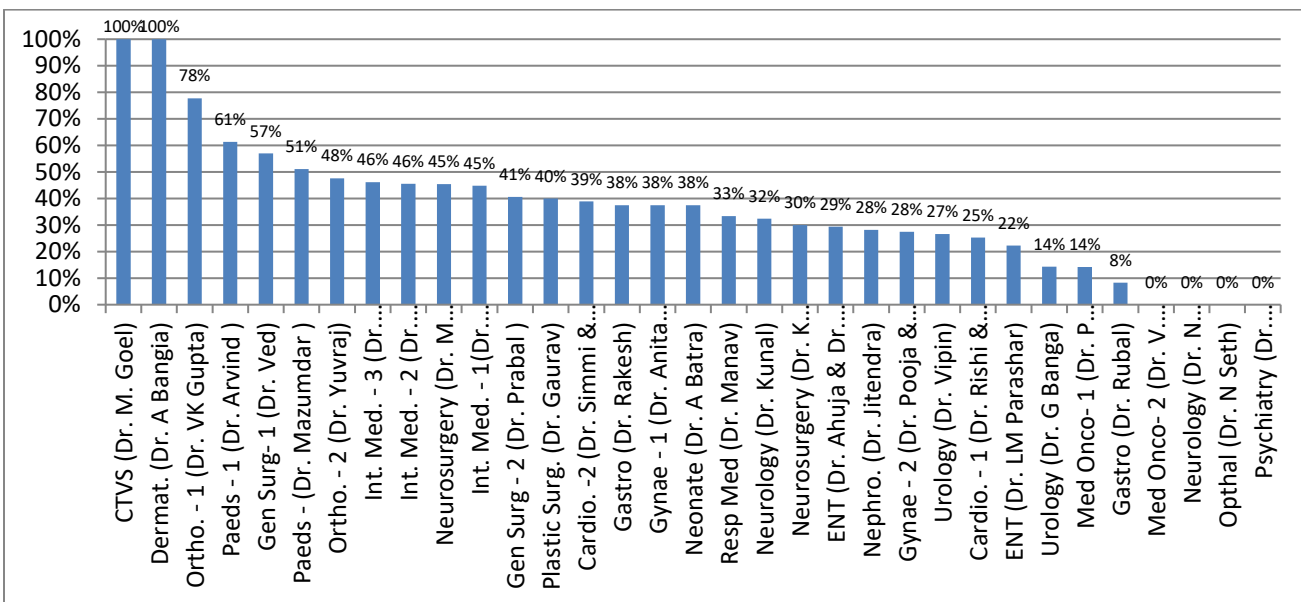
Dept. wise Planned Discharges April'15



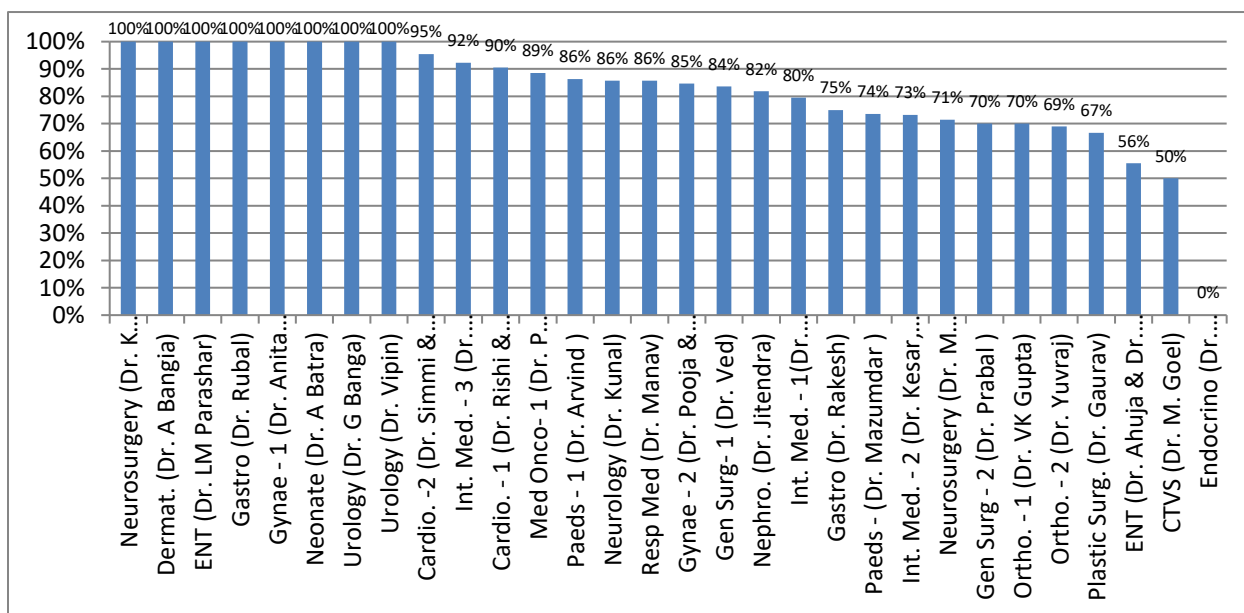
Dept. wise Converted Planned Discharges- April'15



Dept. wise Planned Discharges May'15

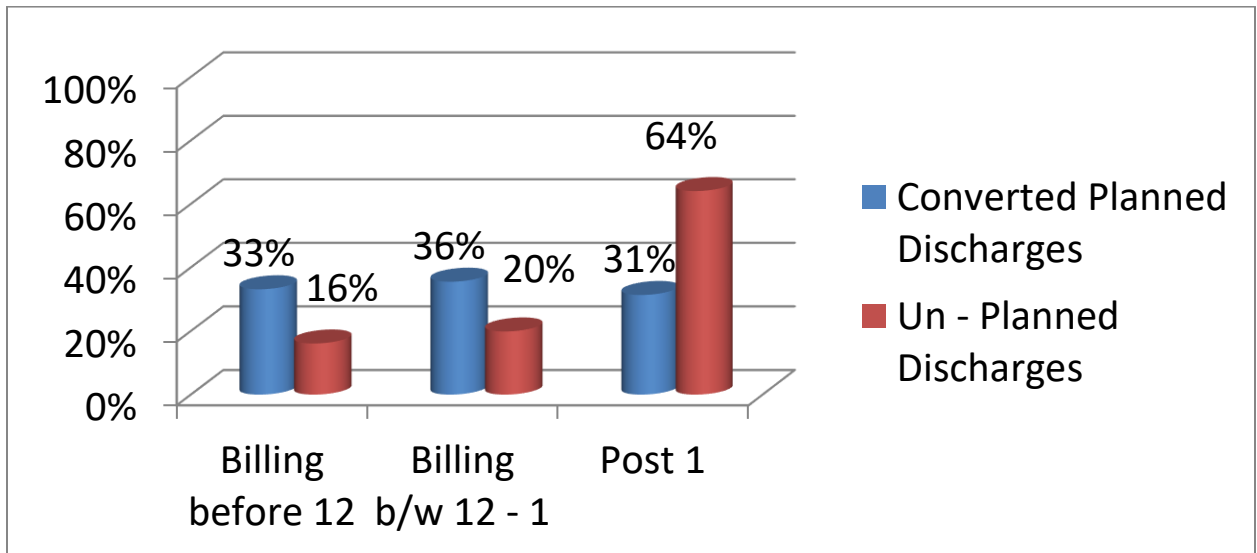


Dept. wise Converted Planned Discharges- May'15

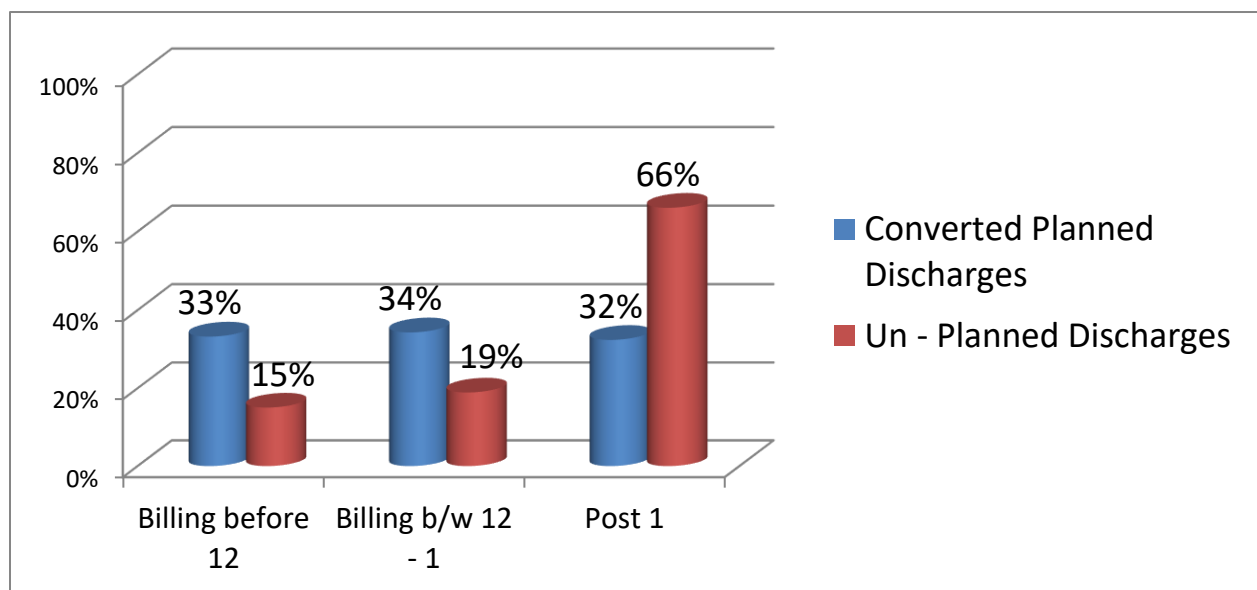


- Data analysis of % of billing status of converted planned and unplanned discharges for two months.

Billing status- April'15



Billing status – May'15



Data Interpretation:

The following study shows that before the Implementation of Discharge process planning the condition of discharges in the hospital was very poor but after the implementation of this Discharge process planning the condition of discharges gradually improved.

By comparing the data of TAT for different categories of discharges from January to May 2015 the study found that initially when this discharge planning was not used, the TAT for cash patient is around 4 to 5 hours and for TPA patient is around 7 to 8 hours but after the implementation of this planning it gradually reduces, similarly for the TPA patients also the TAT reduces.

Comparative analysis of TAT of different categories of discharges:

MONTH	CASH	TPA
Quarter 1 (January to March 2015)	3 hour 1 min	4 hour 6 min
April 2015	2 hour 6 min	3 hour 20 min
May 2015	2 hour 30 min	3 hour 50 min

By analyzing the data of April & May 2015 the study shows that after the implementation of this planning all the parameters of discharge process has been improved in the month of April but because of lack of training of staff and also due to less strictness the improvement has started deteriorating in the month of May.

Recommendations:

1. Meeting on Discharge planning should be conducted on a regular basis.
2. Doctors who are performing better must be rewarded by the organization.
3. One Medical Transcriptionist should be placed on 5th floor so that the discharges will be done on time.

Annexure

Total Discharge patient Billing sheet

D3040							
1	Name of Patient	Doctor Name	Category	Dischargedate	Bed Code	Column1	Column2
481	Sushila Rani	Dr. Manav Manchanda		31/05/2015 17:28	IC17	17:28:27	09:52:39
482	SHIKSHA DEVI	Dr. Praveen Bansal	Medsave Healthcare Pvt.Ltd.	31/05/2015 16:48	102/3	16:48:43	13:07:39
483	Nomita Kindra	Dr. Prabal Roy	ICICI Lombard General Insurance Co.Ltd.	31/05/2015 16:15	534-A	16:15:40	16:11:30
484	Parveen	Dr. Yuvraj Kumar	ESI, Okhala	31/05/2015 14:39	201/3	14:39:00	17:58:49
485	Sunita	Dr. Kuldeep Jain		31/05/2015 14:36	GY001	14:36:58	09:35:24
486	BHOJDUTT SHARMA	Dr. Manav Manchanda	Haryana Government Employees	31/05/2015 14:21	205/7	14:21:10	13:41:26
487	Vaishali	Dr. Anita Kant		31/05/2015 14:12	538-8	14:12:37	17:28:30
488	SAKET ANAND	Dr. Jitendra Kumar	FHPL (Family Health Plan Ltd.)	31/05/2015 13:47	611	13:47:25	13:14:47
489	BRAHAM PRAKASH	Dr. Yuvraj Kumar	ESI, Okhala	31/05/2015 13:39	201/11	13:39:37	00:00:00
490	Mayank Hans	Dr. Ved Prakash	Raksha TPA	31/05/2015 12:57	501/3	12:57:02	23:25:03
491	Bharti Jha	Dr. Jitendra Kumar	E-meditek	31/05/2015 12:55	D023	12:55:55	07:28:30
492	Sarwan Kumar Gupta	Dr. Jitendra Kumar	FHPL (Family Health Plan Ltd.)	31/05/2015 12:52	D11	12:52:21	12:16:15
493	Samay Singh	Dr. Subrat Akhoury	CGHS (Pensioners)	31/05/2015 12:51	BILL2	12:51:11	00:00:00
494	Suman Devi	Dr. Praveen Bansal	ESI, Okhala	31/05/2015 12:49	103/3	12:49:44	10:57:33
495	ASHU KATHURIA	Dr. Rishi Gupta		31/05/2015 12:40	641A	12:40:25	16:37:00
496	MAMTA DEVI	Dr. Rajesh Budhiraja	Raksha TPA	31/05/2015 12:27	203/5	12:27:00	20:23:49
497	MUKESH SHARMA	Dr. Prabal Roy	DHS	31/05/2015 12:24	501/10	12:24:37	00:00:00
498	Naveen	Dr. Prabal Roy		31/05/2015 12:16	202/2	12:16:17	15:00:05
499	Kamlesh	Dr. Rajesh Budhiraja	E-meditek	31/05/2015 12:15	203/6	12:15:46	20:48:25
500	Sudesh Dhawan	Dr. Simmi Manocha		31/05/2015 12:09	CW01	12:09:25	12:09:04
501	Abhishek Sharma	Dr. Suneel R. Ahuja	DHS	31/05/2015 12:05	535-8	12:05:26	00:00:00
502	HAZI KADEER KHAN	Dr. Mukesh Goel		31/05/2015 11:58	CW03	11:58:20	13:48:55
503	Kavia	Dr. (Brig) Arvind Gupta	UHC	31/05/2015 11:57	510	11:57:15	00:00:00
504	Irra Sardana	Dr. (Brig) Arvind Gupta	Star Healthcare	31/05/2015 11:50	PI02	11:50:02	23:34:38
505	Dr. IPS Masoodar			31/05/2015 11:45	203/4	11:45:59	05:00:00

New Excel sheet (Data categorized, segregated, TAT and billing details also noted)

filterman report updated.xlsx - Microsoft Excel

	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1														
2	Dr. Praveen Bansal	CGHS (Pensioners)	30/05/2015 19:10	BILL6		18:00	22:30			TOTAL	PLANNED	UNPLANNED		
3	Dr. Mukesh Pandey		30/05/2015 18:10	514		17:00	20:00		FIRST	12	1	11		
4	Dr. Kamal Verma	Mediassist	30/05/2015 17:55	508		17:00	20:00		SECOND	11	0	11		
5	Dr. Praveen Bansal		30/05/2015 17:29	536-B	p	16:30	18:30		FIFTH	23	4	19		
6	Dr. Praveen Bansal	Vipul Medcorp TPA Pvt. Ltd.	30/05/2015 17:06	101/3		16:00	21:00		SIXTH	13	5	8		
7	Dr. Praveen Bansal		30/05/2015 16:59	101/7		16:00	18:00		MIS	7	0	7		
8	Dr. Praveen Bansal	ESI, Okhala	30/05/2015 16:58	101/4		16:00	22:00							
9	Dr. Praveen Bansal		30/05/2015 16:58	101/6		16:00	19:00							
10	Dr. Yuvraj Kumar	ESI, Okhala	30/05/2015 16:51	201/6		15:30	22:30							
11	Dr. Praveen Bansal	ESI, Okhala	30/05/2015 16:02	103/11		15:00	21:30		Billing before 12	15				
12	Dr. Jitendra Kumar	Northern Coal Field Ltd., Singrauli	30/05/2015 16:01	203/2		15:00	22:30		Billing b/w 12 and 1	19				
13	Dr. Rishi Gupta	Star Healthcare	30/05/2015 15:59	BILL1		15:00	22:30		Billing after 1	32				
14	Dr. Kunal Bahrani	Raksha TPA	30/05/2015 15:58	549-B		15:00	21:30							
15	Dr. Naveen Sanchety	ESI, Okhala	30/05/2015 15:53	BILL3		15:00	22:00							
16	Dr. Rubal Gupta	Park	30/05/2015 15:53	204/3		15:00	21:30							
17	Dr. Praveen Bansal	Mediassist	30/05/2015 15:42	103/15		15:00	20:30							
18	Dr. Praveen Bansal	Vipul Medcorp TPA Pvt. Ltd.	30/05/2015 15:36	102/6		14:00	21:30							
19	Dr. Rajesh Budhiraja		30/05/2015 15:01	205/4		14:00	16:30							
20	Dr. Vipin Gupta		30/05/2015 14:51	BILL1		14:00	17:00							
21	Dr. Praveen Bansal	Vipul Medcorp TPA Pvt. Ltd.	30/05/2015 14:44	102/7		13:30	19:45							
22	Dr. Praveen Bansal	Paramount Health Services (TPA) Pvt.Ltd.	30/05/2015 14:38	102/4		13:00	20:45							
23	Dr. Pranjit Bhowmik	Park	30/05/2015 13:39	1388	p	12:00	19:05							
24	Dr. Pranjit Bhowmik	Vipul Medcorp TPA Pvt. Ltd.	30/05/2015 13:21	647B	p	12:00	19:05							
25	Dr. Rishi Gupta	Haryana Government Employees	30/05/2015 13:19	642A	p	12:00	18:45							
26	Dr. Praveen Bansal	ESI, Okhala	30/05/2015 12:11	102/18		12:00	21:05							

Ready

start Sent Items - Microsof... CRM, OPO Billing, IPD... New Microsoft Office ... Filterman Microsoft Excel - filter...

Excel sheet mailed by NO/MOD

Planned discharge Report 27th May 2015.xlsx - Microsoft Excel

	A	B	C	D	E	F	G	H	I	J
1	Planned Discharges for:									
2	By NO									
3	By Quality team								Dr. Hemant	
4	By MT								Dr. Amit	
5	By Night MOD								Dr. Rohit	
6										
7										
8	Filled by (NO/Quality team/MT/MOD)	Date	Planned discharges Pt. Name	IPD	Area	Category (CASH/TPA/CGHS/ESI/Corporate)	Dept + Dr	Discharge Planning Time	Discharge Summary status @ 5:30 PM	Remarks
21										
22	SECOND FLOOR	NO	28/05/2015	Bhanumati	4762	201/1	ESI	Gen Surg- 1 (Dr. Ved)	Morning Round	Draft ready in patient file
23		NO	28/05/2015	Babita	4857	201/9	ESI	Gynae - 2 (Dr. Pooja & Dr. Gunjan)	Morning Round	Draft ready in patient file
24		NO	28/05/2015	Puran	4334	201/13	ESI	Resp Med (Dr. Manav)	Evening Round	Draft ready in patient file
25		NO	28/05/2015	Ashish	4861	201/6	ESI	Ortho. - 2 (Dr. Yuvraj)	Morning Round	Draft ready in patient file
26		NO	28/05/2015	Bijeneder	4444	205/1	Cash	Resp Med (Dr. Manav)	Evening Round	Draft ready in patient file
27		NO	28/05/2015	Suresh	4608	205/6	Cash	Nephro. (Dr. Jitendra)	Evening Round	Draft ready in patient file
28		NO	28/05/2015	Akhil	4418	206/2	TPA	Paeds - (Dr. Mazumdar)	Evening Round	Not Ready
29		NO	28/05/2015	Mahesh	4975	206/3	Cash	Gen Surg - 2 (Dr. Prabal)	Evening Round	Draft ready in patient file
30		NO	28/05/2015	Reena	4798	204/7	Cash	Neurosurgery (Dr. M Pandey)	Evening Round	Draft ready in patient file
31		NO	28/05/2015	Jyoti banga	4973	203/2	Cash	Gynae - 2 (Dr. Pooja & Dr. Gunjan)	Evening Round	Draft ready in patient file

Master Excel sheet

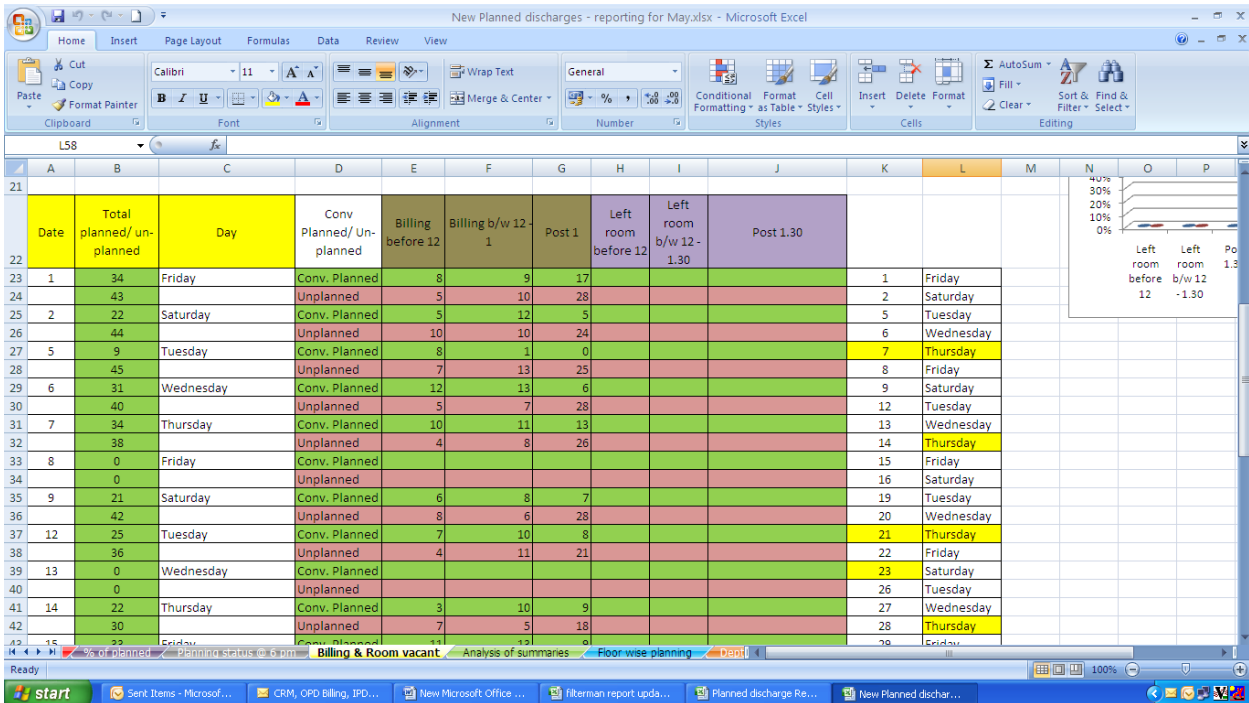
New Planned discharges - reporting for May.xlsx - Microsoft Excel

Month:	Day	Total (excluding Day Care, DOR, LAMA, Critical Areas, Deaths)	Planned	Converted Planned discharges	% of converted planned discharges out of total planned	% of planned discharges out of total discharges	Unplanned	% of unplanned out of total
1	Friday	45		34	#DIV/0!	76%	11	24%
2	Saturday	30		22	#DIV/0!	73%	8	27%
3	Tuesday			9	#DIV/0!	#DIV/0!	-9	#DIV/0!
4	Wednesday	42		27	#DIV/0!	64%	15	36%
5	Thursday	41		34	#DIV/0!	83%	7	17%
6	Friday				#DIV/0!	#DIV/0!	0	#DIV/0!
7	Saturday			21	#DIV/0!	#DIV/0!	-21	#DIV/0!
8	Tuesday			25	#DIV/0!	#DIV/0!	-25	#DIV/0!
9	Wednesday				#DIV/0!	#DIV/0!	-22	#DIV/0!
10	Thursday	25		22	#DIV/0!	132%	-8	-32%
11	Friday	36		33	#DIV/0!	50%	18	50%
12	Saturday			18	#DIV/0!	#DIV/0!	-28	#DIV/0!
13	Tuesday			28	#REF!	#REF!	#REF!	#REF!
14	Wednesday			32	#DIV/0!	#DIV/0!	-32	#DIV/0!
15	Thursday			30	#DIV/0!	#DIV/0!	-30	#DIV/0!
16	Friday			24	#DIV/0!	#DIV/0!	-24	#DIV/0!
17	Saturday			25	#DIV/0!	#DIV/0!	-25	#DIV/0!
18	Tuesday			6	#DIV/0!	#DIV/0!	-6	#DIV/0!
19	Wednesday			13	#DIV/0!	#DIV/0!	-13	#DIV/0!
20	Thursday	38		27	#DIV/0!	71%		0%
21	Friday			25	#DIV/0!	#DIV/0!		#DIV/0!

Ready

start Sent Items - Microsof... CRM, OPD Billing, IPD... New Microsoft Office ... filerman report upda... Planned discharge Re... New Planned dischar...

Billing details in Master Sheet



Floor wise discharge details in Master Sheet

New Planned discharges - reporting for May.xlsx - Microsoft Excel

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
			Planned	Conv. Planned	Unplanned	Planned	Conv. Planned	Unplanned	Planned	Conv. Planned	Unplanned	Planned	Conv. Planned	Unplanned	
	Date	Day	First floor	First Floor	First floor	Second floor	Second Floor	Second floor	Fifth floor	Fifth Floor	Fifth floor	Sixth floor	Sixth Floor	Sixth floor	
1	1	Friday	4	3	10	11	10	11	23	14	11	7	5	6	
2	2	Saturday	1	1	7	6	5	9	13	8	16	10	8	7	
3	5	Tuesday		0	9		0	11		6	12		3	11	
4	6	Wednesday	6	4	9	9	7	12	16	11	4	11	8	10	
5	7	Thursday	6	4	8	5	4	9	20	17	9	10	7	5	
6	8	Friday													
7	9	Saturday		0	9		4	6		10	9		6	6	
8	12	Tuesday		0	4		6	5		10	12		7	10	
9	13	Wednesday													
10	14	Thursday	0	0	5	9	8	10	11	10	8	5	4	4	
11	15	Friday	5	4	11	7	6	8	11	11	10	13	12	6	
12	16	Saturday		0	15		3	11		5	19		6	8	
13	19	Tuesday		4	8		5	10		9	14		9	2	
14	20	Wednesday		1	11		5	8		18	9		4	8	
15	21	Thursday		3	7		4	8		13	11		10	7	
16	22	Friday		0	13		8	13		9	12		4	10	
17	23	Saturday		3	14		3	5		12	7		7	9	
18	26	Tuesday		0	6		0	14		3	23		3	7	
19	27	Wednesday		1	13		3	4		4	19		4	7	
20	28	Thursday	1	1	8	12	5	8	14	9	13	11	9	10	
21	29	Friday		1	7		3	6		14	7		2	7	
22	30	SATURDAY		1	11		0	11		4	19		5	8	
23	30	Saturday	23	31	185	59	89	179	108	197	244	67	123	148	

Ready

start Sent Items - Microsof... CRM, CPD Billing, IPD... New Microsoft Office ... filterman report upda... Planned discharge Re... New Planned dischar...

Department wise details in Master Sheet

New Planned discharges - reporting for May.xlsx - Microsoft Excel

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
			1				2				5				6				7		
			Planned	Converted plans	Unplanned	Total	Planned	Converted plans	Unplanned	Total	Planned	Converted plans	Unplanned	Total	Planned	Converted plans	Unplanned	Total	Planned	Converted plans	Unplanned
4	Cardio - 1 (Dr. Rishi & Dr. Umesh)		2	2	3	5	1	1	1	2		0	4	4	2	1	4	5	1	1	0
5	Cardio - 2 (Dr. Simmi & Dr. Subrat)			0	2	2	1	0	1	1		0	3	3	2	2	3	5	2	2	1
6	CTVS (Dr. M. Goel)														1						
7	Dental																				
8	Dermat. (Dr. A. Bangia)																				
9	Endocrinology (Dr. Maneesha)		1																		
10	ENT (Dr. Ahuja & Dr. Swapnil)		1	1	0	1		0	3	3					3	2	0	2	2		
11	ENT (Dr. LM Parashar)		1	0	1	1						0	1	1		1	0	1			
12	Gastro (Dr. Rakesh)											0	1	1		0	1	1	1		
13	Gastro (Dr. Rubal)			0	1	1		0	1	1									0	1	
14	Gen Surg - 2 (Dr. Prabal)		2	1	4	5		0	2	2		2	1	3	2	0	2	2	3	2	0
15	Gen Surg - 1 (Dr. Ved)		1	0	1	1	2	1	2	3		2	2	4	3	2	1	3	4	2	2
16	Gynae - 1 (Dr. Anita Kant)		1	0	3	3	1	1	4	5					3				3	4	1
17	Gynae - 2 (Dr. Pooja & Dr. Gunjan)			1	1	2		0	4	4		0	1	1	1	1	0	1	2	0	3
18	Int. Med. - (Dr. Showmik)		4	4	0	4	4	4	0	4		0	1	1	4	3	0	3	1	2	1
19	Int. Med. - (Dr. Kesar, Dr. Rajesh)		8	5	2	7	7	5	4	9		0	1	2	5	4	3	7	2	3	2
20	Int. Med. - (Dr. Puneet)		1	1	0	1	2	2	1	3		0	2	2	1	1	1	2	2	2	0
21	Med Onco - 1 (Dr. P. Bansal)		2	2	11	13	2	2	6	8		0	11	11	5	3	8	11	5	5	11
22	Med Onco - 2 (Dr. V. Goswami)							0	1	1											
23	Neonate (Dr. A. Batra)			0	1	1	1	1	1	2		0	3	3	3	2	1	3			
24	Nephro. (Dr. Jitendra)			0	1	1		0	2	2									1	1	1
25	Neurology (Dr. Kunil)		2	1	2	3		0	1	1		0	3	3	1	1	2	3	1	1	1
26	Neurology (Dr. N. Rehman)																				

Ready

start | Sent Items - Microsof... | CRM, OPD Billing, IPD... | New Microsoft Office ... | Filterman report upda... | Planned discharge Re... | New Planned dischar...