

**Summer Training at
Yashoda Hospitals, Hyderabad
(April 3 to June 2, 2017)**

- **To Study and Analyze the Reasons for Extended Length of Stay to Improve ALOS in Yashoda Hospital, Secunderabad**
- **To Study Consultation – Pharmacy Invoice Conversion Rate of Outpatient Pharmacy**
- **To evaluate Prescribing Pattern of Doctors According to NABH Standards**

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

**MBA Hospital & Health Management
2016-2018**


**Institute of Health Management Research
The IIHMR University, Jaipur
2017**

CERTIFICATE

This is to certify that **Ms. Swathi Swargam** has undergone summer training in **Yashoda Hospital, Hyderabad** from **3rd April to 2nd June 2017**.

The candidate herself completed the project assign to her during summer training. Her approach to the project was sincere and proactive. This summer training is in partial fulfillment of the course requirement recommended for the award of MBA in Hospital and Health Management.

I wish her success in all her future endeavors.



Col. (Dr.) Ashok Kaushik
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Date: 05/06/2017

CERTIFICATE

This is to certify that **Ms. Swathi Swargam** a student of **IIHMR University** has successfully completed her Internship at Yashoda Hospital, Secunderabad in the '**Department of Operations**' from **03rd April 2017 to 03rd June 2017**.

Her conduct and character has been good.



Neena Chakraborty

GM – Human Resources



P. Rama Rao

GM – Admin & Credit Billing

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Mrs. Shashi Rekha, Assistant General Manager of OP & Diagnostics, Yashoda Hospitals, Secunderabad

Dr Nutan.P.Jain, Professor at the IIHMR University, Jaipur

I would also like to thank all department heads for guiding me during departmental visits.

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ORGANIZATIONAL PROFILE OF YASHODA GROUP OF HOSPITALS

As written in website www.yashodahospitals.com

History

Mr. G. Ravender Rao started his first venture as Yashoda Vacuum Industries in 1978 and later established Yashoda Special Metals in 1985 both emerging as leading industries in their own fields. A great visionary, as he is, Mr. Rao joined hands with his younger brothers Dr. G. Surender Rao and Mr. G. Devender Rao, and established Yashoda Group of Hospitals.

Mission Statement

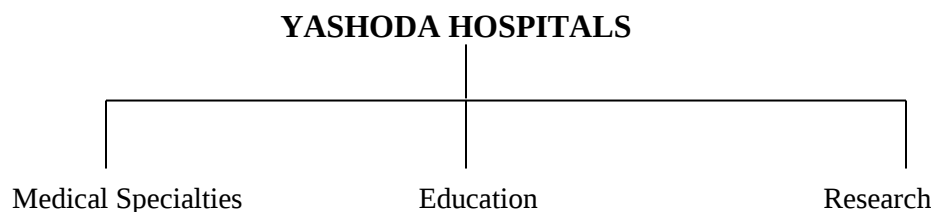
To provide world-class healthcare services at affordable costs, in all medical departments. With a constant and relentless emphasis on quality, excellence in service, empathy, and respect for the individual.

Achievements

- Our three hospitals had a total of above 25, 00,000 patients admissions in the last 5 years and performed 1,00,000 major surgeries per year, 2,00,000 surgical procedures per year
- Yashoda Hospital had successfully carried out ABO Incompatible Renal Transplant.
- Yashoda Hospital had created history by implanting HM III (Heart Mate III)
- Yashoda Hospitals has been ranked as the 1st Best Multispecialty hospital in Hyderabad, India by The Week – Nielsen Best Hospital Survey 2015.
- Yashoda Hospitals Hyderabad was ranked as the 2nd best multispecialty hospital in Hyderabad by The Week-Nielsen National Hospital's Survey 2014.

Infrastructure includes

- 3 super specialty hospitals – somajiguda, malakpet, secunderabad
- 3 Heart Institutes
- 3 Cancer Institutes
- 62 Medical specialties
- 700 Specialist doctors



Centres of Excellence

- Heart
- CT Surgery
- Brain
- Cancer
- Bones & Joints
- Renal
- Robotic Sciences
- Liver
- Spine

Yashoda Group of Hospitals is a multiorgan transplant center with facilities for transplantation of liver, bone marrow, heart, kidney, lungs

Education

- DNB Courses
- IDCCM - (Indian Diploma in Critical Care Medicine)
- Post Doctoral Fellowship in Neuroanaesthesia
- Post Doctoral Fellowship in Neurocritical Care
- ISCCM - Post MBBS certificate in critical care
- FCCM - (Fellowship In Critical Care Medicine)
- MEM - Masters in Emergency Medicine
- Nursing
- Paramedical Courses
- Healthcare courses under Osmania University
 - Operation Theatre Technology
 - Cath Lab Technology
 - Echo Cardiography & Sonography
 - Physician Assistant

- Emergency Medical Care
- Medical Imaging Technology
- Dialysis Technology
- Anaesthesia Technology
- Respiratory Therapy Technology

Research

The Yashoda Research Foundation supports research grants under YAMER (Yashoda Academy of Medical Education and Research) by providing the platform technologies and research programmes, administrative support, staff, and facilities that are needed to rapidly translate discoveries made in the laboratory and the hospital into new diagnostics, and treatments.

- Academic Projects
- Research publications
- Clinical Trials
- DNB Thesis
- Research Ethics Committee

Quality Policy

All the hospitals of Yashoda Group are accredited to National Accreditation Board for Hospitals & Healthcare Providers (NABH), a constituent board of Quality Council of India and all the laboratories of the hospitals are accredited to National Accreditation Board for Testing and Calibration Laboratories (NABL).

Technology upgrade

Yashoda Hospitals is known as the pioneer in bringing the latest advancements to the people. We believe in keeping pace with revolutionary technology to deliver treatments with higher accuracy, better precision and enhanced results.

We are proud to be in the forefront of modern medical technologies with a proud tradition of medical excellence, as evidenced by our many "firsts" and medical breakthroughs in Asia, India, and the States of Telangana and Andhra Pradesh.

A few of them include:

- First in Asia – RapidArc Radiotherapy Treatments for Cancer Patients
- First time in South Asia – 16-channel 1.5T HDx MRI system
- First time in India – Dual Source CT with Heart PBV for coronary Angio and non-cardiac application
- First in South India – Linear Accelerator with Intensity Modulated Radiation Therapy (IMRT)
- First in South India – High Definition PET
- First in the combined State of Andhra Pradesh – Modular Operation Theatre with HEPA (air) filter system
- First in the combined State of Andhra Pradesh – State-of-art Heart & Lung Centre
- First in the combined State of Andhra Pradesh – Digital Flat Panel Cardiac Catheterization Lab

LAYOUT OF YASHODA HOSPITAL

Floor Plan	Distribution of hospitals as per the floors
9 th floor	• Laboratory services • Blood bank • General ward
8 th floor	• Oncology ward • Dialysis unit • Central sterile services department(CSSD) • Inpatient pharmacy • General ward
7 th floor	• Ortho, gastro & pulmonology ward • Onco general ward ➤ Daycare chemotherapy • Ortho, gastro surgical cases ➤ Medical administrative rooms ➤ Bariatric room • Physiotherapy department • Step down & ICU • Neuro ICU & Surgical ICU – trauma cases
6 th floor	• OT for cardiac thoracic • Acute care unit for repiratory, cerebro vascular and nephrology • Acute medical care unit – II (AMCU-II) • Inpatient ultrasound • Oncology ward
5 th floor	• General medicine department • Step down private & semi private ward • AMCU –I (Acute Medical Care unit) ➤ Step down ward • Transplant department • Nephrology and urology ward ➤ Pediatric ICU ➤ Neonatal ICU • Fluoroscopy
4 th floor	• Department of respiratory medicine • Department of general surgery ➤ Burns ward • In patient services unit • Administrative block • Billing department for discharge patients

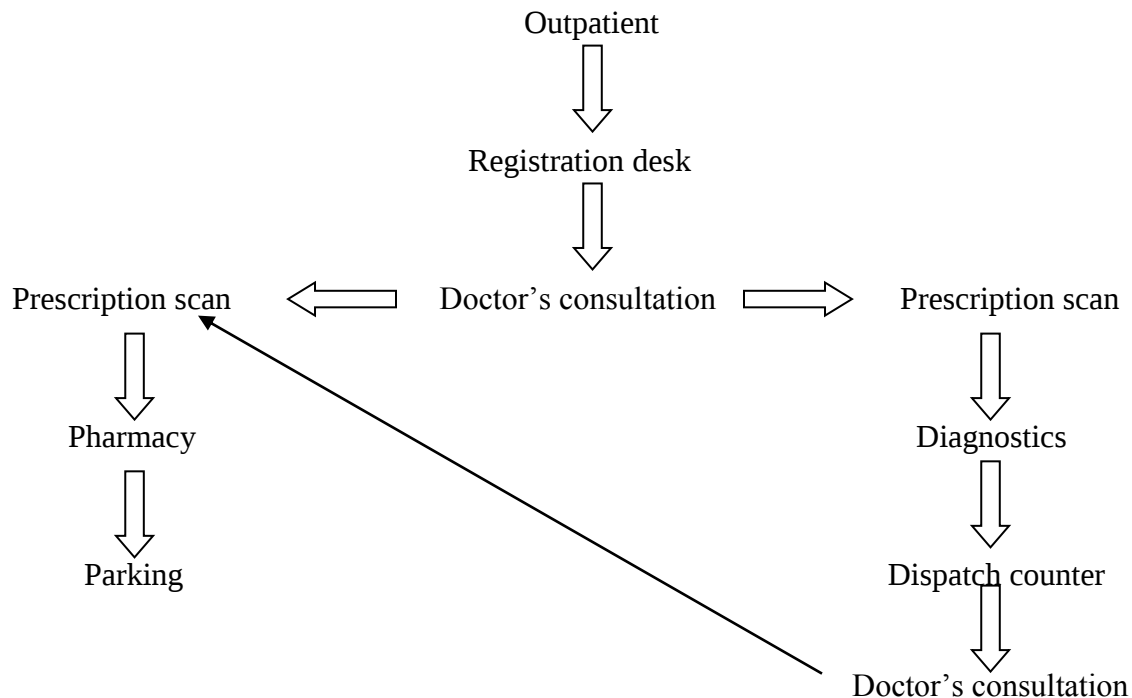
	➤ Cash billing ➤ Credit billing ➤ Typing summary ➤ Reimbursement • ANCU (Acute neuro care unit)& Neurology wing
3 rd floor	• Obstetric gynecology ward • Surgical ICU • OT ➤ Reception desk ➤ Pre- operative area ➤ OT rooms – 16 ➤ Post operative ward ➤ Anesthesia room
2 nd floor	• CATH Lab ➤ Cath labs – 2 ➤ Pharmacy ➤ Console room ➤ Washing room ➤ Doctor's relief room ➤ Nurse room ➤ Doctor room • International wing ➤ Deluxe room ➤ Super deluxe room ➤ Suite room • ICCU – I, II, III • Step down private • Day care • Typing summary
1 st floor	• Outpatient department – III ➤ ENT ➤ Vascular surgeon ➤ Medical gastro ➤ Surgical gastro ➤ Hepatology ➤ Interventional (Neuro) • Outpatient department – IV ➤ General surgery ➤ Dermatologist ➤ Pain ➤ Plastic surgery

	➤ Neuro surgery ➤ Ophthalmology ➤ Pediatric surgery ➤ Dental ➤ Eye check up room • Bakery • Outpatient pharmacy – II • Outpatient pharmacy – III (mainly cancer drugs) • Diagnostics – II ➤ Billing desk ➤ ECG, TEE, TMT, DSE, 2D ECHO • Dietician • Outpatient department – V ➤ LTT ➤ Rheumatology ➤ Cardiology ➤ Endocrinology ➤ Plastic surgery ➤ CT surgery • Outpatient department – VII ➤ General medicine ➤ Neurologist ➤ Endocrinology • Outpatient department – VII A ➤ Surgical oncology ➤ Radiation oncology ➤ Medical oncology
Ground floor	• Entry and exit of outpatients • Separate entry to accident and emergency ward • Front desk for registration of consultaions • Outpatient pharmacy – I • Outpatient department – I ➤ Gynecology ➤ Dermatology ➤ Orthopedic ➤ Neurology • Outpatient department – II ➤ Urology ➤ Gynecology ➤ Spine surgeon ➤ Neurology ➤ Orthopedic ➤ Psychiatry

	• Admission counter for cash, corporate, insurance for inpatients • Video/audio conference room for counseling • Help desk • Corporate desk • EHS desk • Aryogyashri desk for oncology and cardiology • Diagnostics – I ➤ Billing desk ➤ Sample collection ➤ MRI, CT scan, Ultrasound – 1,2,3; Xray ➤ Dressing room • Dispatch counter • Lift I – Till 7th floor • Lift II – Till 5th floor • Lift III – for doctors only • Lift IV – for 8th & 9th floor
Basement - 1	• Parking • Housekeeping department • Canteen • Outpatient department VI ➤ Nephrology ➤ Pulmonology ➤ Gynecology ➤ Pediatrician ➤ EEG, TMT, ECG, 2D ECHO, Mammography, ECD/TCD/ENMG, BMD, PFT • Health check up room
Basement - 2	Parking & Mortuary
Basement - 3	Parking
Basement - 4	Parking
Backside of Yashoda Hospital	• Aryogyashri Outpatient department • Medical records department • Hostel for staff • ATM machine • Ambulance parking

OBSERVATION & LEARNING

OUTPATIENT PROCESS FLOW



OUTPATIENT REGISTRATION DESK

Here, all outpatients have to take appointment for doctor's consultation. At this desk 10 billing executives sit who answers all the queries of outpatient and make sure they are given right directions where to go. These executives should have proper knowledge about doctor's timings, all doctor's names and where do they sit (OPD - I,II,III,IV,V,VI,VII,VII-A) and how much is there consultation fees.

- Any new outpatient is given registration form to fill which contains name, age, doctor's name, referred by, etc and is charged Rs50 along with doctor's consultation fees and all the details are registered in HMIS and prescription of desired doctor is given to patient.
- If any outpatient is already registered, then that patient is identified by YH no. which is written on previous prescription and a new prescription is given.
- In case that outpatient forgets to bring the prescription file then enquiry is done through patient's mobile no. on HMIS
- We have CGHS tariffs for few companies, for them registration fee is free, and they are charged with only Rs135 for consultation that should be mentioned in remarks column in Healthcare management information system (HMIS).

- For ECHS, NGRI and NRSA patients, consultation fees are Rs 135. Credit patients are sent to corporate desk and sent to basement 1 in OP-VI where credit billing is done for such patients.
- If patients who are not sure about which doctor to consult they are sent to emergency ward. We have Roaster day, where every doctor is assigned a particular day in a week where patient sent from emergency ward are sent according to roaster day.
- If there is any delay in getting consultation, there is an option for refund (done in cash).
- If any discounts like staff discount like 75% and for consultant 100%, it should be mentioned in remarks column.

After the patient takes prescription of desired doctor he/she is sent to OPD (I,II,III,IV,V,VI,VII,VII-A) where PRE(patient relation executive) sits on the desk and would take the prescription from patient keep it on doctor's table and tell him to wait till his turn will come.

- PRE-should be aware about the doctor's timings, when the doctor goes for rounds when will he (doctor) return, should also try to remember patient faces with their names if they are regular patients and make them feel comfortable.
- In the HMIS, list of all patients who have consultations for certain doctor comes automatically (date wise). When the doctor comes, PRE-has to click on START OPD for that doctor and if all consultations are finished then click on STOP OPD
- PRE-has to check if any patients has missed the consultation then he/she will call that patient to know what happened, if the patient wants to reschedule the appointment later it can also be done.
- In HMIS, it shows how many completed consultations and how many pending are there along with their waiting time is written.
 - Orange color sign shows walk-in patients
 - Pink color sign shows appointments
 - Yellow color sign shows cancelled appointments
- If any doctor has gone for inpatient rounds and many patients have come for consultations, then PRE can call the doctor.
- If any doctor is not coming tomorrow or for 3-4 days then, PRE-writes an internal sms regarding doctor's absence and which doctor needs to have roaster day in the absence of another doctor.
- 1or 2 couriers are there to check if the patient has completed with their consultation and they take the patient's prescription and scan it. Patients are also given outpatient feedback form to fill at the end of consultation.

- After scanning the prescription, PRE-evaluates the prescription for any investigations are there or not, medicines given or not, review after 5days or 15days or 1month or 3months or 1year is written or not, if the patient need to be admitted in IPD, referred Dr name and then all these details along with YH no of patient is written in excel sheet on a daily basis and submitted to their manager in evening.

DIAGNOSTIC BILLING

Software name: CLINADO

Functions

- Outpatient billing
 - New registration
 - Already registered patients
 - Patients forgot to bring the file then it is enquired through patient's mobile no
- Outpatient bill cancellations
- Balance bills
- Inpatient billing
- Lab requisition
- Lost bills/missed bills
- Inpatient bill cancellations
- Credit billing for company patients like CGHS

Through knowledge of all tests name is important for eg : X-Ray – Radiograph

CBP – Haemogram

- ✓ For certain tests like MRI, DSE, TEE appointment need to be taken to avoid delay
- ✓ For physiotherapy, credit billing is done in OP-VI and there are no discounts on procedures, profiles
- ✓ For MRI & CT scan, contrast cases, creatinine test should be done before
- ✓ For colonoscopy & endoscopy, anesthesia is required
- ✓ For BMD test to be done, patient should stop taking calcium tablets before the test (72hrs)
- ✓ Staff discount 75%, consultant discount 100%, elderly discount 10%, corporate discount varies from 20-30%

SAMPLE COLLECTION

4 people are available to collect samples

For outpatient – white slip is taken, check the diag no., voucher no. and enter it in system to get the correct barcode label which is attached on the sample before sending the samples to laboratory services on 9th floor through biohazard swiss log.

In system, click on sample should be collected

- For special investigation – pink color reflects on screen
- Emergency investigation – red color reflects
- Recollection of sample – green color reflects
- Fully paid – blue color
- Partly paid – white color

Different types of Vacutainers are used to distinguish sample for various tests

- Yellow color tip – electrolytes
- Blue color tip – for PT-APTT, D- dimer
- Purple color tip – anticoagulant (ADTA)
- Black color tip – Na citrate for ESR
- Small pink labels are attached to vacutainer or on white slip which indicates HIV or Hepatitis B positive
- For aryogyashri, white labels are put on vacutainer
- Grey color tip – RBS (random blood sugar), fluoride, citrate test

For inpatient, sample collectors directly go to respective ward and collect sample and couriers take it directly to laboratory services.

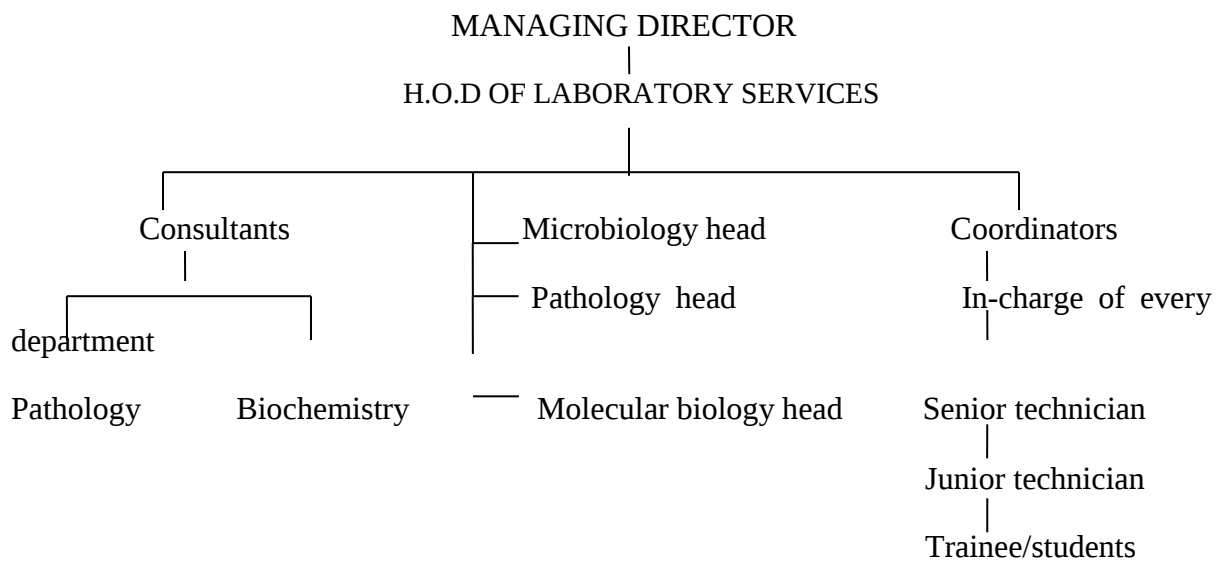
LABORATORY SERVICES

Departments: -

- SAMPLE RECEIVING AREA
- HAEMOTOLOGY
- BIOCHEMISTRY
- SEROLOGY
 - IMMUNOLOGY
 - VIROLOGY
- CLINICAL PATHOLOGY

- CYTOLOGY
- HISTOPATHOLOGY
- FLOWCYTOMETRY
- MOLECULAR BIOLOGY
- BACTERIOLOGY
- BLOOD BANK

ORGANOGRAM



SAMPLE RECEIVING AREA

Through Bio hazard Swiss log machine, only outpatient samples are collected along with their white bills from ground floor sample collection area.

For inpatient, couriers deliver the sample to sample receiving area along with yellow color inpatient activity card and department wise requisition form for testing like

- Yellow form – biochemistry
- Light green form – haematology
- Pink form – serology
- Microbiology – white slip

Process

In system,

1. **Log in window** – where investigation name, barcode, patient name, admission no. is checked for outpatients and signed on white slip which indicates sample is received
For inpatients, same details are checked along with location of ward and signed in inpatient activity card
2. **Distribution Center** – after checking the details, sample is distributed to respective department and at the time of distribution date & time is mentioned here
3. **Sample status** – date & time of sample collected, distribution received, result entry captured is mentioned

Errors detected in sample collection

- Wrong patient sample, patient name
- Wrong barcode label
- Insufficient sample
- Overfilled sample
- Sample not sent for distribution
- Delay in reaching the sample to lab

HAEMOTOLOGY

TESTS

- PT-APTT
- ESR
- HAEMOGLOBIN
- CBP
- BLOOD GROUPING

EQUIPMENTS USED

- SYSMEX – CBP / Hb test

- STA COMPACT MACHINE – Coagulation, protein (fat test)
 - DIAGNOSTICA STAGO – PT-APTT test
 - ROLLER 20LC
 - ROLLER20MC
- } ESR test

BIOCHEMISTRY

TESTS

- Ammonia
- Creatinine
- Uric acid
- Urea
- Glucose
- K⁺, Na⁺, Mg²⁺, P, Cl⁻, Ca²⁺
- Protein (CSF)
- LH, FSH, Folic acid
- T3, T4, TSH
- VIT B12, VIT D3
- Testosterone
- Prolactin
- LFT
- Lipid profile
- Progesterone
- Insulin

EQUIPMENTS USED

- 3 REMI R-8C BL for centrifugation
- VITROS 5600 – used for amino assay and chemistry assay tests
- VITROS 5.1/FS – only does chemistry assay tests
- COBASE 411- Roche HITACH for T3, T4, TSH, Insulin tests
- ADVIA centaur CP – used for hormones testing

SEROLOGY

TESTS

- HCV
 - HbsAg
- }

- HIV
 - Rapid Plasma Region(RPR)
 - Rheumatoid Factor Assay (RFA)
 - WIDAL test
 - ELISA test
 - Mantoux Test
 - Dengue NS- 1
 - Thyroid antibody
 - IgG, IgM,
- Serum/Plasma sample is taken
- } Plain Blood sample is taken

EQUIPMENTS USED

- ERGOTRON Architect Plus – 2
 - Used for HCV, HbsAg, HIV
- MINI VIDAS
- Vitros – used for ASCORF- Immuno turbidometer
- REMI R- SC BC – 2
 - Used for centrifugation
- Rotator – shakes the sample
- BIO RAD Analyzer – for ELISA test
 - Cardiolipin – IgG, IgM
 - HSV – IgG, IgM 192
 - Tib Fira
 - Glacto main assay
 - SMRMP
 - Anti Plasmolipid –IgG, IgM
 - Anti nuclear Antibody

} used for
- Refrigerator – for storing kits and reagents at temperature 2-8°C

CLINICAL PATHOLOGY

TESTS

- Urine test
- Stool test is done manually by checking stool routine and by hemo spot kit(occult blood)
- Sputum test

EQUIPMENTS USED

- Roche COBAS U411-2
- LABUMAT
- Urised – serve the purpose of microscope

Process for urine testing

1. Physical Examination
 - Color
 - Solution is transparent or turbid
2. Chemical Examination
 - ph
 - Specific gravity
 - Protein
 - Sugar
3. Microscope Examination
 - No of pus cells (range 6-8)
 - No of RBCs (range 10-18)
 - No of epithelial cells (range 1-2)

CYTOLOGY

Tests

- Pap smear test
- Body fluid test

Process for testing

1. Smear is taken on slide
2. Slide is fixated in 100% alcohol solution for 20-30mins
3. Slide is numbered
4. Slide is stained with OG 6 (orange gel) and EA 50& 36 (eosin aerosol)
5. Slide is finally mounted and labeled
6. Slide is sent to pathologist

HISTOPATHOLOGY

EQUIPMENTS USED

- Leica CM 18GO – Ag Protect used for frozen cells
- Thermo- cytospin 4
- Digital pH meter
- REMI 1MLH
- Yorco slide warming table
- Leica RM 2125 RTS – 2
- Leica 150 EG 150C
- Leica EG 1150H
- Yorco tissue processor – 2
- Sample receiving tray
- Grossing Stationary

PROCESS FOR TESTING

If swelling is there in any part of the body and is not going even after giving medicines or doing fine needle aspiration for cytology (FNAC), then biopsy is done where small part of tissue or organ is cut to check the tumor size, type of tumor and its appearance.

1. After biopsy, the tissue is further cut into thin sections at grossing stationary and labeled.
2. Since tissue contains water so, it is processed in 6 vessels containing 70%, 80%, 90%, 100% alcohol, and 2 xylenes at 58-60°C which helps in removing water from tissue.
3. After processing embedding is done, where thin section of tissue along with wax is placed in yellow color blocks and kept in refrigerator at 2-8°C
4. After removing from refrigerator, it is kept in rotator micro drum, tissue is trimmed till it gives ribbon type shape and then cool the block
5. After cooling, ribbon type shape of tissue is placed on the slide and again placed in cold water.
6. Put the slide in water bath at 65°C and then remove it after 5mins.
7. Heat the slide on slide warming plate and stain with 4 xylenes, 2 alcohol, and 3 hematology reagents.
8. Wash the reagents with water after 15-20mins and then it is mounted where barcode is checked and sent to histopathologist or oncologist who sees the cancer cells under microscope.
9. Tissue or organ is kept in 10% neutral buffer formalin for lifetime storage.

FLOWCYTOMETRY

EQUIPMENT USED – BD FACS Calibur, sample shaker

Flow cytometry is a laser- or impedance-based, biophysical technology employed in cell counting, cell sorting, biomarker detection and protein engineering, by suspending cells in a stream of fluid and passing them by an electronic detection apparatus.

A flow cytometer has five main components:

- Flow cell - liquid stream (sheath fluid), which carries and aligns the cells so that they pass single file through the light beam for sensing
- Measuring system - commonly used are measurement of impedance (or conductivity) and optical systems - lamps (mercury, xenon); high-power water-cooled lasers (argon, krypton, dye laser); low-power air-cooled lasers (argon (488 nm), red-HeNe (633 nm), green-HeNe, HeCd (UV)); diode lasers (blue, green, red, violet) resulting in light signals
- Detector and Analog-to-Digital Conversion (ADC) system - which converts analog measurements of forward-scattered light (FSC) and side-scattered light (SSC) as well as dye-specific fluorescence signals into digital signals that can be processed by a binary computer
- Amplification system - linear or logarithmic
- Computer for analysis of the signals.

CD4, CD8, CD3 cells are counted for HIV patients

Process

- Blood sample is taken through pipette and add antibodies 4, 8, 3 markers into it.
- After adding antibodies, antigen-antibody reaction occurs.
- Lysing solution is added to sample tube, which helps in breaking the RBCs so, that we get only leukocytes.
- The lysid particles are put for analysis in flow cytometry.
- Laser will heat the blinded cell and fluorochromes containing dye will emit light which cause energy loss and flash will come through which wavelength is detected by detectors and will be seen in interface.

If CD4 cells count are less, then virus is more, and immunity decreases which can lead to death.

For leukemia cells count,

Process

- Through pipette, blood is taken in a sample tube and antibody is added to it using another pipette.
- The solution is mixed with the help of shaker and wait for 10mins.
- Lysing solution is added to the solution and wait for 10-15mins and then centrifuge.
- Pour the supernatant and wash with sheath fluid which will help in acquiring the cells
- Finally, analyse the solution by putting it in the flowcytometry.

If there is a pool of blast cells, then there is a high possibility of leukemia.

Through flow cytometry, stem cells can also be counted.

MOLECULAR BIOLOGY

TESTS

- Extracting RNA from HIV virus
 - HBV extraction
 - Tissue Extraction
 - RNA extraction from DNA
 - EGFR mutation
- } Done in Pre-PCR room

PCR (Polymerase chain reaction) room

After the extraction, it is kept in refrigerator at -20°C and then it is further processed with reagents for PCR procedure.

There 3 types of PCRs

1. Real time qualitative PCR
2. Real time quantitative or conventional PCR
3. Gel load PCR

Process for PCR

- Initiation of sample at 95°C
- Denaturation for single DNA OR RNA segment at 95°C
- Annealing at 50-65°C
- Extension at 75-80°C

EQUIPMENTS USED

- Incubator shaker
- Biosafety cabinet
- Refrigerator of -70°C
- Refrigerator of -20°C
- PCR workstation
- C1000 thermal cycler
- Thermal cycler CFX96
- Real time system CFX96
- Dry baths – 2
- Water bath
- NEYA centrifuge (100rpm to 15000rpm)
- Eppendorf centrifuge (4rpm to 16400rpm)
- Gel load PCR
- REMI R- SC BC – 2
Used for centrifugation

Post PCR room

Conventional methods amplify gel based cell check.

BACTERIOLOGY

To identify number of bacteria in blood, urine, stool and sputum.

TESTS

- Gram stain smear to identify Tuberculosis
 1. Sterilize the loop with cooking gas
 2. With the help of loop smear of sample is placed on slide
 3. Gram crystal violet stain is added on the slide and wait for 1min
 4. Wash the slide with water
 5. Gram iodine stain is added and wait for 1min and then wash
 6. Gram decolouriser is added for few seconds and then washed with water
 7. Add 0.5% saffron for 1min and again wash
 8. Dry the slide and then see it under the microscope

Blood agar is made by adding 50 ml of blood to 250ml agar and then the sample of aspirated pus is smeared over it and kept for 1 week till the growth of bacteria occurs

- Acid Fast Bacille (AFB) smear
- 1. AFB smear is done on slide and carbol fushion stain is added which helps in fixing the stain
- 2. Cotton with spirit using the forceps is heated under the slide till fumes comes and then wash
- 3. Add H₂SO₄ decolouriser for few seconds and wash with water
- 4. Methylene blue is added to it and wait for 1min and then wash the slide
- 5. After drying, keep it under microscope to see any bacteria.

EQUIPMENTS USED

- Laminar flow -2
- Autoclave
- Wash basin for reagents adding like KOH
- Vitek-II for incubation
- Refrigerator
- Wash basin for washing purpose

BLOOD BANK

EQUIPMENTS USED

- TACE-II Automatic component extractor
- Platelet storage agitator
- Terumo Penpol Deep freezer -80°C
- Terumo Penpol Deep freezer -40°C
- Cryo preservation water bath CB100
- Tube connecting devicer
- Whole blood cells storage at 2-6°C
- Artho machine VITROS ECI
- Artho machine MP – VDRC
- Unscreened Refrigerator
- Trima Accel aprehesis machine

REGISTERS

- Component preparation issue register
- Pack cell preparation issue register
- Master register – patient details screening
- Donor register
- Discard register
- Aprehesis register
- Blood bags stock register
- Hb tester

PROCESS

- First, **blood donor form/ aprehesis** is filled from reception desk
- Donor must have lunch before donating blood
- **Physical fitness test** is done which include height, weight, BP, temperature, pulse and haemoglobin test by safety lancet
 - Hb should be above 12.5 for females
 - Hb should be above 13.5 for males
 - People who weigh less than 60kg can donate 350ml of blood and who weigh more than 60kg can donate 450ml of blood
 - 3 seats having each BP instrument and oxygen cylinder are there to take care of patient during donation process
- **Aprehesis room** – Donors who want to donate only plasma, platelets, RBCs can undergo aprehesis in which Trima Accel machine centrifuges the components required from blood and then transfuses the blood into the body of patient.
 - Plasmaprehesis** – separating plasma from blood
 - Plateletaprehesis** – separating platelet from blood
 - Erythrocytaprehesis** – separation of RBCs from whole blood
- **Collection of blood is done in Phlebotomy room**
 - Time – half an hour
 - 10mins – blood donating
 - 20mins – frooti and biscuits are given to donor to gain energy after donation
- **Testing of blood in Laboratory room**
 - If people don't know their blood group, then blood group testing is also done
 - Cross matching of blood is done
 - Direct COOMBS test for autoimmune hemolytic anemia
 - Indirect COOMBS test for prenatal testing of pregnant women and testing of blood prior to blood transfusion

- **Screening of blood is done in donor screening room**
 - Artho machine VITROS ECI – used for screening of HbsAg, HCV, HIV
 - Artho machine MP VDRL – screening is done manually
 - It takes 1hour for testing
 - Blood bags are collected and put in unscreened refrigerator
 - If any of the blood bag is screened positive, then it is discarded by autoclaving at 121°C for 15lbs and then discarded in red dustbin and sent to Medicare as it has tie up with the hospital
- **Centrifugation room**
 - Blood bags are weighed, and equal no of blood bags are placed on opposite side of blood component separation unit like 2,3,4,6 blood bags
 - Plasma, platelets and cryoprecipitate are separated
 - Fresh frozen plasma are separated at 3200rpm for 8mins at 4°C
 - Random donor platelets are centrifuged at 2000rpm for 7mins at 4°C
 - Packed red blood cells are centrifuged at 1700rpm for 9mins at 22°C
 - TACE – II automatic component extractor, it separates random donor platelets from buffy coat
- **Storage of blood components**
 - random donor platelets are stored for 5 days at 22°C on platelet storage agitator so that it doesn't become rigid
 - frozen RBCs are stored upto 10yrs
 - Packed red blood cells are stored for 42 days or 6 weeks
 - Fresh frozen plasma is stored for 1 year at -40°C
 - Whole blood cells are stored at 2-6°C
- **Labelling**
 - Packed Red Blood Cells – A+ yellow label
B+ pink label
O+ light blue label
AB+ white label

A- Yellow label
B- Pink label

O- light blue label

AB- white label
 - Whole blood cells - A+ yellow label
B+ pink label
O+ light blue label

AB+ white label

- Platelet concentrate stickers – Platelet rich plasma
Random donor platelets
Buffy coat
- Fresh frozen plasma
- **Washing & sterilization room**
Needles are discarded in 10% Na Hypochloride solution

DISPATCH COUNTER

Software Name – Clinado – Consultant clinic (Patient Result Dispatch)

Man power

- 4 operators
- 3 couriers

Process for outpatients

- People get the bill copy of diagnostic tests and show it to PRE at dispatch counter
- PRE will type the diag no. in the system to see the report has reached the dispatch counter or not.
 - ✓ If reports reached the dispatch counter then tick mark is present
 - ☐ If reports have not reached the dispatch counter, then blank mark is present

If blank mark comes then, open the sample status of patients, diag no. is again typed where

- investigations of the patients are mentioned and tells if the test are done or not
- departments name is also mentioned like CP – clinical pathology, PB – biochemistry
- duration of test is also mentioned
- if report has been typed then green color shows ☐
- If the report is processing, then red color shows ○
- If the report has been dispatched online, then green color shows ○
Click on status → click open → report is checked if it is opening or not & see that report is processed.
- CT, MRI, Ultrasound, ECG, 2D echo, PFT, NCS, EEG, ENMG, TCD, ECD, BMD – reports of all these tests are placed in file & then given to the patient.
- For Ultrasound reports, Xray films, CT, MRI reports – doctor types the reports and sign the reports before sending through courier who will deliver the reports to dispatch counter.
- For EEG, ECG – graph is printed in the lab room and directly given to the patient
- Patients who have registered themselves for the test, for those messages will be sent on their mobiles telling them that their reports have come and please collect from dispatch counter.

- Blood tests are also dispatched online on the website-yashoda.com where the patient can type their username and password and get their reports.

Turn Around Time(TAT) for reports to be dispatched online, it includes

- Voucher number
- Patient name
- Admission number
- Requisition date – if the bill is prepared then the date of requisition comes.
- Sample collection- time & date of sample collection is shown
- Duration of sample collection
- Distribution- time of sample distribution
- Duration time for sample distribution
- Result entry – report is timed at what time
- Duration time from result entry to approval
- Approval
- Duration time for approval

Process for inpatient

- Courier boys will open the department section like radiology section in the system and type username & password → radiology → operations → result capturing → Section → all sections → diagnostic no. → Location of inpatient person (ward name) → Courier boys goes to inpatient ward and give it to inpatients.

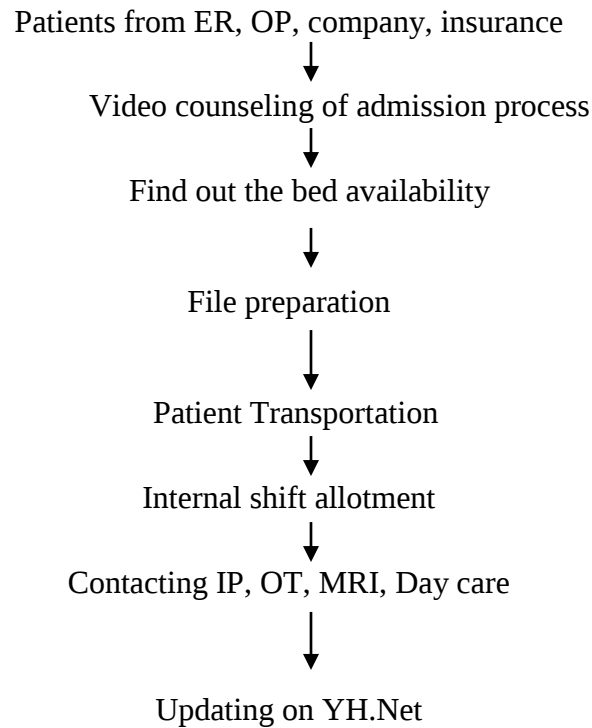
There is a section for special reports where reports go to other diagnostic centers for processing and it takes time from one week to 2 months.

LIMITATIONS

- Report is not being processed by lab services timely
- Printers have run out of ink
- Samples have not reached the lab services
- Report is processed but not uploaded online
- Samples have reached the lab services but have not been distributed for testing

ADMISSION DESK

PROCESS



FUNCTIONS: -

1) REGISTRATION

There are two types of registration

- Normal – (fill in the details highlighted in red) first name, last name, dob, address, contact number then save it. YH number is registered.
- New born- first name (mother's name), mother's YH number is typed and it autorefects information about dob, time, weight, type of delivery – forceps, normal, breech, vaccum,

Re-admission- after the patient is discharged from hospital but his condition worse has to get admitted again

Repeat admission- if the patient has chemo sessions and has to come every week then it is repeat admission.

2) PRE- ADMISSION – go to Reservation – select consultant’s name and time and then enter YH, patient details reflects , then select case type (procedural/medical/surgical) as per requirement – save

3) DAY CARE ADT (admission discharge transfer)– Registration/ Admission – registration page – first name, last name, dob, address, contact no.—save – YH No is registered

4) BED ALLOCATION

- Go to bed allocation window → reservation no. select bed → save
- Go to ADT window → select admission → enter YH no. (walk – in/ emergency/ new born) / Reservation no. (day care) – same procedure as day care ADT – save – print patient info form & labels

5) PATIENT TRANSFER

ADT – transfer – request/ confirm/ cancel

ADT – transfer – transfer request – location/ billing class/ patient type

- Location – select floors – enter IPno./ patient’s name – press enter – patient details reflects – select bed location – save
 - Billing class – enter IPno. – patient details are automatically reflected – select change from one billing class to another – vacant bed details are shown – select bed location – go to reason code – select reason --- save
 -
 - Patient types – select floor – enter IPno. – patient details are automatically reflected – entitlement column – select required info—reason code – select reason – save
- ADT – transfer confirm – location/ billing class – save
- ADT – transfer cancel – cancel remarks – save

6) QUERY

- IP Enquiry – search by patient name/ YH no./ Admin no./ phone no. – enter the required info – patient details are displayed
- OP Enquiry -- search by patient name/ YH no./ Admin no./ phone no. – enter the required info – patient details are displayed

7) REPORTS

Admission reports

- Admission form – enter the Admin no – patient info detail report gets generated—print
- Admission labels
- List of OD admission during the period
Admission during a period – date wise/ consultation wise/ year wise/
admission type – all info about admissions department

8) MAINTAINANCE

- Patient attendant room allotment – enter patient admission no.—auto reflects the patient details – go to column attendant room allotment – select room no. – go to reason column – give reason – save
- Cancellation of patient retained beds – bed no. column -- save

After admission, attendant pass is given

- Green card for company
- White card for cash & insurance
- Pink card for Aryogyashri

Yellow belt is tied around inpatient file for 65yrs and above – oncology, gynecology, paediatric, ICCUs, ACUs

Blue belt is tied around inpatient file for 18 above and 64yrs below

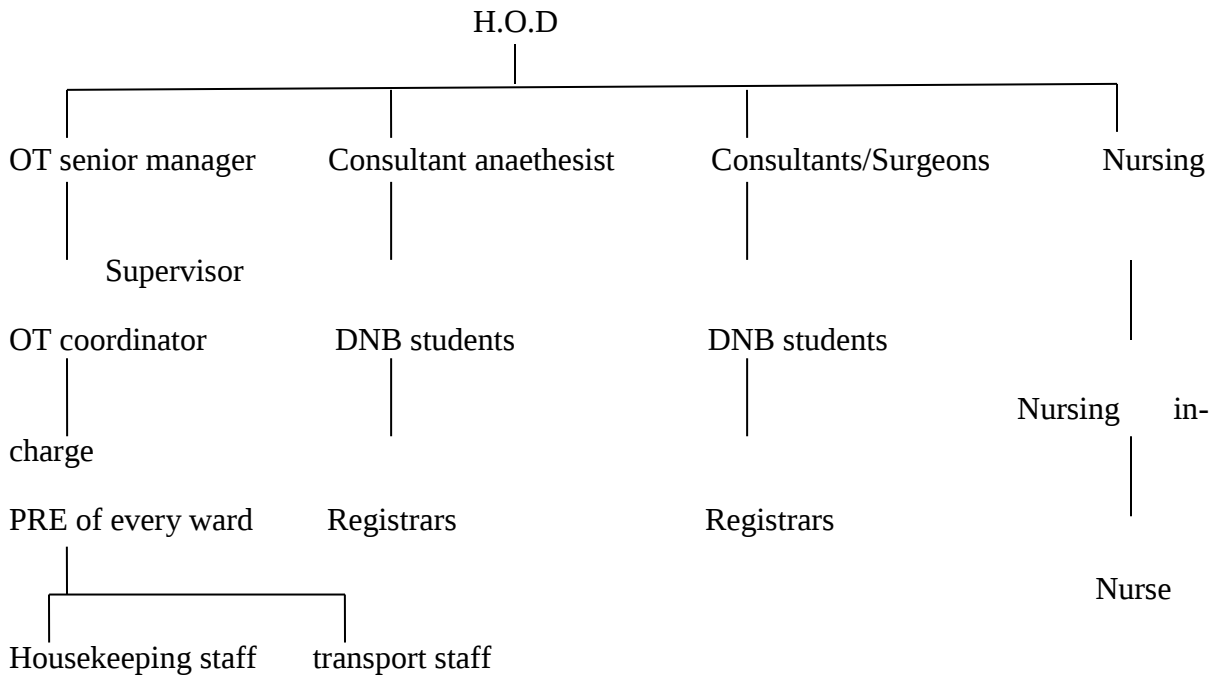
For non – availability of accommodation

Details are filled in form on day to day basis which contains

- IP no.
- Patient name
- Doctor
- Type
- Actual eligibility – room – date – time
- Actual allotted – room – date – time

OPERATION THEATRE

Organogram



Total OT rooms – 16 on 3rd floor

- OT – 1 – Spine/ Neuro
- OT – 2 – Gyn
- OT – 3 – ENT
- OT – 4 – General surgery/ Uro
- OT – 5 – Gastro
- OT – 6 – Urology
- OT – 7 – septic
- OT – 8 – Vascular/ Opth/ Pediatrics/ General
- OT – 9 – Robotic surgery

Major cases of oncology, gynecology and neurology are done here

- OT – 10 – Plastic
- OT – N1 – Ortho
- OT – N2 – Ortho
- OT – N3 – Ortho
- OT – N4 – Oncology
- OT – N5 – Onco + liver transplant (Donor)

- OT – N6 – Liver Transplant (Recipient)/ Onco
 - OT – N7 – Septic
 - OT – N8 – Robotic surgery
 - OT – N9 – Neuro/ Spine
- } Under construction

1 OT for Cardiac Thoracic Surgery on 4th floor

Process Flow

1. Consent is taken from patient and family for surgery to occur
2. Pre – Anaesthesia check up is done
 - Heart rate
 - BP
 - Weight
 - Oxygen Saturation
 - If patient has diseases like CVS, RS, ES, Thyroid etc
 - Airway is checked
 - PFT for asthamatic, bronchitis patients
3. Pre – anaesthetic evaluation form is filled by the anaesthetist
4. OT is booked for surgery
5. Patient is cleaned and made to wear gown before surgery
6. Pre- operative checklist is filled by doctor and nurse
7. Consent for anaesthesia/ sedation is taken by attendant
8. Half an hour/1hour before patient is brought to OT from ward
9. Review PAC is done on patient again
10. Local/General Anaesthesia is given to patient
11. Surgery of certain speciality is done in respective OT
12. After doing surgery, patient is shifted to post – operative ward

People present in OT room

- Circulating nurse
- Scrubbing nurse
- Consultants
- DNB students
- Registrars
- Anaesthesia technician
- Bio-medical engineering staff

Reasons for cancellation of surgery

- Patient is not admitted
- Patient & attendant have not given consent for surgery
- LAMA case
- After doing PAC, patient is unfit for surgery
- Patient has not arrived for PAC
- After review PAC done, patient is unstable
- Surgery is too costly so, they went to another hospital
- Patient went for second opinion and found that surgery is not required

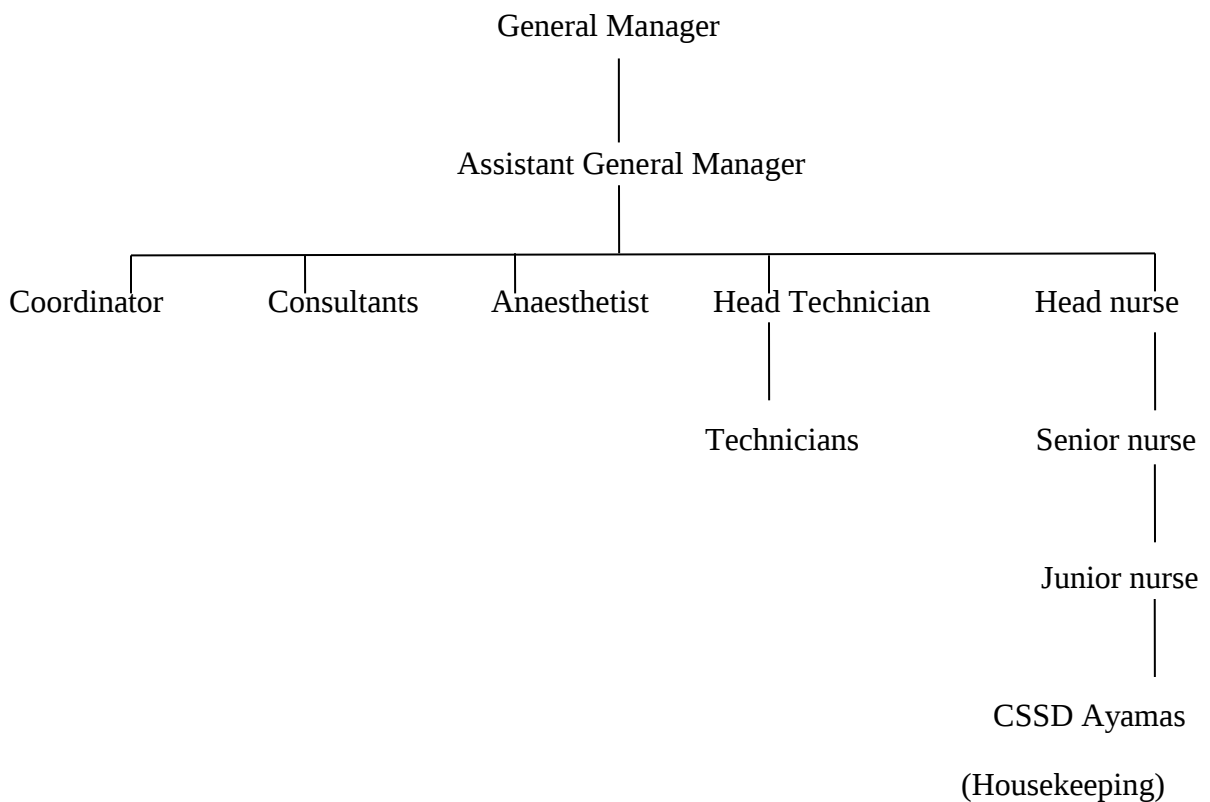
OT Sterility

- Carbolization
- Fumigation

CATH LAB

- 3 Cath labs
- Pharmacy
- Console room
- Doctor's relief room
- Doctor's room
- Cleaning area/ nursing area

Organogram



In Cath lab 1 & 2 , SIEMENS auxime Rtizee machine is used; while in Cath lab- 3 advanced Rtizee machine is used for neuro cases.

Type of surgeries

- CAG – coronary angiogram
- PTCA – percutaneous transluminal coronary angioplasty
- PCI – percutaneous coronary intervention

- CABG – coronary artery bypass graft
- PAG – peripheral angiogram
- RAG - renal angiogram
- PTR - percutaneous transluminal renal angioplasty
- PTPRA/PTA- percutaneous transluminal peripheral angioplasty
- TPI - temporary pacemaker insertion
- PPI - permanent pacemaker implantation
- RFA – radio frequency ablation
- PBMV – percutaneous balloon mitral valvuloplasty
- PBAV – percutaneous balloon aortic valvuloplasty

For angioplasty, radial & femoral approach is done

Cleaning area/ Sterile area

- Catheters are sterilized with nitrogen gas and cleaned with RO water
- Put catheters in xymokleen solution and dip it for 15mins and after that cleaned with RO water
- Dry the catheters with nitrogen gas and separate packing of catheters are done for angio sets and PBS sets
- After sterilization it is kept aside for 16hours
- After 16 hours, they are packed in steri packs and sent to CSSD for sealing
- Color code for gas sterilization
 - It tells for how many times catheters can be reused
 - G1 – green
 - G2 – blue
 - G3 – yellow
 - G4 – orange
 - G5 - red

After G5 code catheter is discarded.

Materials used in Cath Lab

- Stents
 - Stainless steel
 - Drug salinated

Sizes of stent ⇨ 2-4mm to 1.2 – 4.8m in length

- Balloons
Size – 1.25mm, 0.99mm, 1.5 to 4mm
- PCTA wires
- Sponge holders
- Forceps
 - Mosquito forceps
 - Thumb forceps
 - Artery forceps
- Suture materials
- Small curved scissors
- Towel clip
- Retractors
- Gauze cloth
- Cotton
- Big and small towels

Lead apron or Lead vest along with neck protection is wore during surgery to avoid radiation

After surgery, cath consumable form along with tray sheets (include all items placed in tray) is filled by head nurse and tray sheets are sent to pharmacist so that they are not confused and charge the amount to patients.

DIALYSIS UNIT

Room 1 – 18 beds which include patients who have screened negative for HIV, HCV, Hbs

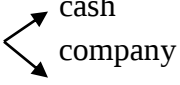
Room 2 – 3 beds which include patients who have screened positive for HIV, HCV, Hbs

Procedure room – 1 bed for VIP cases

Manpower

- 3 nephrologist consultants
- 1 nurse in-charge + 8 nurses
- 1 head technician + 8 technicians
- 2 DNB students
- 1 dietician
- 2 ayamas
- 2 boys

Registers

- Stock ledger
- Things register – dialyser, bed tubings, BP
- Consumable register
- Medication register
- Appointment register
- Costly medicine register 

1. Consent form for haemodialysis is filled by the patient or doctor
2. Dialysis patient handbook is given to every patient
 - Tests – HCV, HIV, Hbs; their date of screening; status
 - After every 3 months screening is done
 - Vaccination schedule
 - Blood transfusion details
 - Dialysis related issues
 - Investigations done on patient like blood urea, creatinine, K⁺, Ca, P, platelet count, Fe, etc
 - Chart of pre-haemodialysis and post-haemodialysis which are filled on every visit
 - Haemodialysis date
 - Weight before and after dialysis
 - BP before and after dialysis

- Pulse
 - Temperature
 - Weight difference (loss/gain)
 - Next haemodialysis date
 - Medication chart
 - Reason for change in medication
 - Nutritional assessment & diet
3. Every new patient is given a dialyser with his/ her name written on it
 4. Patient are given free food coupons

Basic tray contains

- ✓ NS
- ✓ Infusion set
- ✓ Heparin injection – 15ml
- ✓ AV set
- ✓ Dialysis kit

Dialysis process takes 3- 4hrs

Equipment used – **Fresenius Medical care 4008 S**

- Temporary access – neck, femoral
 - Through thigh access, dialysis can be done for 0-7days
 - Through neck access, dialysis can be done for 1month
- Permanent access – histole vein; radial by surgery
- Heparin injection (Reniparin – 25000 IU in 5ml vial) is put in the equipment to stop coagulation of blood while purifying.
- There are 5 profiles in the equipment which is set according to patient's requirement.
 - More than 3kg gain, for 4litre UF goal then profile 1 is set
 - Less than 3kg gain, for 1-2litre UF goal then profile 5 is set
 - Rate of blood flow should be half than machine flow.
 - Mostly profile 1, 5 is used mostly.
- For hypoglycemic patients, dextrose is given through I.V so, that he dosent collapse after dialysis
- Patients having anemia deficiency, then iron injection is given
- Patients having hypotension, profile 0 is used
- While purifying of blood, some of the minerals are lost so, to regain those minerals two cans are connected to the equipment – one for K⁺ and one for bicarbonate – if acidosis occurs then bicarbonate acid includes NaCl, acetic acid, KCl is given
 - Is alkalosis occur, then no correction is there

- Anti BP drugs are given for high BP patients
- If catheter is not put properly into vein, then machine gives an alarm
- Pure distilled water plant is there to clean the equipment

Machine parameters

- UF volume
- UF time left
- UF rate
- UF goal
- Effective Blood flow
- Cumulative blood flow
- Na
- Bicarbonate

If you have gained 0.2 kg or 0.5kg after the previous dialysis, then your UF goal is 1.5 litre of blood is purified and if you have gained 2kg then 3-4 litre of blood is purified.

After dialysis catheters are disposed of in blue color dustbin and dialyser is cleaned with RENATRON – II, it is a dialyzer processing system which contains Para acetic acid 1.73%. After cleaning the dialyser, it is put in separate shelf.

SIDE EFFECTS of Dialysis

- Weight gain
- Swelling
- Breathing problem – nebulizer is put along steroids
- Frequent urination
- No urine is produced
- Low sugar
- Low or high BP

MEDICAL RECORDS DEPARTMENT

It is a systematic documentation of patient medical history during his stay in hospital which includes observation, surgery notes, medication chart, investigation reports etc

MANPOWER

- HOD
- DMO – 1
- Coding person – 1
- Statistics person – 1
- Medical records executive – 4
- Couriers – 2
- Peon - 1

IN – PATIENT PROCESS FLOW

1. Casesheets of death, MLC, Insurance, Corporate are checked by checklist and if any date, sign of doctor or nurse or DMO is missing then it is sent back to the respective wards for correction, which they have to return the casesheet within 24hrs
For example, doctor notes, operation notes, medication chart.
2. ICD 10 coding is done of every disease which tells the site and type of infection
Like C – cancer
D – blood related diseases
A90 – dengue virus and 9 tells about the type of virus
3. Scanning of all casesheets are done in Electronic Medical records
4. After scanning, assembling of casesheets according to sequence
5. After the casesheet is assembled; EHS, CGHS, ECHS file are kept in separate shelves of current month
6. Health statistics are generated for every month like mortality rate, morbidity rate, average length of stay, no of discharged patients
7. Filing of casesheet according to IP No, year wise for storage
8. MLC casesheets are kept in separate room till 4th judgement of court is passed
9. Death casesheets are kept for 10years in separate room
10. Insurance, corporate, cash casesheets are kept upto 6yrs
11. Child casesheets are stored till the child attain 18yrs of age

OUT- PATIENT PROCESS FLOW

Prescriptions are scanned and stored in Electronic medical records

Original casesheets are not given to anyone, patients are given the Xerox copies of casesheets and doctor can see the file through EMR.

Sequence of Casesheets

- Admission form
- ER assessment – MLC, LAMA, CPR form, Death
- General consent
- Assessment record – doctor, nurse initial assessment; nutrition assessment
- Doctor notes
- Medication chart – SOS stat medication
- Non drug orders
- Patient & family education chart
- Clinical chart
- Intake & output chart, IV fluid/ infusion chart
- Nursing care plan, nurse notes
- Insulin- subcutaneous chart
- Doctor's visit sheet
- Activity card
- Inpatient investigation card
- Critical care charts
- Diet plan
- Consent for operation, anesthesia
- Pre- anaesthetic evaluation & record
- Operation notes and post – operative recovery score
- Blood transfusion form
- Consent for physiotherapy, procedures/investigations
- Emergency admission requisition form
- Credit approval forms
- Radiotherapy treatment chart
- Discharge summary
- OT , Cath lab consumable form

INPATIENT PHARMACY

Pharmacy is divided into 3 sections

- Day pharmacy
- Night pharmacy
- Onco pharmacy

Day pharmacy works from 9 to 5 pm

Night pharmacy works from 5pm to 9am

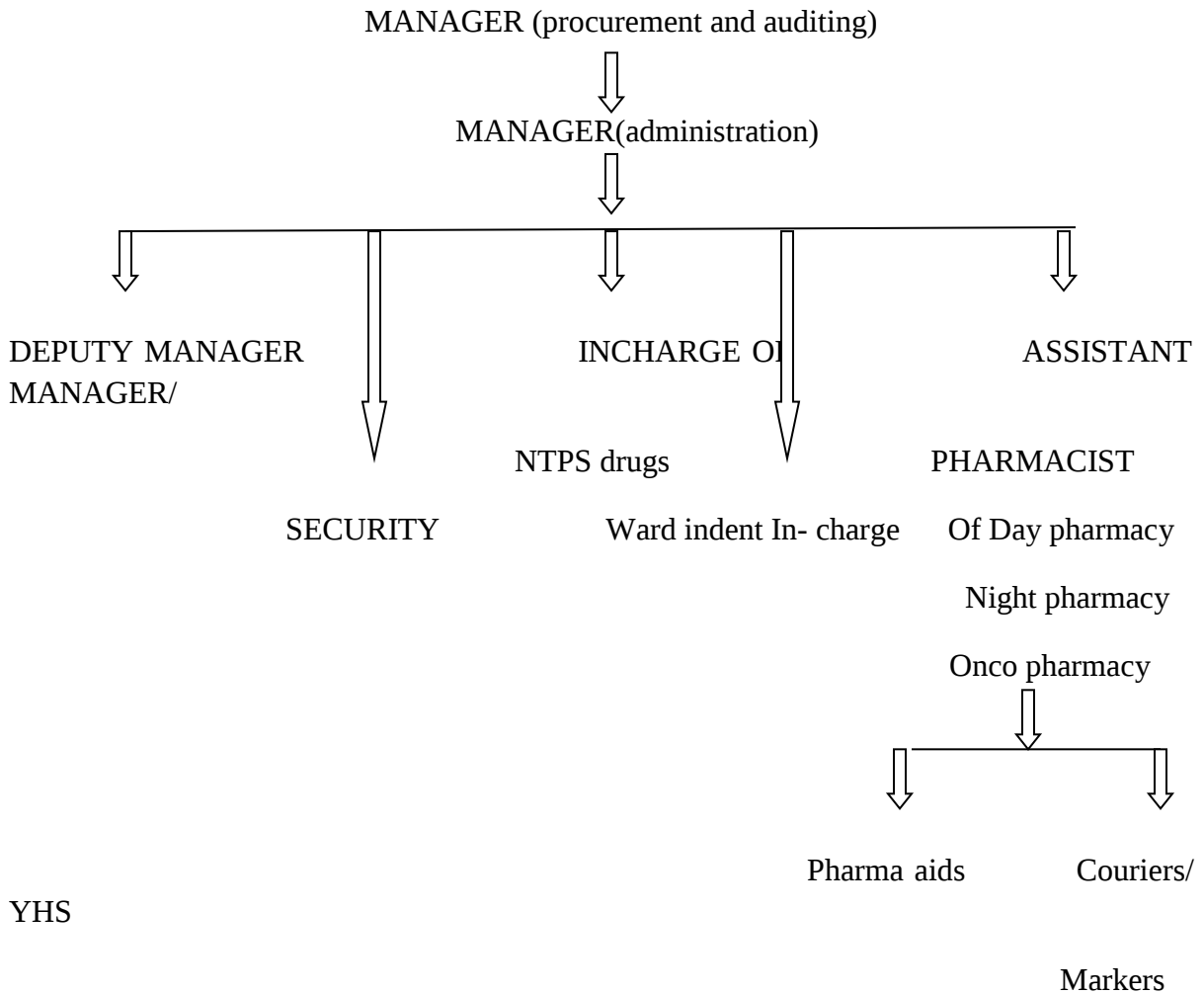
- Pharmacist/nurse of each ward sends **patient indent** (which contains all the drugs used during patient admitted to ward) in order to replenish the ward with medicines, they put the order on the system for issue of drugs which is seen by pharmacist or assistant manager in day pharmacy.
- In system,
 - Drugs reflecting light blue color on screen mean that they need to be issued to ward.
 - Drugs reflecting dark green color mean that they are issued by the pharmacist.
 - Alternate drug is given if a medicine is not available in stock.
 - When clicked on issue button then pending is cleared and available number of medicines is shown.
 - High risk medicines are shown in dark purple color.
 - Expensive drugs are issued when the patient has paid the bill (bill clearance is seen by going to patient details window)
 - **For unused drugs**, go to drug accepting screen select admission number and see the returned quantity of patient and tally with the returned medicines then click on the accepted quantity. After this drug are kept in shelves of day pharmacy.
- Through Ayamas, a slip of IP number, voucher number is written which is sent by wards and given to pharmacist who issues emergency (urgent) medicines.
- After issuing medicines in system, casesheet is generated by the pharmacist which is given to the person responsible for fast moving drugs on the table who further tells two other persons to add medicines in the packet before

packaging them, double checking is done by looking at the casesheet then it is delivered by the courier boy through a trolley to the respective wards and given pharmacist or sister and take their signature on the casesheet.

Fast moving drugs on table

- Separate boxes of grey, blue, violet, red, yellow vaccutainers
- Gloves, sterile gloves
- Cannula fixates
- Cartons of DNS, RL, NS solutions
- Insulin
- Alcohol swabs
- Band-aids
- Injections-1,2,3,4ml
- Canula of all colors
- Electrodes
- Thermometer
- Sterile water for injection
- Connecta
- Diagnosis needle for blood testing wards

Organogram



YHS

Process of Purchasing of medicines

1. List of medicines to be purchased are written and auditing is done by manager before purchase requisition is put to vendor
2. Bill containing list of medicines to be purchased is sent to accounts department where the person in accounts dept writes the date and signs on the bill after approval of goods. Accounts dept sends cheque to the vendor company.
3. After the delivery of medicines, a pink slip containing the date and sign of person at the time of audit, bill went to accounts dept, cheque was sent to vendor company.
4. This pink slip was attached to printed GRN paper and invoice company.

To make goods receipt note (GRN), there is a 7-step process

- Purchase requisition
Select item name, type, quantity of that item and then save

- Purchase requisition authorization
Authorization by deputy manager and manager is done
Indent date, indent quantity, last purchase order date is written here
- Purchase requisition allotment
It includes indent date, indent by, authorized by, allotted to user, item description
- Purchase order entry
Item type, delivery location, authorization, and check the bill amount is correct or not, purchase order no.
- Purchase order authorization
Supplier code, supplier name, currency
- Stock inward book entry
Payment mode, supplier no., transport type, vehicle no
- Goods receipt note
Invoice no of vendor company, batch no, quantity is typed in system and saved

WARD INDENT

- Items stored here are not charged to patients but are required by each ward
- Every Saturday, ward indent is issued.
- Items are checked and then taken by a person from each ward. Copy of bill is kept with ward indent incharge and person who collects the item

Items include

- Disposable masks
- Ventilator circuit
- Patient gowns
- T- piece with extension
- Y connector
- Tissue paper roll
- Adhesive plaster & tape
- Linear balloon catheter
- Blood tubings
- Flat drain set

INVENTORY MANAGEMENT

According to NABH standards

- In Fridge - insulins, chemo drugs, high risk medication, cooling medicines of temp 2-8°C

- Sound like medicines are kept in separate shelf with green color labels for eg:- pulmoclear and pulmopress tablet
- Look like drugs are separated with yellow labels for eg:- reflin and rosclin
- High risk medicines are separated with violet color labels
- Emergency medicines include all injections which are labeled with pink color
- Bulk tablets and small tablets are segregated by alphabetical wise and how many boxes of that alphabet
Like A-1, A-2, A-3, B-1, C-1 etc
- For sharp surgical items are separated by orange colour
- Satchets are labeled with mustard color
- Antibiotics are labeled with light cream color

Before 3 months of expiry, medicines are kept in separate shelf and entered in book, the expired drugs are signed by HOD and sent to Biomedical waste department.

NTPS drugs (narcotics)

- ✓ Drugs are kept in double lock system
- ✓ Every year hospital has to renew the license of narcotic drugs
- ✓ Narcotic prescription slip is filled and signed by doctor and this slip is given to NTPS drugs in charge who signs the slip and keeps the white slip with her
- ✓ In-charge gives narcotic drugs to nurse

EMERGENCY WARD

Beds – 25

According to triage, patients are admitted

➤ **Priority 0**

- MLC case – RTA, assault, burns, poisoning
- Patients are dead or have lethal injuries and will die after treatment

➤ **Priority 1 – 3 beds**

- It includes facilities like oxygen requirement, bipap requirement, resuscitation facilities – defibrillator, crash cart, ventilator
- Patients have life threatening injuries or conditions that are survivable with immediate treatment
- For eg:- air compromise, shock, cardiac arrest, seizures

➤ **Priority 2 – 9 beds**

- It includes facilities like oxygen requirement, ECG monitor
- Patients require definite treatment but no immediate threat to life exits
- For eg: - person has fall down, limb injuries, high fever, food poisoning, fainting etc

➤ **Priority 3 – 10 beds**

- It includes only ECG monitor
- Walk – in patients and patients having minor sprain, cuts etc

Isolation rooms – 3 beds

- It has facility of negative air pressure to prevent the spread of air borne diseases like swine flu, Tb etc
- Door should always be closed, and people should always wash their hands after coming out from the room
- Doctors, nurses, visitors should wear gloves, gown and masks

Manpower

- Manager - 1
- PRE – 2
- Data entry persons – 3
- Doctors – 4
- DNB students – 2
- Registrars – 2
- Phlebotomist – 1
- Pharmacist – 1

- Couriers – 2
- Boys – 2 (for transport)
- Nurses – 12 (includes in-charge)

Registers

- Attendance register for nurse & doctors
- Death register
- LAMA register
- MLC register
- Ventilator register
- Defibrillator register
- Inventory register – ECG monitor
- Medicine registers

Patient CSD in-dent slips

Ward CSD in-dent slips

On table, immediate use medicines are kept if any emergency arrives, which includes

- ✓ Pantoprazole injection
- ✓ Gloves
- ✓ Bandages
- ✓ Syringes
- ✓ Glucometer
- ✓ Ice packs
- ✓ Vacutainer needles
- ✓ Vacutainer-violet,red,yellow,green,
- ✓ Lancets
- ✓ Alcohol swaps
- ✓ Cannula
- ✓ Cotton
- ✓ Sterile gloves
- ✓ Acetone

Patients who have come directly to emergency ward have to fill a direct walk- in slip and sent to a doctor whose name has been assigned on roster day and that slip is signed by PRE

Reasons for LAMA cases

- Patient having Aryogyashri facility (RAS)
- Patient can't afford
- Patient is admitted in private hospital, NIMS hospital/Apollo
- Patient went home
- Patient has ESI facility
- Patient has CGHS facility
- Patient has EHS facility

PROJECT

REPORT 1: - A study on ALOS in Yashoda hospital, Secunderabad

INTRODUCTION

Hospital length of stay is an important performance indicator for hospital management and a key measure of efficiency in healthcare. A shorter stay will reduce the cost per discharge and shift care from inpatient to less expensive post-acute settings, including staff time which in turn will help in generating the revenue of hospital.

PROJECT TITLE 1: - To study and analyze the reasons for extended length of stay to improve ALOS in Yashoda hospital, secunderabad

Objective – To find out reasons behind extended length of stay of patients

METHODOLOGY

STUDY DESIGN – OBSERVATIONAL & ANALYTICAL STUDY

STUDY AREA – General ward; General medicine ward; Ortho, gastro & pulmonology ward

STUDY DURATION – May 8 to June 2'2017

SAMPLE TECHNIQUE – CLUSTER SAMPLING

STUDY SAMPLE – out of three wards, each ward is considered a cluster. All the discharged patients from these wards were observed during the period of May 8 to June 2'2017

DATA COLLECTION METHOD

- **Direct observation, ward wise discharge patient list**
- **Talking to PRE, DMO, Nurses of each ward and guest relations**

DISCUSSION

Various reasons involved in extended length of stay are

1. Delay in admission process
2. Difference in doctors opinion
3. Delay in sample collection and transferring the sample to lab
4. Delay in surgery
5. Delay in credit clearance/ approval for treatment/procedure
6. Delay in discharge process for credit patients
7. Cancellation of discharge at last moment by patients
8. Delay in discharge summary

9. Delay in receiving reports
10. Delay in shifting process
11. Delay in providing physiotherapy to patient
12. Delay in dressing
13. Investigation report written wrongly
14. Improper checking of discharge summary
15. Delay in writing discharge summary by doctor
16. Delay in completing the nurse's notes, DMO notes, doctor notes
17. Delay in sending the casesheets to bill department
18. Delay in doing investigations
19. Delay in responding time of nurses
20. Prolonged medicine treatment

PARAMETERS FOR EXTENDED LENGTH OF STAY

TREATMENT

- **Delay in doctor's consultation**
- **Difference in 2 or more doctors opinion**
- **Delay in responding time of nurses**

INVESTIGATIONS

- **Delay in sample collection and transfer to the laboratory**
- **Delay in receiving reports**

MANAGEMENT

- **Delay in discharge process**
- **Delay in shifting process**

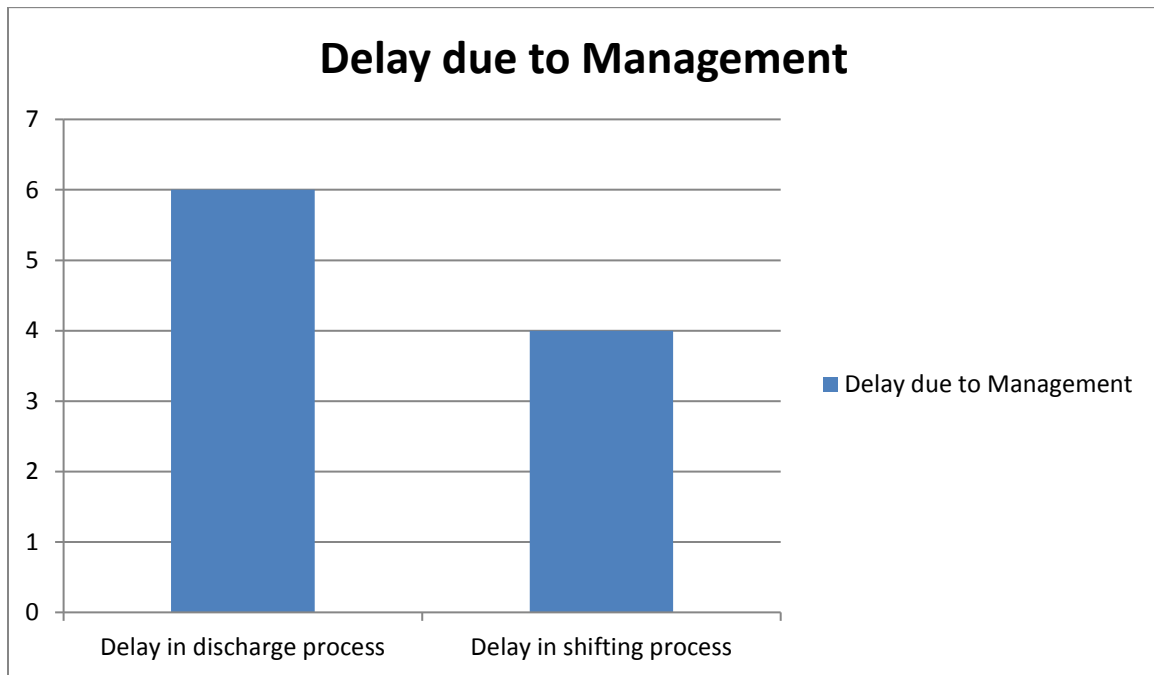
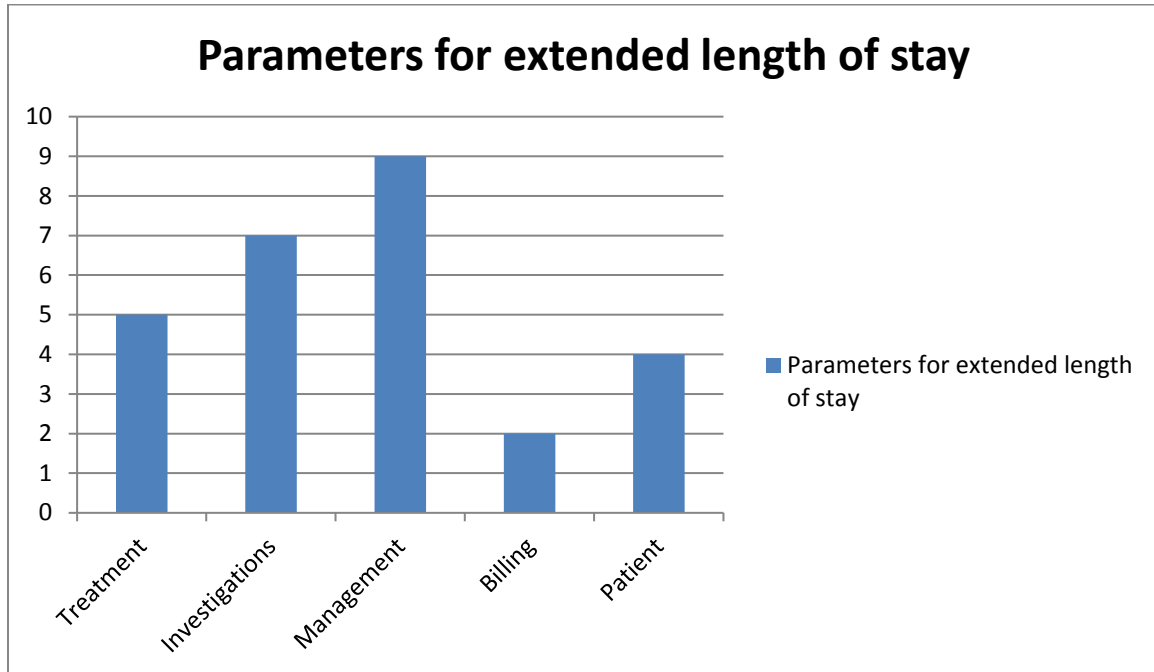
BILLING

- **Monetary problem**
- **Clearance of procedures**

PATIENT

- **Postponing of surgeries**
- **Cancellation of discharge**
- **Unstable condition of patients**

FINDINGS: -



CONCLUSION: -

- Among the various reasons, it was found that extended length of stay is mainly due to delay due to management followed by investigations during the period of study

- On further assessment in management department, it was found that extended length of stay is mainly due to delay in discharge process.

SUGGESTIONS

Reasons behind the extended length of stay	suggestions
1. Delay in discharge summary	• A night before discharge, summary should be prepared and after preparing double check for any mistakes. • After writing discharge of a patient in casesheet, doctor should immediately write the summary so that it timely goes for typing.
2. Delay in investigations	• For some investigations clearance is required so, for that nurse should immediately inform the person about the clearance problem at the earliest so that it can prevent delay. • Appointment for the investigation should be taken so that patient doesn't have to wait.
3. Difference in doctor's opinion	• Doctors should discuss among themselves about the patient problem to give confirmed discharge
4. Delay in shifting process	• Patient requiring oxygen support but due to unavailability of rooms with oxygen support which cause delay so, at the time of admission , patient should be asked for which type of room required and if not available then hospital should make arrangements so that patient dosen't have any problem.

**Report 2: - A study on consultation – pharmacy invoice
conversion rate of outpatient pharmacy**

PROJECT TITLE 2: - To study consultation – pharmacy invoice conversion rate of outpatient pharmacy

OBJECTIVE

- To compare consultations being generated and prescriptions being dispensed in pharmacy per day

METHODOLOGY

STUDY TYPE – Observational & Descriptive study

STUDY AREA – Outpatient Pharmacy, Medical Records department

DURATION OF STUDY – 11days from April 25 to May 6’2017

STUDY SAMPLE – OPD cash patients of eight doctors of four specialities

SPECIALITIES	DR.	DR.
RHEUMATOLOGY	A.N.ROY	KEERTHI TALAMARI
INTERNAL MEDICINE	VIJAY KUMAR.B	KAMLESH.A
CARDIOLOGY	SASHIKANTH.T	RAJASEKHAR.V
ENT	DEENDAYAL.D. S	SAIRAJ KUMAR

SAMPLING TECHNIQUE – Purposive sampling

DATA COLLECTION METHOD

- Primary source – direct observation
- Secondary source – from HMIS, Electronic medical records

METHODOLOGY

11 Days data on daily prescriptions being dispensed in pharmacy and data on daily outpatient’s consultation visits to those eight doctors and comparing both data to find out the consultation- invoice conversion rate and find out the reasons behind revenue loss.

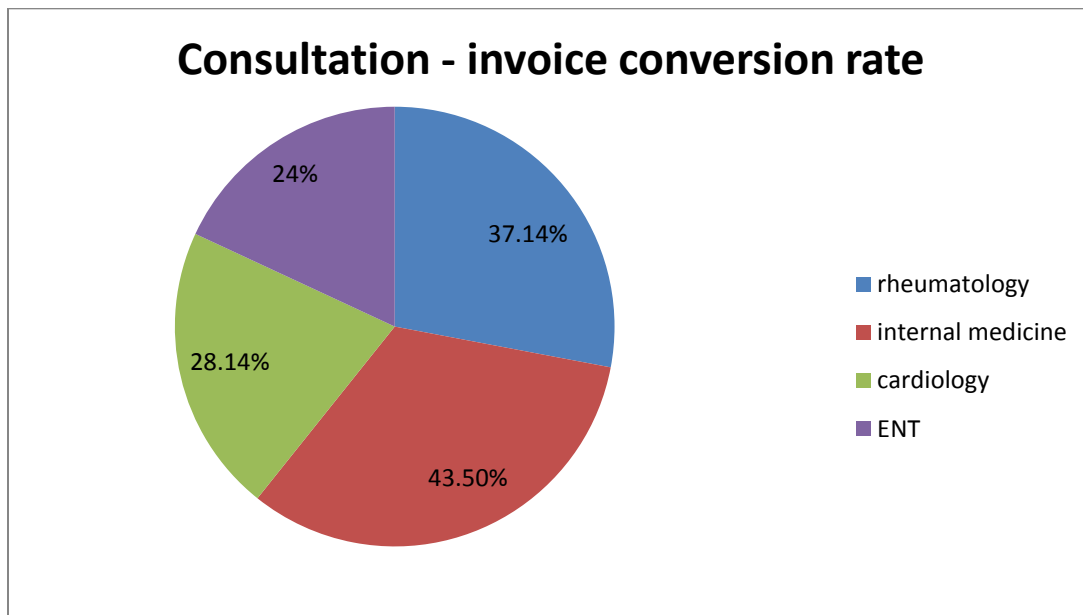
FINDINGS

During the study duration, total outpatient consultation visits are 2041, in which 693 prescriptions were dispensed in outpatient pharmacy which is about 34% of prescriptions are reaching the pharmacy.

1348 prescriptions are not reaching pharmacy which tends to be about 66%

Various reasons for not dispensing prescriptions in pharmacy

- Prescribed brand of drug not available in pharmacy stock
- Patient do not prefer to take any prescribed brand of drug if it is not available in pharmacy
- Patient can't afford expensive drugs
- Prescribed drugs do not have discount, so patient prefer to take medicines from outside
- Patient take 15 days medicines and rest 15 days medicines are taken from pharmacy near their house.



SUGGESTIONS

- Proper inventory control should be maintained in outpatient pharmacy
- Discounts should be given on certain prescribed drugs
- For revenue generation, telepharmacy should be done and also verbal marketing should be done by doctors and pharmacists.

**Report 3: - A study on prescribing pattern of doctors against
NABH standards**

INTRODUCTION

The prescription order is a type of communication between the doctor and the patient. The prescribing behavior of the doctor depends upon the input from various sources like patients, academic literatures, professional colleagues, commercial publicity and government regulations. Irrational prescribing is a global problem. The rationality of prescribing pattern is of utmost importance because bad prescribing habits including misuse, overuse and underuse of medicines can lead to unsafe treatment, exacerbation of the disease, health hazards, and economic burden on the patients and wastage of resources.

Yashoda hospital is accredited for eight years by NABH and it mandates to the revised standards (4th Edition) by 31st July 2016. One of the indicator in NABH is “Compliance to medication prescription in capitals” will be reviewed in the study by evaluating the prescribing pattern of doctors in Outpatient Pharmacy

PROJECT TITLE 3:- To study prescribing pattern of doctors against NABH standards

OBJECTIVE – To study the compliance of handwritten prescriptions against NABH standards

METHODOLOGY

STUDY TYPE – Observational & Descriptive study

STUDY AREA – Outpatient Pharmacy

STUDY DURATION – 11days from April 25 to May 6’ 2017

STUDY SAMPLE – 180 outpatient prescriptions

SAMPLING TECHNIQUE – Purposive sampling

DATA COLLECTION METHOD

Primary source – Direct observation

Secondary source – Electronic medical records

STUDY TOOL

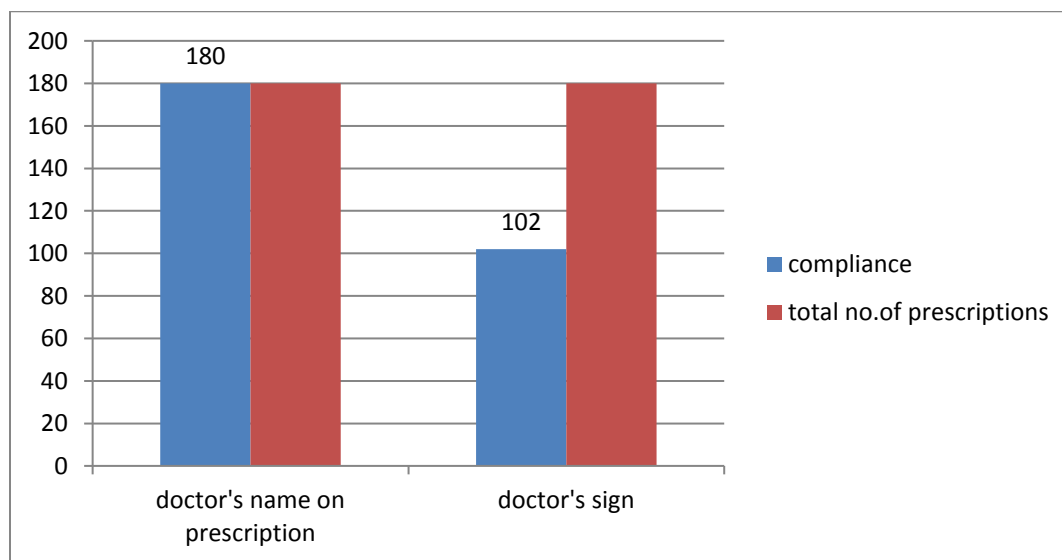
Checklist prepared according to NABH standards

Details pertaining to doctor	response	
a.Doctor name on prescription	Present absent	
b.Doctor's sign	Present absent	
Details pertaining to patient	response	
a.Patient's full name	Present Absent	
b.YH Id of patient	Present absent	
c.Patient age & sex age groups	Number	percentage
1. 11-20	1.	1.
2. 21-30	2.	2.
3. 31-40	3.	3.
4. 41-50	4.	4.
5. 51-60	5.	5.
6. Above 60	6.	6.
Sex distribution		
1. Male	1.	1.
2. female	2.	2.
d.Patient weight	Present Absent	
e.Complete diagnosis	Present Absent	
Details pertaining to medication		
a.Name of drug written legibly Legibility of prescription was assessed according to :- 1. Prescription details are clear 2. Clear but requires effort to read 3. Not at all clear	C (clear) E(effort to read) U (unclear)	
b. name of drug written in capital letters	Present Absent	
c. dosage form	Number	Percentage
1. oral	1.	1.
2.injectables	2.	2.
3. topical	3.	3.
4. inhalational	4.	4.
d. dose of prescribed drug	Present absent	
e. frequency of drugs	Present Absent	
f. no of drugs prescribed	No of prescriptions %	

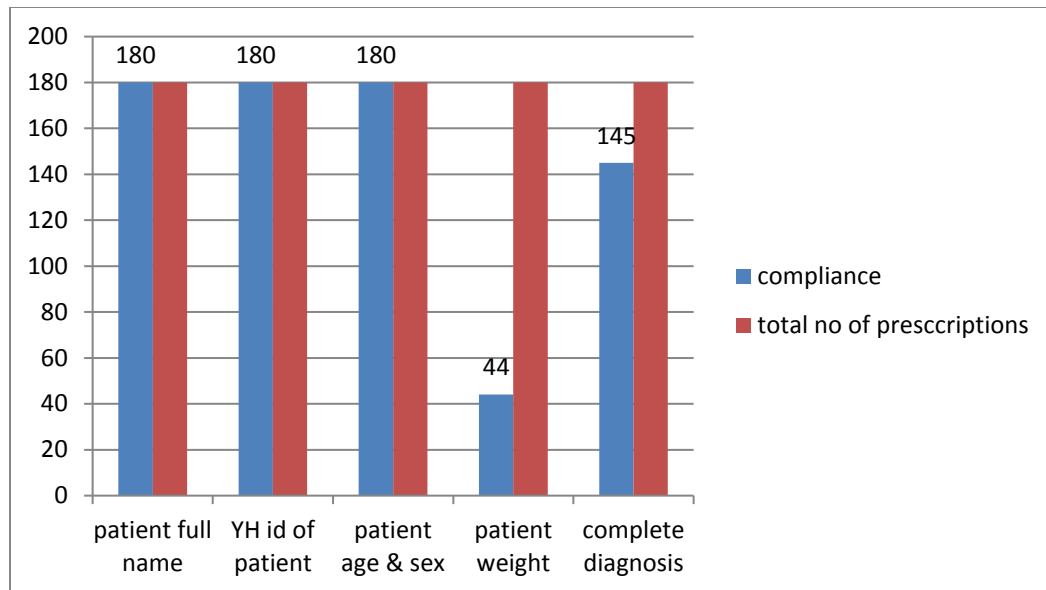
• upto 4 drugs • 5-8 drugs • More than 8 drugs	
No. of Antibiotics	Present Absent

FIGURES & TABLES

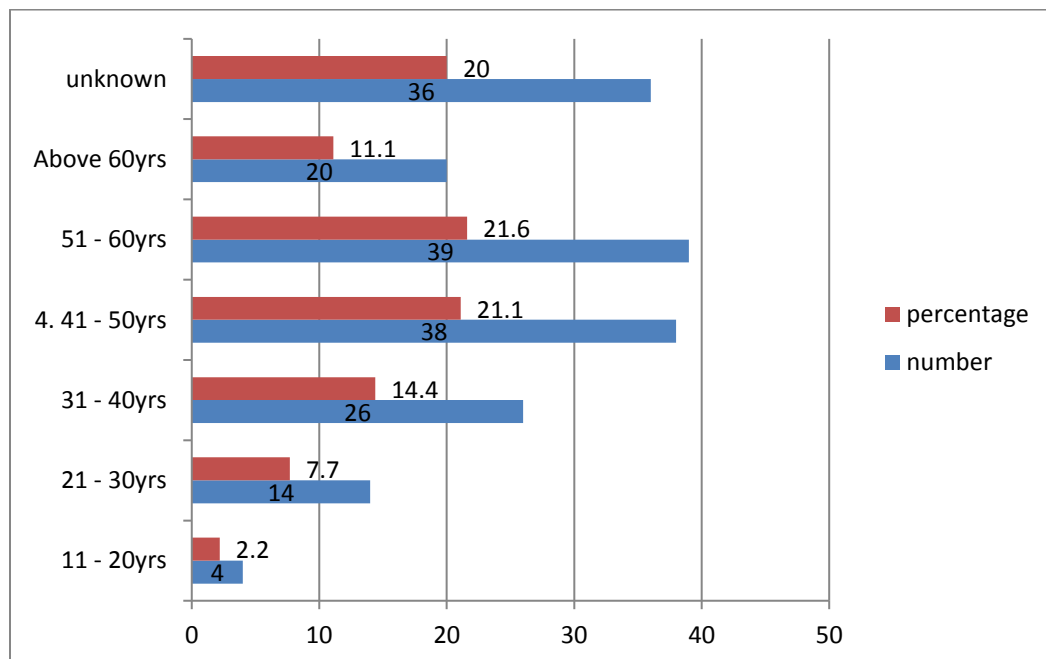
Details pertaining to doctor – Graph 1



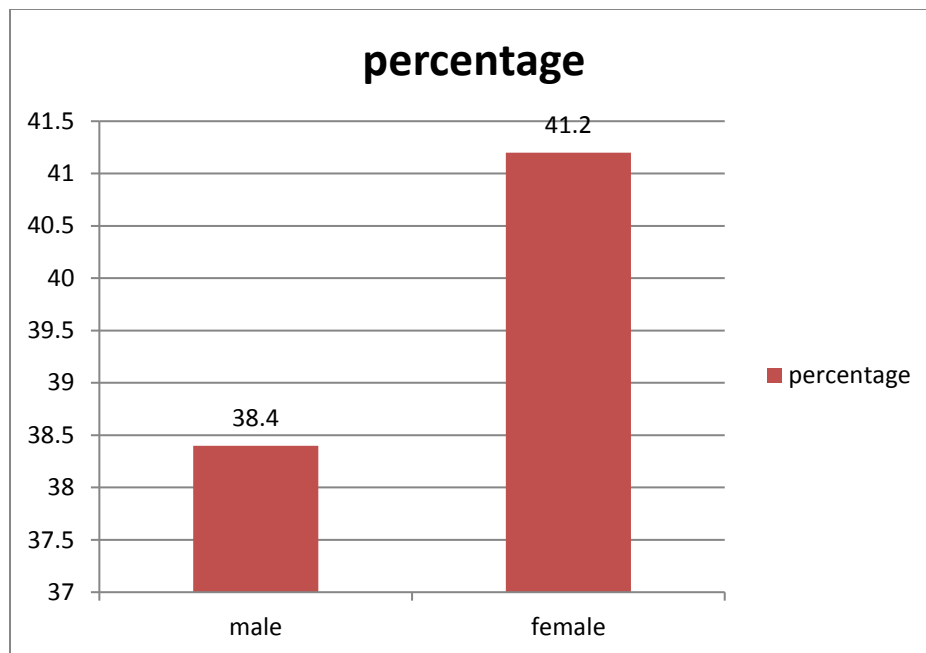
Details pertaining to patient – Graph 2



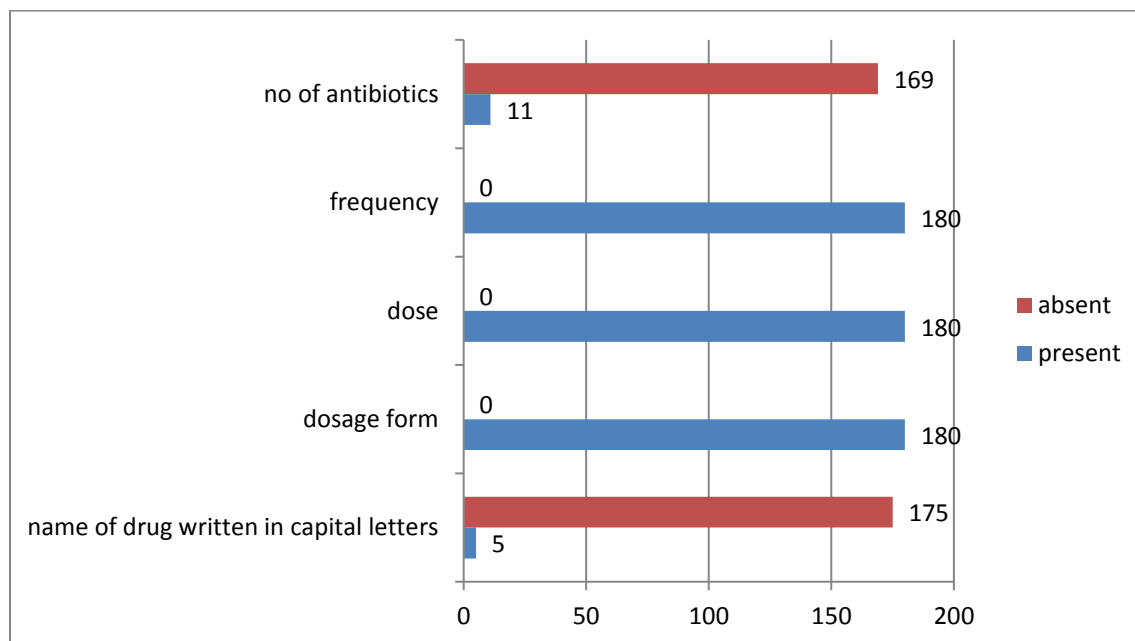
Prescription age profiles – Graph 3



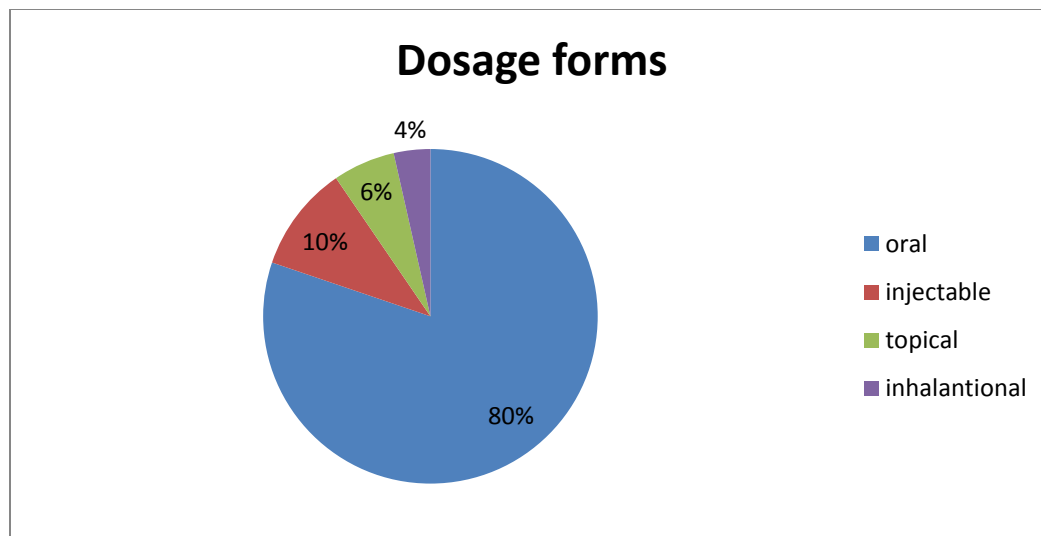
Sex distribution – Graph 4



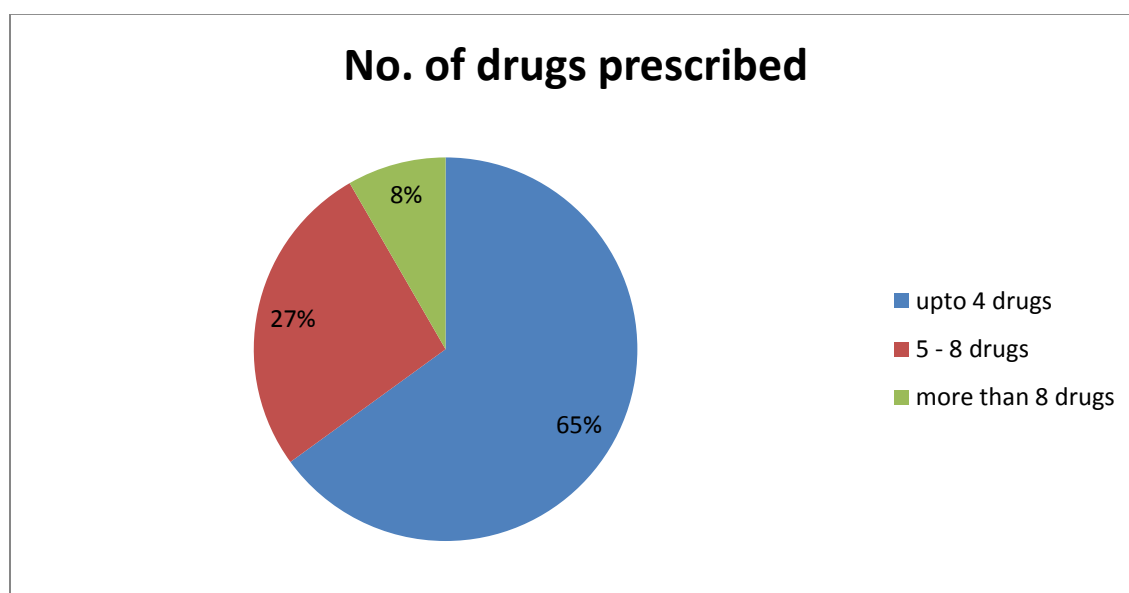
Details pertaining to medication – Graph 5



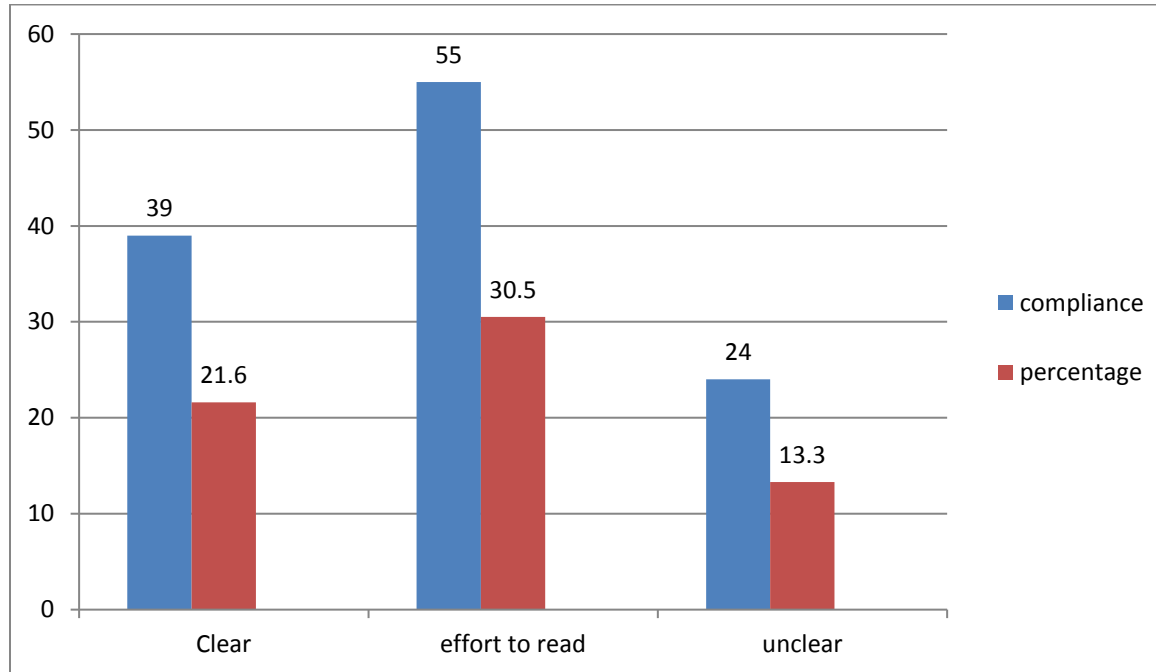
Drug profile – Graph 6



No of drugs prescribed per prescription – Graph 7



Legibility of prescriptions – Graph 8



RESULTS

- **Graph 1** - tells that doctor's name on prescription has 100% compliance but doctor's sign has 56% compliance with NABH standards.
- **Graph 2** - tells that patient full name, YH Id of patient, age, sex have 100% compliance as it is already printed on prescription of Yashoda Hospitals but there is 80.5% compliance of complete diagnosis on patient problem and patient weight has only 24.4% compliance.
- **Graph 3** - tells that prescription profiles of 51-60yrs range is high with 21.6% followed by 41-50yrs range with 21.1%, 14.4% for 31- 40yrs range, 11.1% for above 60yrs range, 7.7% for 21-30yrs range and 2.2% for 11-20yrs range.
- **Graph 4** – tells that gender analysis revealed that there were more female patients 41.2% than male patients 38.4%.
- **Graph 5** - tells that the compliance with frequency, dose and dosage form of medication has 100% compliance, it also tells that no. of antibiotics prescribed are less about (6.1%), name of the drug not written in capital letters according to NABH standards and has very less compliance for it about 2.77%.
- **Graph 6** - tells that most of the prescriptions contain oral dosage form (80%) followed by injectables (10%), topical (6%) and inhalational about (4%)
- **Graph 7** - tells that no of drugs prescribed per prescription is most in upto four drugs category with 65% compliance followed by 5 -8 drugs category with 27% compliance, more than 8 drugs category has 8% compliance.

- **Graph 8** - tells that legibility of prescriptions is more in clear but requires effort to read with 30.5% followed by clear legibility of prescriptions with 21.6% and unclear prescriptions about 13.3%

CONCLUSION

The study shows that level of completeness of handwritten prescriptions was low in name of drug written in capital letters, patient weight but still more compliance should be made in doctor' signature and clear and legible prescriptions.

A Majority of the prescriptions showed compliance to medication and patient details.

Remaining compliances showed less discrepancy.

SUGGESTIONS

The study highlights the need of regular supervision to sensitize the prescribers about the importance of neglected criteria for outpatients.

Also encourage them to follow the hospital prescription guidelines to make 100% compliance for the coming audit of NABH.

There is a need to move towards electronic prescribing to allow the hospital immediate benefit of improving legibility, completeness and elimination of transcription errors. A pilot study can be implemented.

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