

**Summer Training at
Max Super Specialty Hospital, Saket, New Delhi
(April 3 to June 2, 2017)**

Study on Medical Documentation Compliance in Inpatient Files

**By
Astha Billore**

**Under the guidance of
Mr. Rahul Sharma**

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

The logo for IIHMR University, featuring the letters 'IIHMR' in a large, serif font, with 'UNIVERSITY' in a smaller, sans-serif font to the right. The letters are white and set against a dark red rectangular background.
**Institute of Health Management Research
The IIHMR University, Jaipur
2017**

This is to certify that Mr./Ms. ASTHA BILLORE has undergone summer training in (Organization name MAX SUPER SPECIALITY HOSPITAL, SAKET) from 3rd April to 2nd June 2017.

The candidate herself/himself completed the project assign to his/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 him/her success in all her future endeavors.



Col. (Dr.) Ashok Kaushik

Dean (Academic & Student Affair)

The IIHMR University, Jaipur The IIHMR University



Name of the Mentor

Designation

RAHUL SHARMA
Asst. Prof

CERTIFICATE OF COMPLETION

This is to certify that

Dr. Astha Billore

has been associated as an

INTERN

with the department of

MEDICAL ADMINISTRATION

for a period of

3rd April 2017 to 2nd June 2017

at

Max Super Specialty Hospital,
Saket

"The Internship/Observership course is a Max certified course not
affiliated to any National/International society".

Head of the Department


Dr. Shubnum Singh

Dean - Nursing, Allied Health, & Wellness Programs
Max Healthcare, New Delhi


Ms. Brigitte Wuethrich
General Manager
Max Institute of Medical Excellence
Max Healthcare

ACKNOWLEDGMENT

I take this opportunity to express my profound sense of gratitude to all those who helped me throughout the duration of the project.

I would like to acknowledge, first and foremost Dr Sandeep Mor my mentor at Max Saket, for showing confidence in me for giving me a project that helped me get well versed with the various operations in the hospital and mandatory requirements for quality management. He has been a great source of knowledge, inspiration to do work with utmost diligence and sincerity

It is my radiant sentiment to place on record my best regards, deepest sense of gratitude to Dr. Tanu Goyal, (Assistant Medical Superintendent), Dr. Nitin Sharma, Mr Rajneesh Kumar (Ward Secretary), Mr Ramesh Samson and all of the support staff at Max Hospital, Saket, for their careful and precious guidance which were extremely valuable for my study both theoretically and practically.

I would like to thank Mr Rahul Sharma, my mentor from THE IIHMR UNIVERSITY for his constant guidance throughout the project.

I would also like to thank Dr. Nalini Kaul (Medical Superintendent) for allowing me to pursue internship in this esteemed hospital.

I perceive as this opportunity as a big milestone in my career development. I will strive to use gained skills and knowledge in the best possible way.

Sincerely,

Dr Astha Billore

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ABBREVIATIONS

ABBREVIATIONS	Meaning
ALOS	Average Length of Stay
COW	Computer on Wheels
CPRS	Computerised Patient Record System
CTVS	Cardiac Thoracic Vascular Surgery
EMR	Electronic Medical Record
ERCC	Emergency Response Coordination & Communication
ERT	Emergency Response Team
ICS	Incident Command System
IRT	Initial Response Team
ERT	Emergency Response Team
MAMBS	Minimal Access, Metabolic & Bariatric Surgery
MD	Doctor of Medicine
MDDF	Max Devki Devi Foundation
MLC	Medico-Legal Case
MPH	Master in Public Health
MSSH	Max Super Specialty Hospital
NABH	National Accreditation Board of Hospitals
NABL	National Accreditation Board of Laboratories
PAC	Pre-Anaesthetic Clearance
PAHO	Pan American Health Organization
PCP's	Primary Care Physicians
PPE	Personal Protection Equipment
RRT	Rapid Response Team
SCR	Security Control Room
TAT	Turn Around Time
TSSU	Thermal Sterile Supply Unit
TTI	Transfusion Transmitted Infections
WHO	World Health Organisation

OBSERVATIONAL LEARNING

INTRODUCTION

Max Healthcare is committed to the highest standards of medical & service excellence, 'Patient Centered Care', scientific knowledge and medical education. The country's leading comprehensive provider of standardized, seamless and international class healthcare services. Max has successfully implemented the "Medical Excellence Model" through its clinical team of expert physicians and nurses who work together in an integrated manner, assessing patient needs, ordering tests, planning treatments, scheduling surgeries, monitoring progress and planning for early discharge to home.

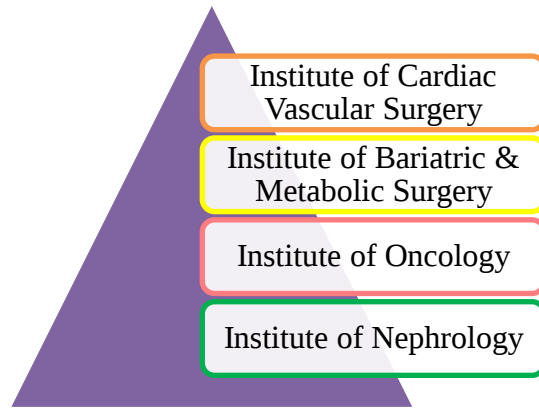


The pillars of this model include:

- Clinical governance
- Credentialing and clinical privileging of physicians & nurses
- Use of standardized, evidence based protocols
- Patient and staff safety
- Infection control
- A culture of audit and continuous professional development

Every department of the hospital was observed carefully for its working, staff, hierarchy, physical set up and major challenges faced by them and suggestions were made to overcome those challenges.

The hospital has four key areas of specialties:



MODE OF DATA COLLECTION

Data collection involved discussions with the Administrative staff, the HODs on the managerial issues, communicating with the other staff and going through the records.

Sources of Data

- Primary
 - By interacting with the HODs, executives, Doctors, Nursing staff and other valuable employees of the hospital.
 - Through direct observations.
- Secondary
 - Through registered records
 - Through website of the hospital
 - Literature available about the hospital like magazines, pamphlets, brochures, CDs, written documents



ORGANIZATIONAL CHART

FRONT OFFICE

- **First contact point** between the patients / their attendants coming to the facility.
- Gives directions to them about the locations of various departments.
- Performs in patient and out- patient registration.
- Does appointment scheduling of the patients.
- Makes doctors' available summary.
- Insurance management.
- Does registration and scheduling of preventive health check-ups.
- Helps in planning timely discharge a day before by inquiring about the same from the concerned consultants.

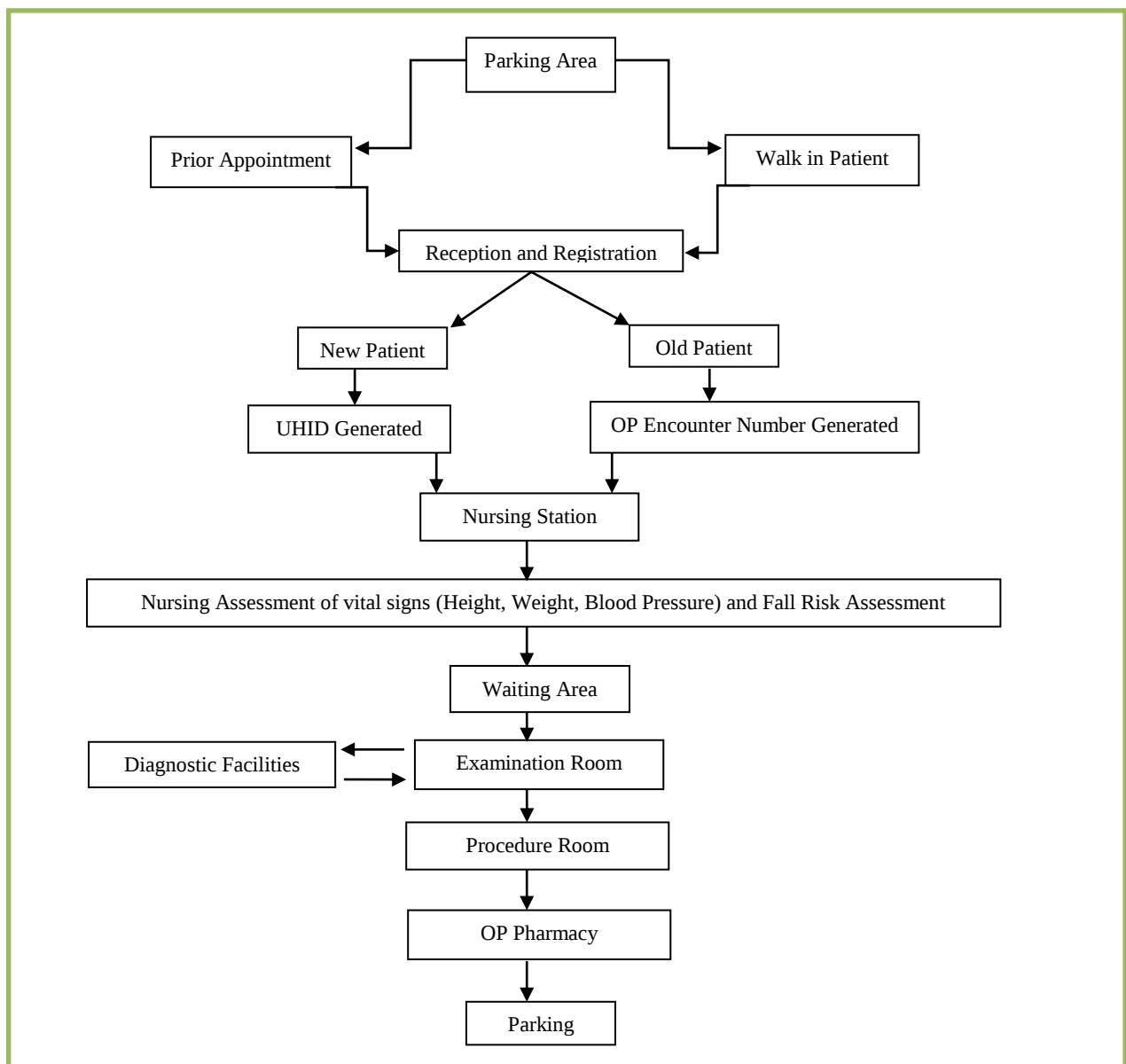
Challenges

- Shortage of staff
- Huge rush during peak hours, 9:00 am-12:00 pm.

OUT-PATIENT DEPARTMENT

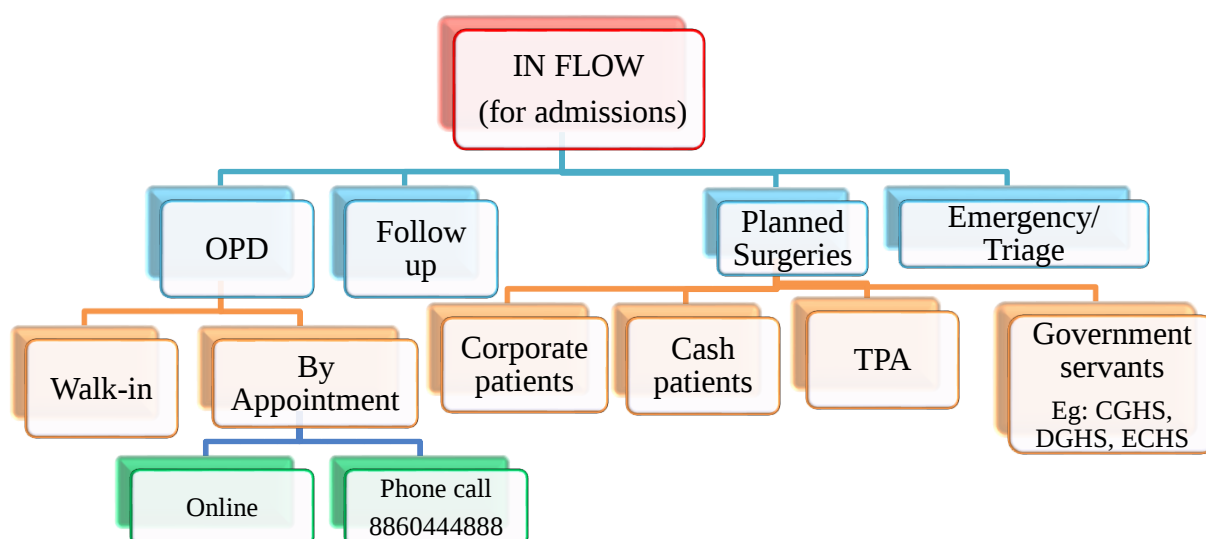
- Each INSTITUTE of Max hospital, Saket has its own OPD area as well as IPD area / day-care area wherever applicable with doctor's chambers and procedure rooms.
- Every OPD has a procedure room and its own Front Desk.
- Appointments are centralized and are recorded on the Hospital Information Management System. As soon as appointments are fixed, a text message is sent to the patient confirming the appointment, and a reminder message is sent on the day before the appointment. No walk-in patient is turned away, and the staffs try to accommodate these patients between the appointments already scheduled for the day.
- Each OPD waiting area has the capacity to handle 70-100 patients waiting.
- In case of a new patient, registration is done which is valid pan-Max and for life time of the patient and a UHID is created which becomes a unique identification for all his health-related information.
- For Chairpersons and senior doctors, a junior doctor does the initial assessment of the patient, which not only reduces the workload of the senior doctors (whose slots are always overbooked), but it also gives the junior doctors an opportunity to learn from the best brains in the industry.

The general process flow that is followed in all the OPDs is as follows:

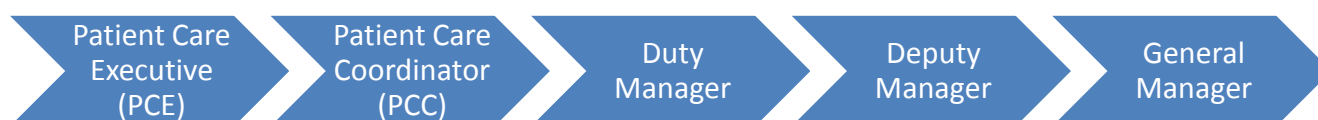


- If the patient has to be admitted to the hospital, he/she first reports to the admissions desk wherein all the paperwork is completed, do's and don'ts as well as patient's rights and duties are explained to him. An initial token amount is deposited here by the patient which is according to his preference of the room (be it economy, single, double, classic deluxe or suite)
- In case of TPA patients, the admission has to be reported to the insurance company within 24 hours.
- STAFF – 70-80; work in shifts with TPA staff working only from 5-5.

ISSUES- Huge departmentalisation which causes co-ordination problems



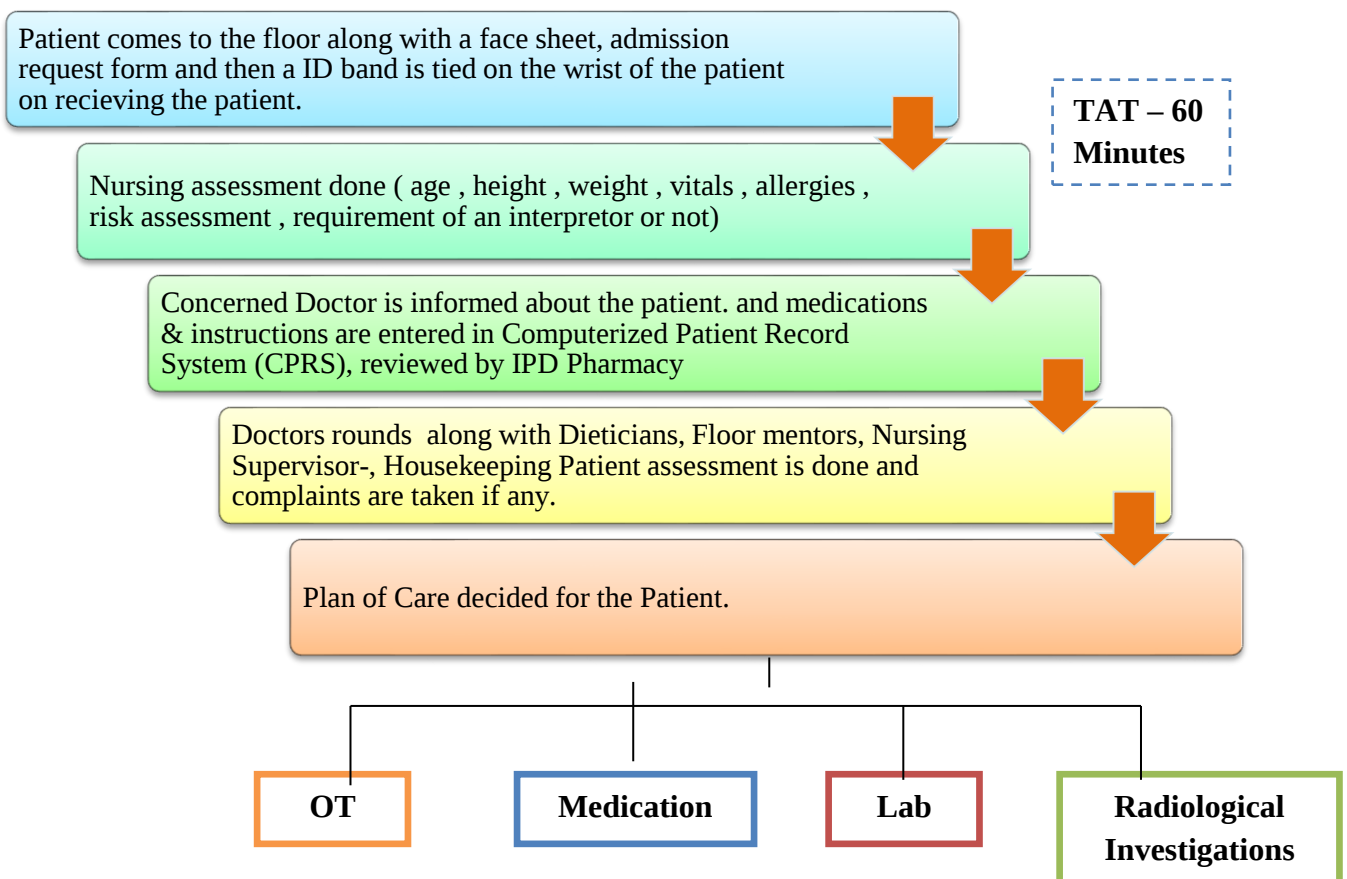
Hierarchy



IN-PATIENT DEPARTMENT (IPD)

- IPD is distributed over Six floors (G.F., 2nd-6th) in the east and Five Floors (2nd-6th) in the west wing of Max hospital including a total number of 229 beds in East & 132 beds in West.
- Every bedside has:
 - Details of Consultant, Nurse and Mentor written at the top of every bed
 - Room equipment checklist – Side rails, Oxygen, Suction, “**Safety First Bell**”
 - Important Instructions
- The rooms available in IPD have the following structure of beds per room:
 - Economy room – 4 beds per room.
 - Double – 2 beds per room
 - Single Deluxe
 - VIP suite
- Every floor has a central nursing station with
 - Information Board covering:
 - Designation & Contact numbers of
 - Duty doctor
 - Administration Staff
 - Floor Mentor
 - Support Staff

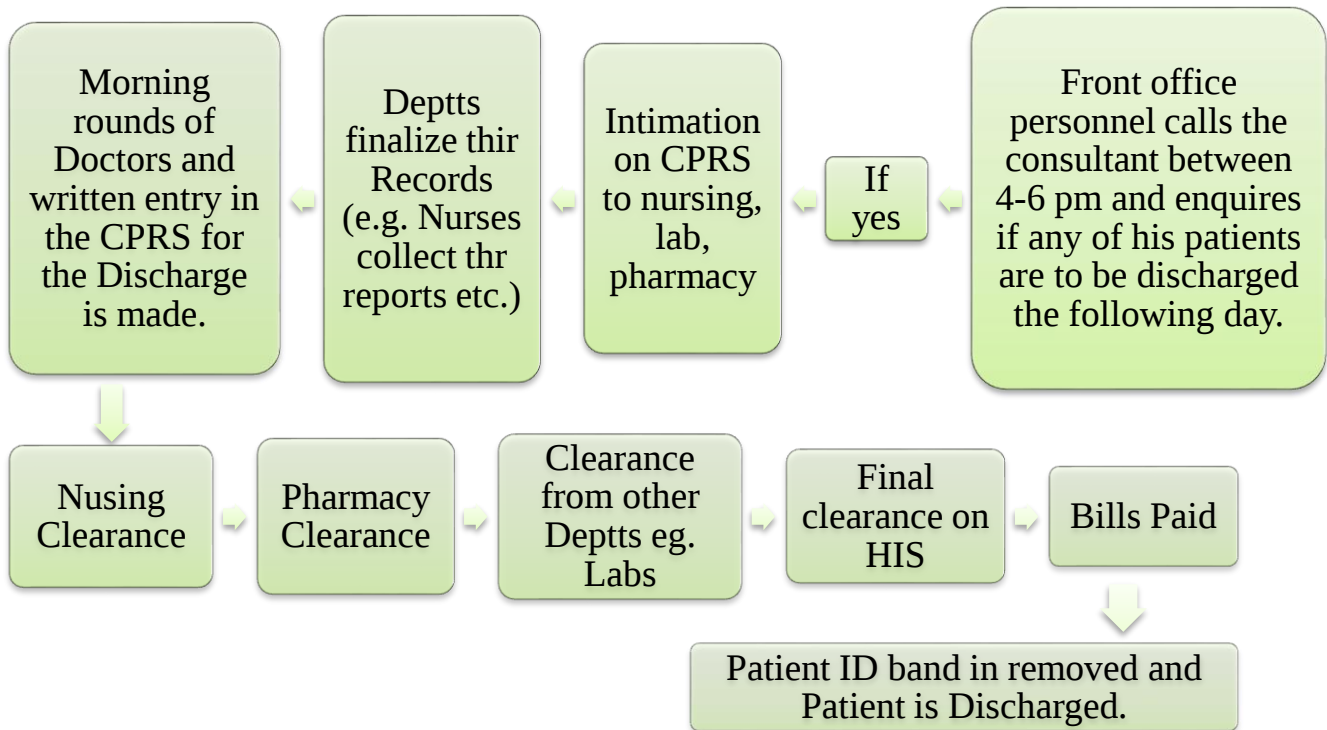
- Ward Secretary
- Bed Manager
- Nurses' names with shift timing and designation (8-10 nurses per shift) and allotted Room Numbers.
- Crash Cart parked next to the nursing station
- Computer on wheels (COW) - 4
- Cupboards with forms- down time form, investigation track sheet, blood request form, PAC sheet, informed consent, inventory files and registers
- Medication rooms – 2; Pantry – 1
- Records room
- Biomedical Waste Disposal
- Nurse to bed ratio = 1:5 or 1:6
- General Duty Assistants (GDAs) = 2-3 in every shift
- Average Length of Stay (ALOS) for normal Laparoscopic surgeries = 2-3 days
- Quality Indicators are: Patient Fall, Hypoglycemia, Needle stick Injury
- Process of admission of new patient to IPD



- **BARRIER NURSING-**
Isolation of the patient in case the blood or urine culture of the patient has been tested positive for any infection so that the infection doesn't spread to others.
- **REVERSE BARRIER NURSING-**

Done in cases where patient is immuno-compromised so that infection doesn't travel to him from others.

- **Discharge** Process flow of patient from IPD



- Documents included in Discharge of a patient- Discharge Slip, In-patient Bill (Summary + Detailed), Discharge Summary, Pre-authentication approval letter (in case of TPA), Doctor's Clarification and reports of the patient.
- Delay in Discharge is seen due to Final Bill clearance, TPA approval, finalizing discharge summary.

EMERGENCY DEPARTMENT

Due to the unplanned nature of patient attendance, this department provides initial treatment for a broad spectrum of illnesses and injuries, some of which may be life-threatening and require immediate attention, except for major burns. It is located at the ground floor with its own dedicated entrance from outside and to inside of the hospital and operates for 24 hours a day.

Ambulance - 2 ACLS (with CCTV camera for telemedicine, Suction Cardiac Monitor, Defibrillator, Oxygen Pump) and 2 BCLS (Ferno Stretcher, Oxygen Pump)

Patients are either transferred to other departments or are discharged within 4 hours. Max Super Specialty Hospital, Saket has made a world record for management of MI patient in emergency department from entrance to the balloon time in Cath lab, in less than 35 minutes.

Response time:

- EMO response time <1 min
- Consultant response time <60 min
- Code blue response time <3min
- Ambulance response time <10 min

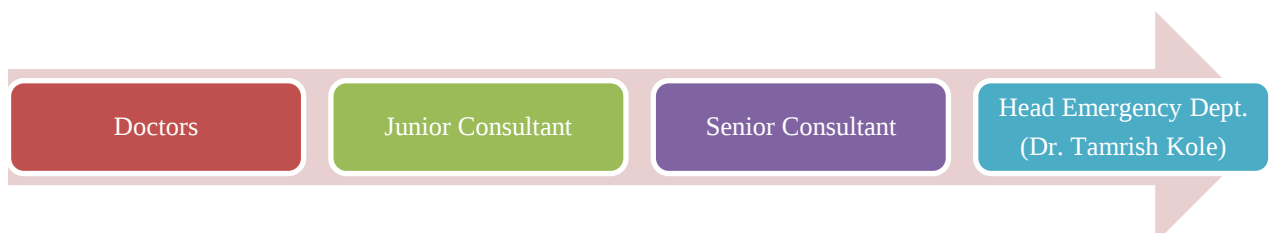
Infrastructure:

Total 25 bedded

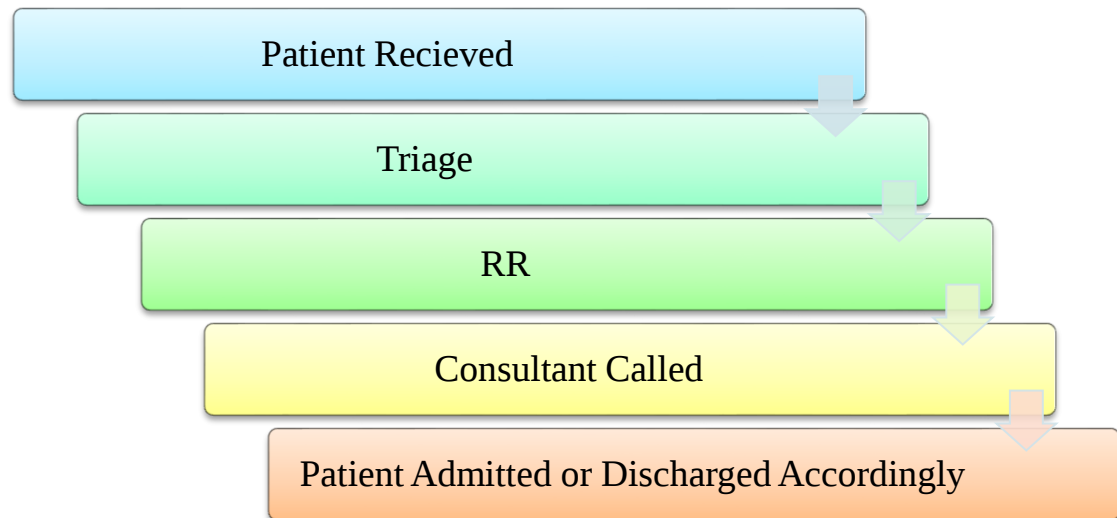
- Resuscitation suite -2 bed
- Urgent care area – 9 beds
- Observation area – 12 beds
- Triage – 2 beds
- Doctors work station-is located in the centre of the urgent care area
- Store room- is located behind the reception. Medications are filled twice a day and stock of two days is kept in advance for Sunday. Narcotics are also available and kept in double lock and key system.
- Hospital information system and CPRS
- COWS (computer on wheels)
- Waiting area for patient's attendants is outside the department.

Staffing:

1. Senior consultant (Emergency medical officer)
2. 4 doctors
3. Team leader
4. Emergency physicians - 3
5. Nurses: 32 (8 nurses per shift)
6. 2 personnel at reception
7. Paramedical staff for ambulance
8. 4 GDA per shift
9. Outsourced staff: security personnel.

Hierarchy

Process Flow



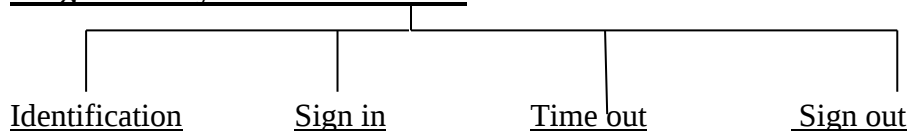
OPERATION THEATER COMPLEX

Operation theatre complex of East wing is located on first and second floor. Operation theatre complex has 11 operation theatre assigned to various departments. Cardiac, oncology, bariatric laparoscopic, ENT and plastic surgeries are performed in these operation theatres. Operation theatre complex of west wing is located on first floor. It has 7 operation theatres for various departments. Orthopaedic, neurology, gynaecology, Brain Suite intervention, general and robotic surgeries are performed here. 8th OT was under-construction.

Organization of staff: The staffs of Operation Theatre are organized into four groups: Anaesthetist- Surgeon, Nursing staff, Technician and Supportive staff.

- Nursing Station – 1
- Pre-Op Beds and Recovery Beds – 4 each
- Scrub Station - 2
- Average number of cases done per day – 20-25 in each wing, 15-16 Robotic Surgeries per month
- Temperature - 21 approx.
- Humidity – 50-55
- Light – 2000 lux in the centre of OT table and decreases on moving farther
- OT booking is done through online. 2 types of surgeries are performed – *Elective*: surgeon gets PAC done and gives an appointment; *Add on*: manual booking of OT in case there is cancellation of the scheduled cases due to any reason.
- Each OT complex has a separate material store and a TSSU_(Theatrical Sterile Supply Unit, TAT-45mins).
- Staffing ratio- Nurses: patients – 4:1(pre-op); 2:1(post-op)
Technicians: patients- 1:1
- OT Utilization – average is 70%

- Max super specialty hospital recently got a GREEN OT certificate which signifies minimal amount of pollution caused by OT gases and acceptable standards of practices being followed here.
- Sterilization is done by ETO (12 hrs); autoclave. Fumigation is done twice a day in the morning and evening.
- Bio medical waste disposal is done every 2 hours.
- Surgical safety check list includes



- Quality indicators: wrong patient, wrong surgeon, wrong surgery , return to OT(within 7 days) , waiting time for OT

INTENSIVE CARE UNIT (ICU)

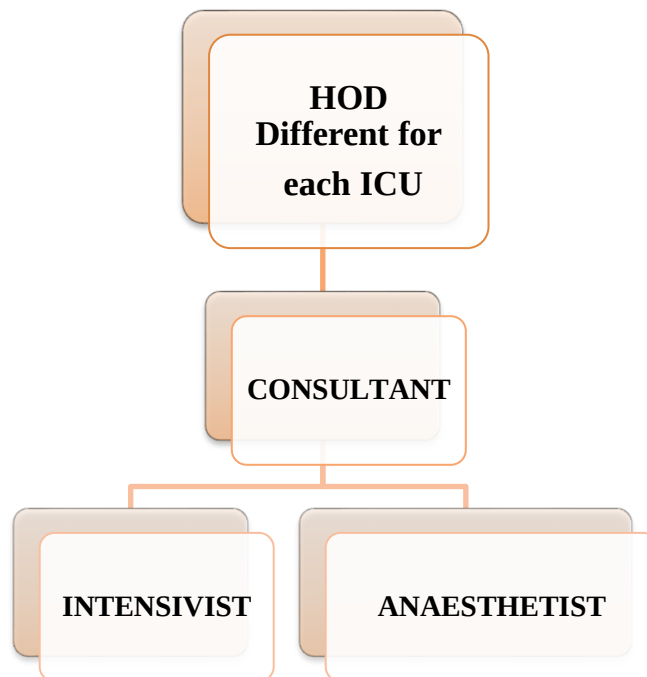
Max Saket has a total of 13 Intensive Care Units and 5 High Dependency Units in the Hospital:

Floor	East	No. of Beds	West	No. of Beds
G.F.	Apex Coronary Care	16		
1 st Floor	CTVS Cath Recovery Paediatric CTVS	17 14 11	Surgical Neuro-Surgical Neuro-HDU ISCU	11 9 9 4
2 nd Floor	Onco-Surgical Onco-Medical CTVS- HDU Cardiac HDU	9 12 4 4	Stroke and Neuro	8
3 rd Floor	Medical	8	Neonatal (a) Neonatal (b)	8 6
4 th Floor			PICU	8
5 th Floor			Ortho HDU	8
6 th Floor			Medical	8
		95		79

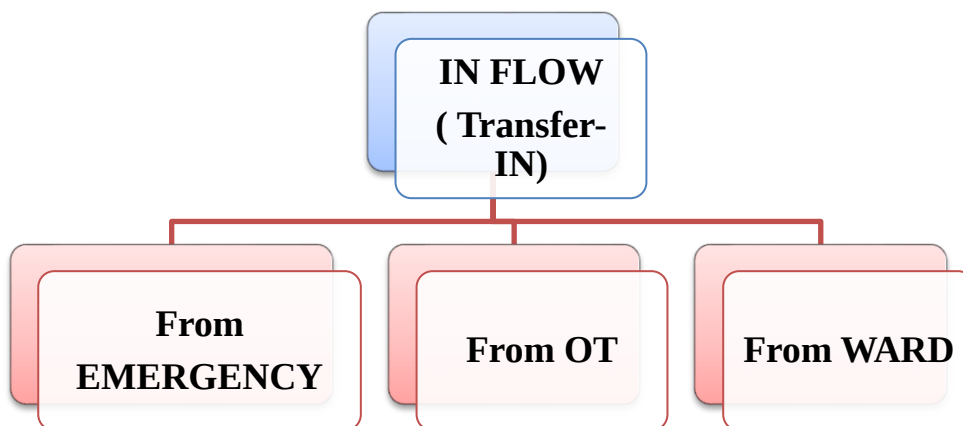
All Intensive Care Units have a 24-hour service of Intensivist and an Anaesthetist.

- Each ICU has 1 medication room, 1 Nursing Station, 1 Dr. room

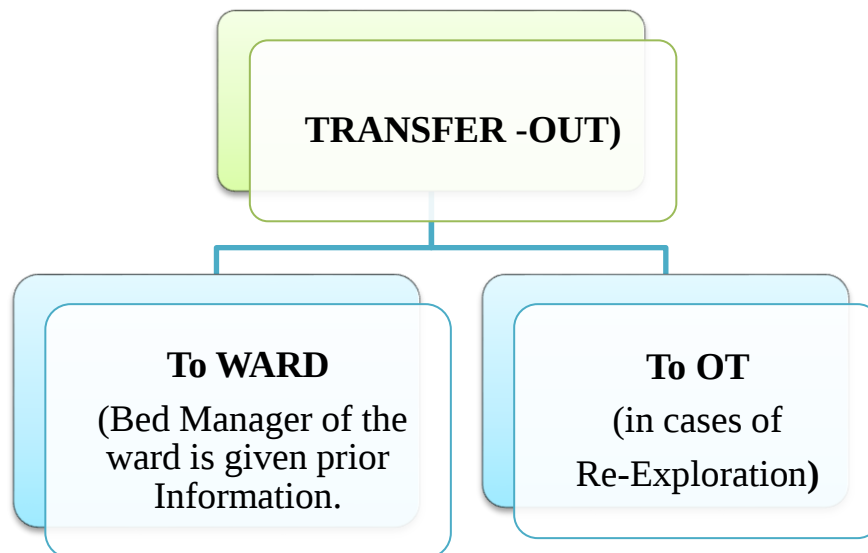
Hierarchy



Patient Flow



Beforehand information is given on call to the ICU for *transfer-in* of the patient.



- Patient: nurse – 1:1(for all patients)
- Patient counselling – done throughout the day; Family Meeting – done twice a day by the Intensivist.
- Protocol for infected patients –
 - Isolation
 - Visitor's policy- no visitor allowed inside the isolation room
 - Aseptic policy
 - Full PPA
 - Separate linen disposal in separate bags
 - Separate dressing trolley
 - Separate housekeeping material- dusters, mops etc
- Quality indicators-
 - Patient falls
 - Bed sores
 - Medication error
 - Nosocomial infections

All the Quality indicators are duly noted in “Quality Flash” and it is audited time to time and measures are taken to reduce the number of incidents.

CATH LAB

Catheterization laboratory or cath lab is an examination room with diagnostic imaging equipment used to visualize the arteries of the heart and the chambers of the heart and treat any stenosis or abnormality found.

Diagnostic procedures performed here are:

- Angiography
- Electrophysiology study (EPS)
 - Cath study

Out of these 3 angiography, angioplasty and cath study is done in cath lab 1 and EPS is done in cath lab 2.

Other procedures are:

- Percutaneous Transluminal Coronary Angioplasty
- Peripheral Transluminal Angioplasty
- Radio Frequency Ablation
- Permanent Pacemaker Implantation
- Intra Cardiac Defibrillation
- Cardiac Resynchronisation Therapy Defibrillator Device
- Cardiac Resynchronisation Therapy Pacemaker
- Left and right sided pressure studies
- Closure of some congenital heart defect

Slots are booked for everyday as per the doctors' and patients' convenience. About 70% of the slots booked are treated everyday

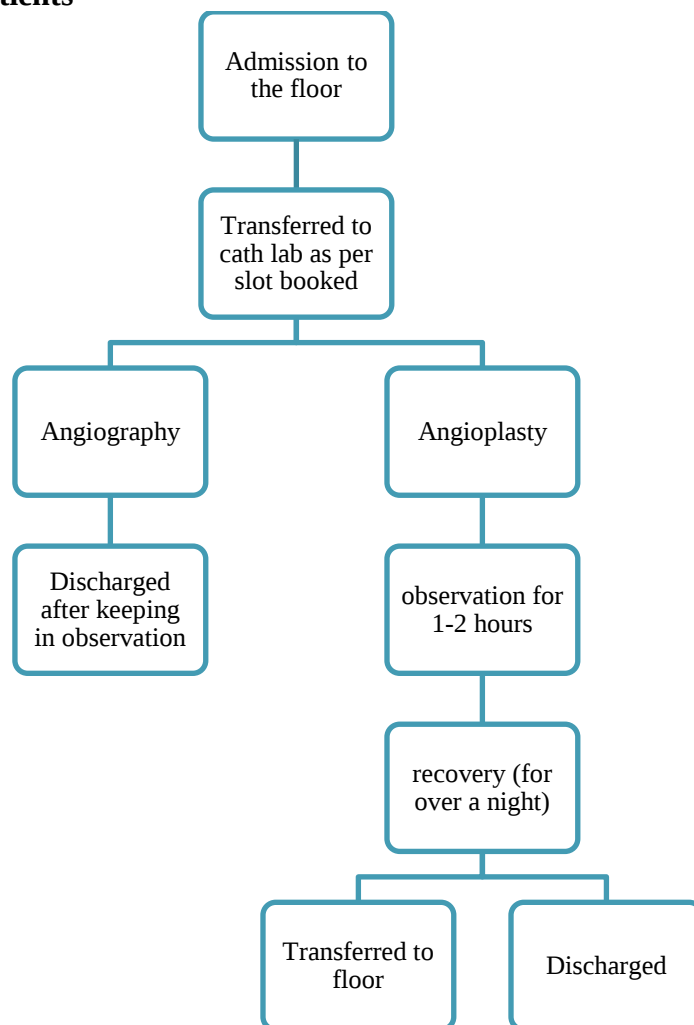
Units of cath lab:

1. Cath lab 1
2. Cath lab 2
3. Technical room
4. Observation area
5. Technician room
6. Store room and utility room
7. Observation area-3 Beds
8. Instrument washroom

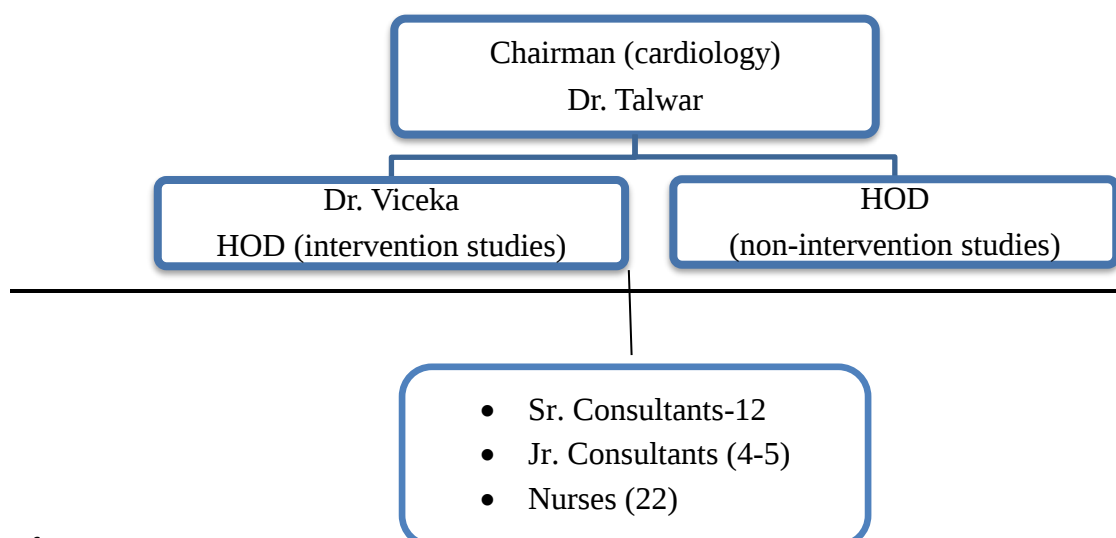
Location: Cath lab is located on the first floor with the vicinity areas as

- Emergency department
- Operation theatre
- Cath recovery-12 Beds
- Coronary care
- CTVS
- SICU
- PICU
- MICU

Process Flow of Patients



Staff



DEPARTMENT OF LAB SERVICES

INTRODUCTION-

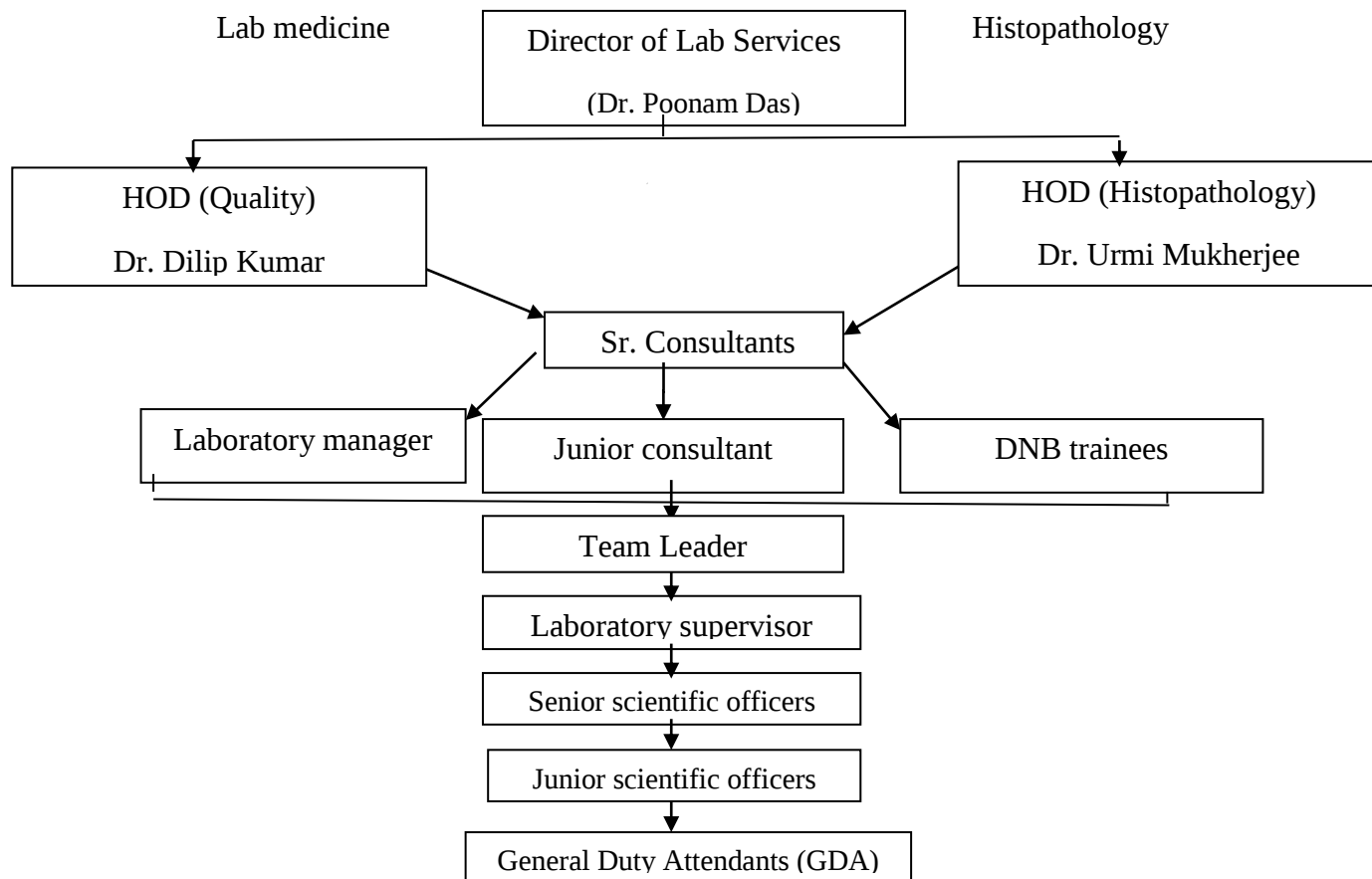
An ISO: 15189 certified and NABL accredited lab, it is open 24 hrs a day. It's a high-tech lab with fully automated instrument which are directly interfaced with ***hospital information system*** and ***laboratory information system***. Facility of stat tests (emergency) and sample collection from home is also available.

LABORATORY COMPRISES OF THE FOLLOWING DEPARTMENTS-

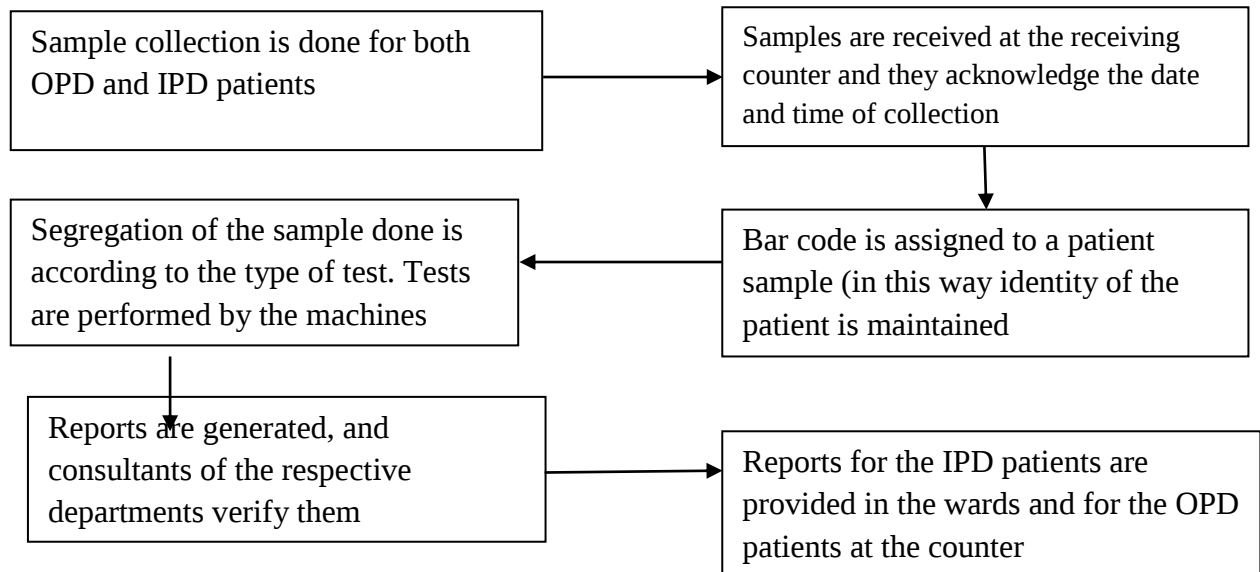
- Biochemistry
- Hematology
- Immunoassay
- Histopathology
- Clinical pathology
- Serology
- Microbiology
- Cytology

HIERARCHY-

The Department of Lab Is Broadly Divided In Two Departments



PROCESS FLOW-



LABORATORY INFORMATION SYSTEM- It is connected with hospital information system

- Sample received- red color
- Samples acknowledged- yellow color
- Test done- blue color
- Result verified- green color
- Billing done- pink color
- **Indemnity Insurance-** Insurance policy to protect employees when they are found to be at fault for a specific event such as misjudgment.

RADIOLOGY DEPARTMENT: -

- Situated at the ground floor of the west wing of the hospital.
- The Department is headed by Dr. Sonia Dhal
- The total staffs working in the Radiology Department are 60.

Procedures done in the department: -

(1) Routine X-Ray studies

- (a) Plain - e.g. chest, spine, etc
- (b) Routine fluoroscopic procedures e.g. Barium studies

(2) Routine ultrasound studies

- (a) Ultrasonography - e.g. Abdomen, Pelvis
- (b) Doppler studies peripheral (B/W & color) e.g. 2 D echo, vascular studies, etc

3) Mammography

4) Dexa scan (Bone Densometry)

5) Special imaging techniques

- (a) CT Scan (Computerized Axial Tomography)
- (b) MRI (Magnetic Resonance Imaging) - 1.5 Tesla, 3 Tesla

Divided into two parts: -

- 1) For Ultrasonography, mammography, Dexa scan
- 2) For CT scan, MRI, X-ray, fluoroscopy

Consist of: -

- 1) Reception: -Counter for appointment and billing
- 2) Waiting room with general facilities like toilets, drinking water, air conditioning
- 3) Diagnostic room
- 4) Counseling room
- 5) Changing room
- 6) Film processing room
- 7) Radiologist office
- 8) Report collection room

There are two MRI and one CT scan machine in the department.

Timings for OPD patients: 8am to 8pm

In between this IPD and Emergency patients are also taken.

Main OPD hours: - 8am to 6pm and after 8pm only IPD and Emergency patients are taken

Report collection: - If the scan is done before 12pm, reports are ready by the evening and can be collected in the same evening. And if done after 12pm, report will be delivered next day.

Patient who comes in the radiology department either walks in or takes the appointment.

Appointment patients are given preference whereas walk in patients have to wait. Emergency, doctor's referred patients or ICU patients scan is done as soon as possible.

Process flow in radiology department (OPD)

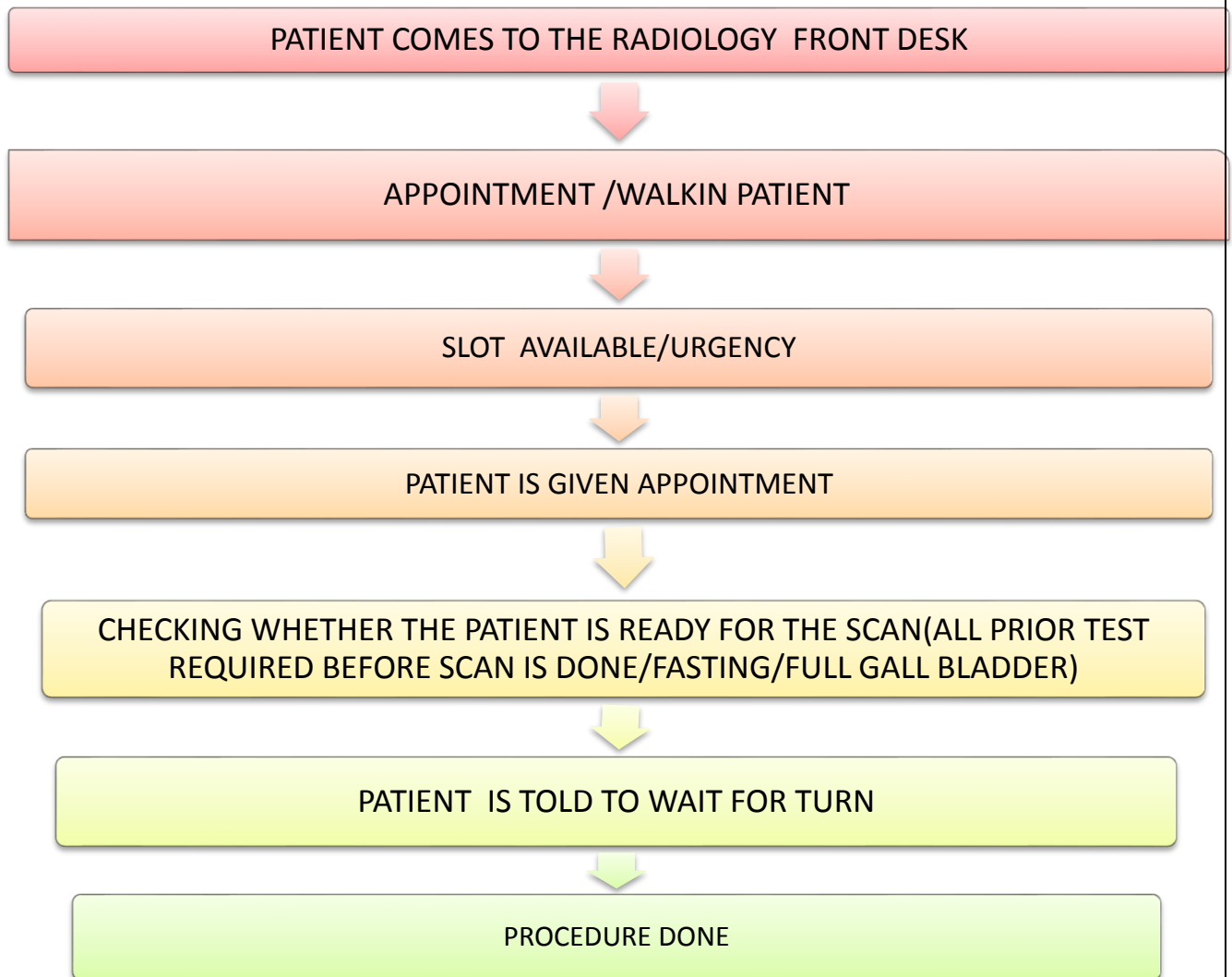


Figure: -Process flow in radiology department for outpatients.

Firstly, the patient comes to the radiology front desk after been prescribed by doctor for the scan; patient is either taken prior appointment or walk in patient. The availability of the slot required is then checked for the walk-in patient by the front desk. Once the slot is checked, the requirements for the scan i.e. condition of the patient required to undergo the scan is checked (E.g. Proper Creatinin level for renal patients). After that the patient is given the appointment and told to wait for his turn. Finally, the procedure is performed.

Warning sign with Red light is on when the procedure is going on in the room.

- Emergency patients especially with a critical diagnosis – highlighted in the register and the consultant is immediately informed about the findings.
- Procedures wherein contrast is to be given, for example MRI, consent of the patient is taken prior to the procedure.

BLOOD BANK

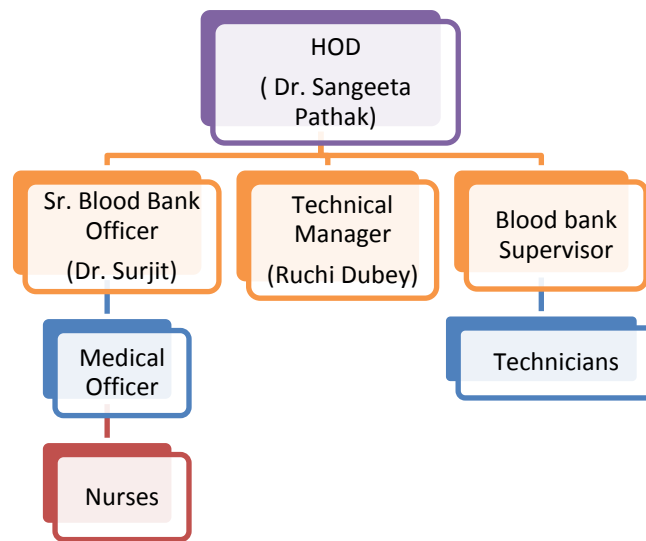
Max super specialty hospital has its own blood bank. All blood groups are available. It is mandatory for the in-patient attendants to donate blood or do replacement of the blood.

Blood bank consists of:

1. Sample collection area / reception area: In reception area a form is given to the attendant of the patient regarding their details before he/ she donates the blood.
2. Aphaeresis area: Blood has several components including red blood cells, platelets and Plasma. Donor aphaeresis is a special type of blood donation in which a specific component- platelet is withdrawn from donor.
3. Component room: In component room the whole blood is separated into packed cells (2-6° C), FFP (-80°C) and platelets (22°C). Packed RBC can be stored for 42 days, Platelets for 5 days and FFP for 1 year.
4. TTI room: It is to diagnose transfusion transmitted infections. If donor is detected positive for TTI status it means donor have the potential to transmit the infection to their partner and children.
5. Issue room: This room is to issue the screened blood bags.
6. Quarantine Area: The untested units are stored in this area for 1 day after component separation. This area is also for nucleic acid testing (NAT)
7. Serology Room- Patient and donor's blood processing is done in this area.
8. Refreshment Area- The donors are provided refreshment after donating blood in this area.

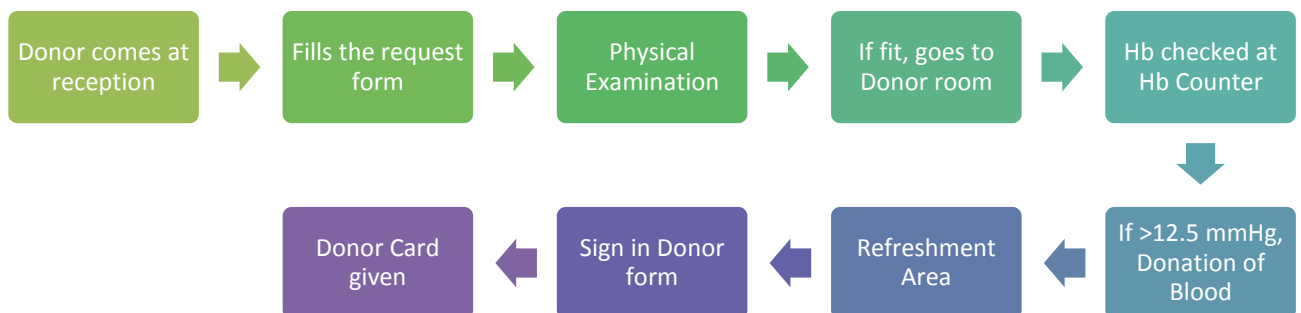
Staff of blood bank consists of 1 HOD, 2 blood bank officers, 1 technician supervisor, 16 technicians, 2 staff nurse, 2 computer executives, 4 GDA.

Hierarchy



- The blood donation timings are from 9am to 5pm. Blood can be donated after every 3 months.

Process Flow



- Voluntary Donor Card is valid for 1 year and Replacement Card is valid for 3 months.
- Record Maintenance – Both manually and digital (Acuren Software)
- Post-Donation Testing is done for and informed to all the donors.
- Report is given only to the patient, if patient cannot come, then the reports are emailed to them.

CENTRAL STERILIZATION SUPPLY DEPARTMENT

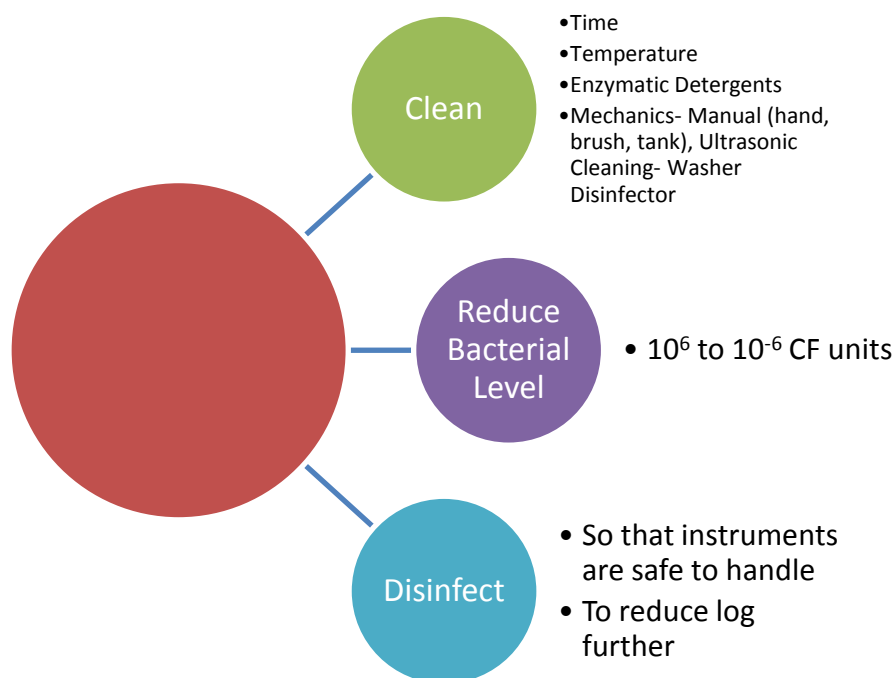
INTRODUCTION-

CSSD is the heart of the hospital infection control and the most important unit of the clinical support services. CSSD role lies in receiving, cleaning, packing, disinfecting, sterilizing, storing and disinfecting instruments as per well-delineated protocols and standardized procedures.

CSSD department in Max Healthcare, Saket is a centralized department and the location of the department is in the basement.

The main aim of the CSSD department is to reduce the level of micro-organisms from 10^6 to 10^{-6} CF Units.

Objective of CSSD:

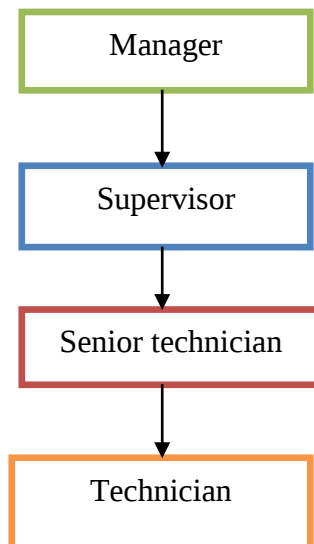


Types of Sterilization-

- Steam- uses saturated steam (heat + water) at 138°C for 4minutes
- Ethylene Oxide
- Plasma

Size of CSSD- should be 10 sq feet per bed, for a 500-bedded hospital.

HIERARCHY OF THE DEPARTMENT-

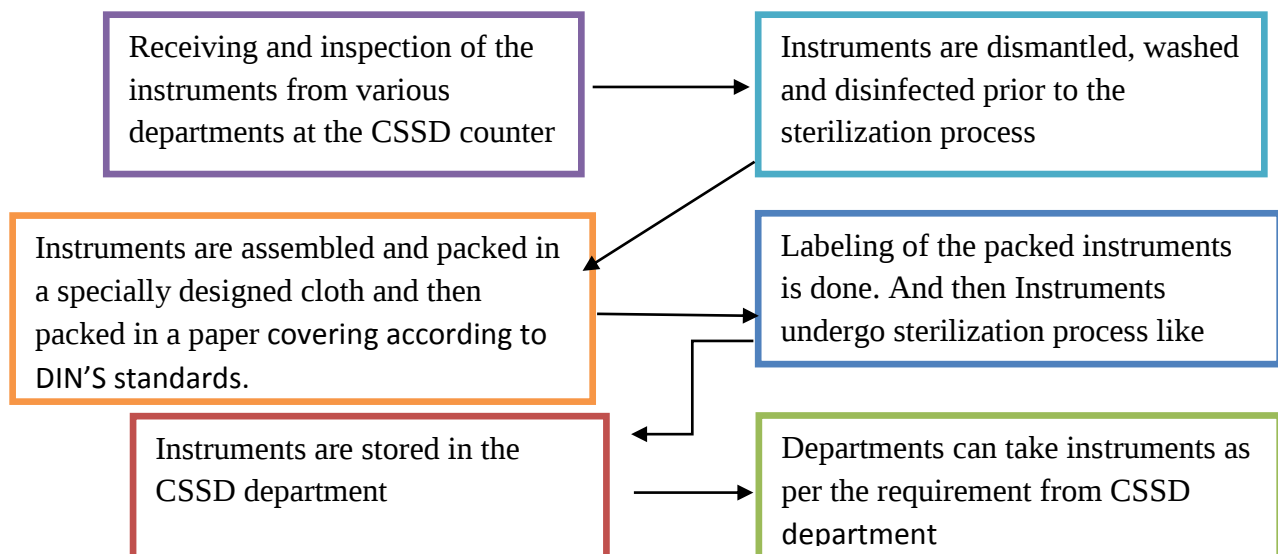


The Department is headed by Dr. Sanjeev Bhatia.

ZONES PRESENT (with color coding)-

- Decontamination Area
 - Clean Zone
 - Sterile Zone- Temperature- 18° to 20° C
- 18° to 22° C

PROCESS FLOW-



- At the time of receiving the instrument at the CSSD department, the instruments are counted, checked for any damage, segregated according to the method of sterilization required for the instrument.
- Instruments used for the washing of the instruments are fully automated and according to the European standards.
- For packing of the instruments SMS (Stem-Mid-Stem bond) paper and cloths are used which are specifically designed for the purpose (they have a zig -zag pattern).
- Once sterilized and packed instrument can be used within 6 months.

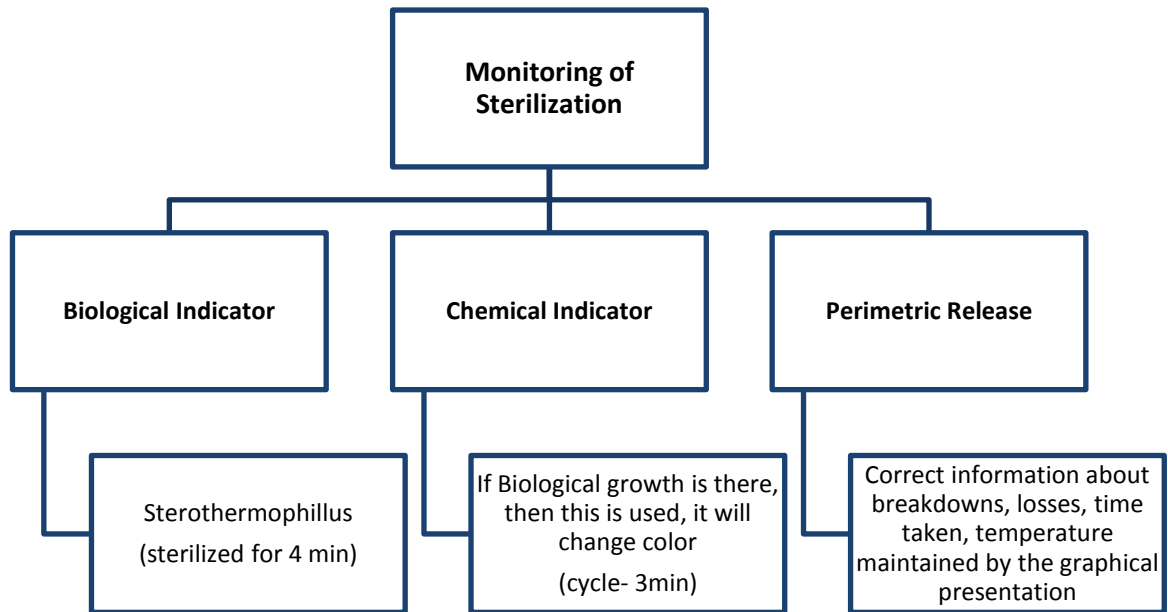
EQUIPMENT LIST-

- Washer
- Autoclave
- Plasma sterilizer
- ETO sterilizers
- Dryers
- Air-guns
- Water-guns
- Ultrasonic cleaners

QUALITY INDICATORS-

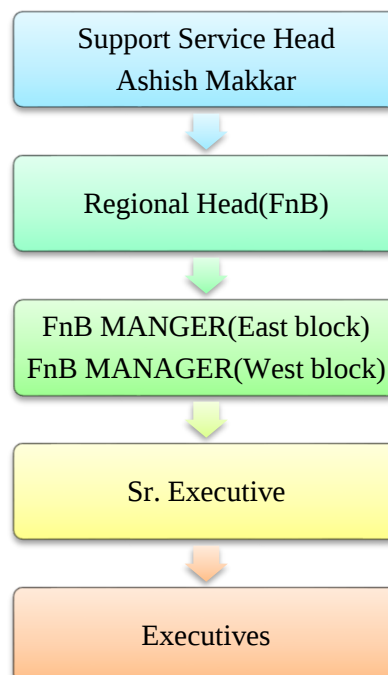
Various quality indicators used in CSSD are-

- **Batch monitoring strip-** a yellow colored strip which is attached to every lot which on exposure to right temperature and pressure turns black



FOOD & BEVERAGES

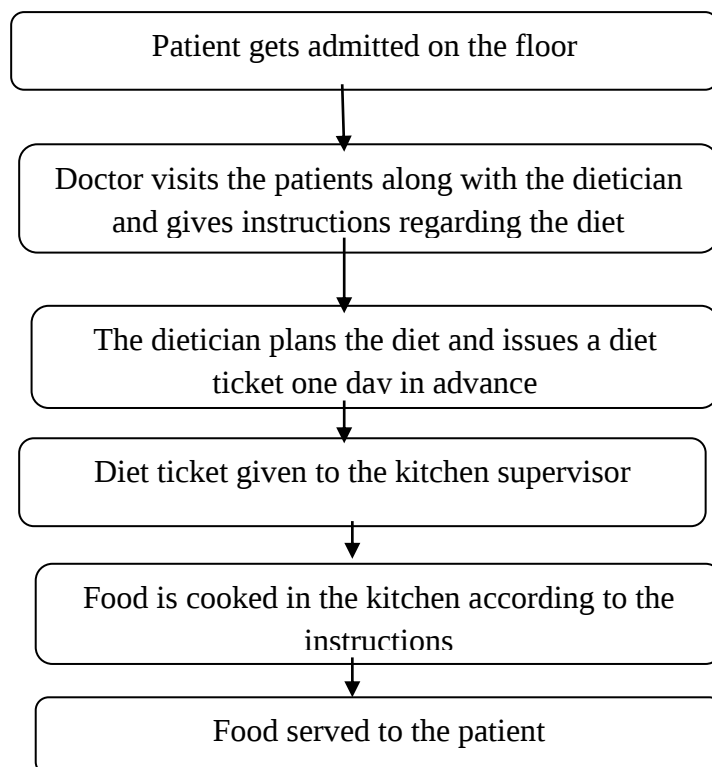
- Food & Beverage department is responsible for the supply of food to the in-patients and sometimes their attendants (if required) and also for arranging food during various meetings and conferences in the hospital.
- It is approved by NABH and works on ISO 9000: 2008.
- The department has been outsourced to Sodexo Pvt., ltd., however, the management and supervisory staff is in-house.
- Staff- 230 (outsourced); 11 (Max in house)
- Hierarchy



Time table for the diet of the patient: (7 meals/day)

7-8AM	Breakfast
10:30-11:30AM	Morning Tea Soup
1-2PM	Lunch
4-5PM	Evening tea
6-7PM	Soup
8-9PM	Dinner

- If the patient is on Liquid diet, it is provided every 2 hours, 10 liq. Diet/day.
- Dinner of the same day, breakfast and lunch of the next day are decided prior in the evening and diet tickets are issued by the dietician and given to the chef.
- Apart from these if patients want to have something extra, those can be provided to the patient after consulting dietician and calling on 4030 from their room, no extra charges.
- Different menus offered are:
 - Continental
 - Afghani – for middle east patients
 - No onion and garlic – for middle east patients
 - Indian
- **Process flow** of the department

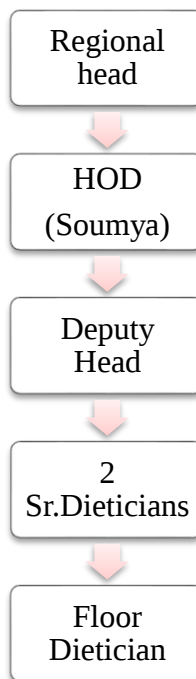


Quality Indicators for F n B department: Food Receiving, Food storage, Staffing

- The raw material is received everyday between 6:30-7am, washed and stored. The cutting is done on color coded chopping boards separately for Veg., Non-Veg. and Sea food.
- The food sample is tested for any infection every 15 days.

DIETETICS

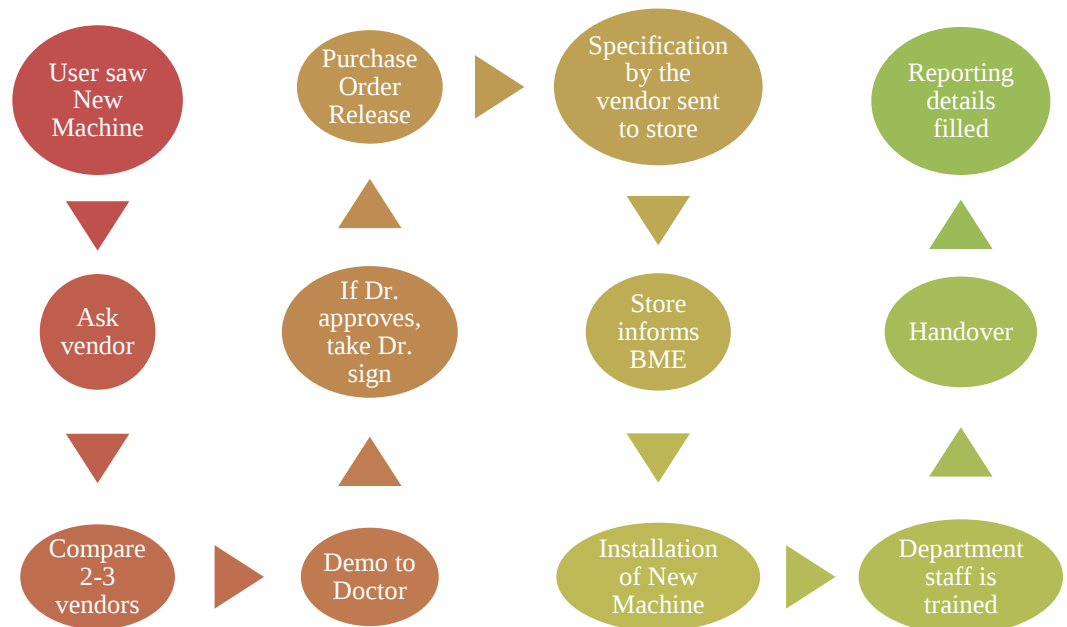
- The department plans diet for all IPD patients in accordance with the primary consultant's opinion on the same.
- Staff- 13 in total.
- Hierarchy



- Dietician: patient – 1:50
- Assessment of each patient to be done within 24 hours of admission and thereafter every 8th day after initial assessment.
- Scoring – Normal, Soft, Liquid Diet
- For enteral nutrition, all commercial supplements for each disease are available.
- Diet Note is put on CPRS on daily basis.

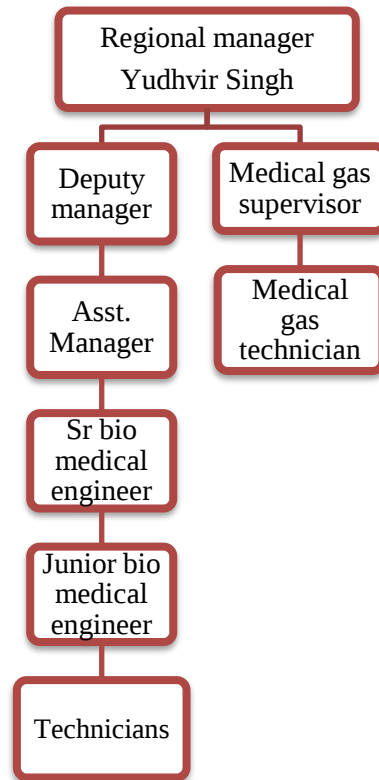
BIOMEDICAL ENGINEERING

- This department deals with purchase, installation and commissioning, training on operating, handling and maintenance of medical equipment in all departments of the hospital.
- Looks after running equipment and new equipment.
- For Running equipment
 - Preventive maintenance (PM) is done – to prevent breakdown, maintenance is done.
 - Calibration is done – i.e. to check how accurate an equipment is functioning
There are white stickers on every machine that tells when the last PM and Calibration was done.
 - Breakdown call is checked for
 - Depreciation is measured
- For new equipment-
 - Installation and commissioning is done.



- Criteria for Up gradation-
 - i. The company supplying the equipment has been obsolete and BME recommends new machine
 - ii. The staff suggests a new machine, BME checks the budget of the department, if budget allows, and then procedure for procurement is done.
- AMC and CMC records are maintained.
- CAPEX (Capital Expenditure) and OPEX (Operating Expenditure) registers are maintained.
- Equipment Incident report is made in case of any physical damage – it is filled mentioning how the damage did happened. Thereafter replacement or repair whatever is required is done.

- Organizational chart



- Gas Manifold Department- Gas manifolds are also handled by this department and Max is awarded green OT certificate because of the efficient dispersion of OT gases. It maintains the supply of Oxygen, Air, Vacuum, Suction (-ve pressure).
- Compressors- in basement, for +ve and -ve pressure.

PHARMACY

Max pharmacy is self-owned with Central Pharmacy situated at corporate office, Okhla. There are 2 In-patient pharmacy stores, 2 Out-patient stores and 1 EWS pharmacy in the hospital.

PURCHASE

- Auto purchase requisition is given to central purchasing team which is forwarded to vendor (outsourced).
- For purchasing the items ABC method is followed.

A (mostly used drugs), B (Less used), C (Least Used)

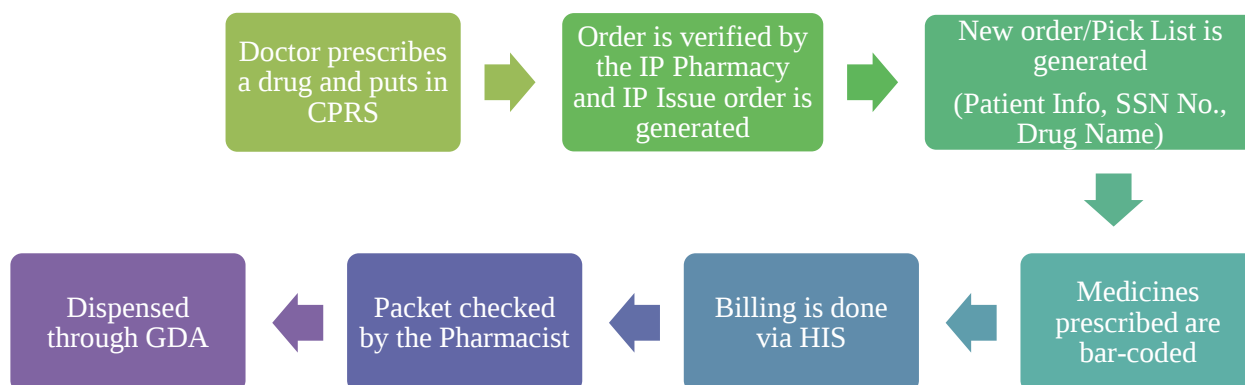
- Weekly requisition is done, and vendors take minimum 3 days for delivery of drugs to hospital.

STORING OF DRUGS

Medicines are arranged according to VISTA (e-care) in Client patient record system via generic name in alphabetic order in racks, shelves, cupboards and drawers. Oral, parenteral and topical items are stored separately. Near expiry (expiry within 3 months) is stored in separate designated area to expedite the consumptions.

INDENT AND DISPENSE OF MEDICATIONS.

In patient pharmacy-



The Stat orders required immediately are dispensed within 30 minutes. The Now order is dispensed within 1 hour and routine order (White color) is delivered by 1 round per day.

NARCOTICS DRUGS

They are kept in double lock and key system with a label “High Alert Medicines”. Documentation of narcotic drugs is appropriately maintained.

Narcotics drugs under statutory regulation being used in max hospitals includes: injection and transdermal patch of Fentanyl and injection and tab. of Morphine.

LOOK ALIKE AND SOUND ALIKE DRUGS

Look alike and sound alike medications have high medication error due to similarities in nomenclature and packaging.

In the main pharmacy stores, (SALA Medications) are stored separately in 2 adjacent racks with blue colored sound alike and pink colored look alike medications warning stickers to avoid confusion while dispensing.

Medication Recall: If a drug is found to be defective, it is reported to the Okhla office where the records for that particular series of drugs dispensed is checked and verified for medication recall.

Licenses acquired by Max hospital pharmacy -

- 1) Pharmacist License
- 2) Narcotics License

INVENTORY MANAGEMENT PARAMETERS

I. ABC Class

A Items: 7 days

B Items: 10 days

C Items: 15 days

II. EOQ - (economic order quantity)

III. LEAD TIME – Time from ordering to delivery of drugs

IV. VED – Vital Essential Desirable (According To move of drugs)

Staff- In-patient pharmacy- 9 (Pharmacist) + 1 (Executive) + 8 GDA, 5 Data Entry Operator

Out-patient pharmacy-

CALL CENTRE (in-house)

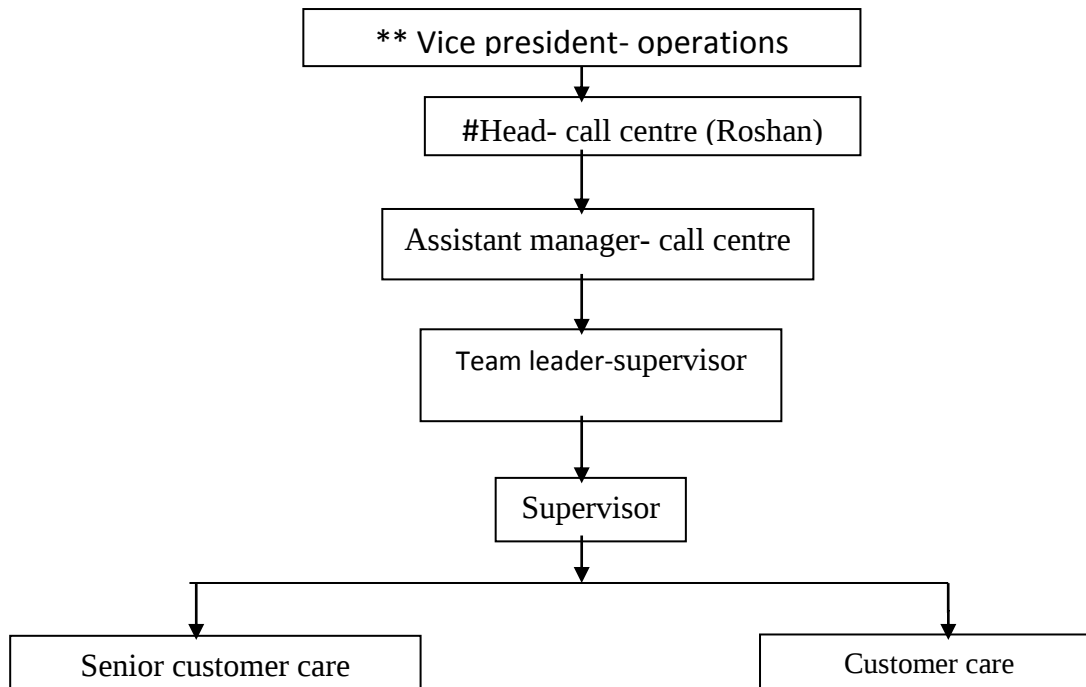
Call centre of Max hospital, Saket operates at 24*7. It is centralized patient contact centre for Saket. It can be used as an information centre for all customers.

Call centre deals with:

- Doctor's appointment
- Health check ups
- Radiology and diagnostic appointments
- Patient's information
- Doctor's information
- Employee's information
- Specialty information
- Other department information

- In-patient requests, ext. no. 4000
- It handles internal emergency e.g. at ext. no. “11” -Blue code, RRT, Code Yellow, Code Pink, at ext. no. “14”, Code Red, Code Black
Main board line number is: 26525050
- Ambulance Services

Organization chart:



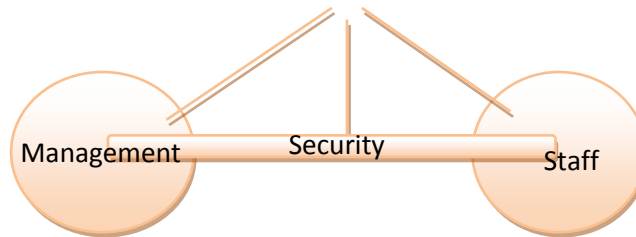
Ticket Process Flow



- If complaint is resolved, it closes automatically in 4 hours.
- Escalation Matrix- If any request is not fulfilled in appropriate time, this matrix enables a message on duty mobile of the department supervisor and so on, i.e. it escalates the unresolved issue to the higher authority concerned.
- All the HODs are messaged daily about the calls and the Turn Around Time (TAT) of the calls.



SECURITY DEPARTMENT



The security department is an eye and ear of every organization acting as a liaison between the management and staff. The control room of Security Department is located on B1 (basement) of East Wing, Max Saket.

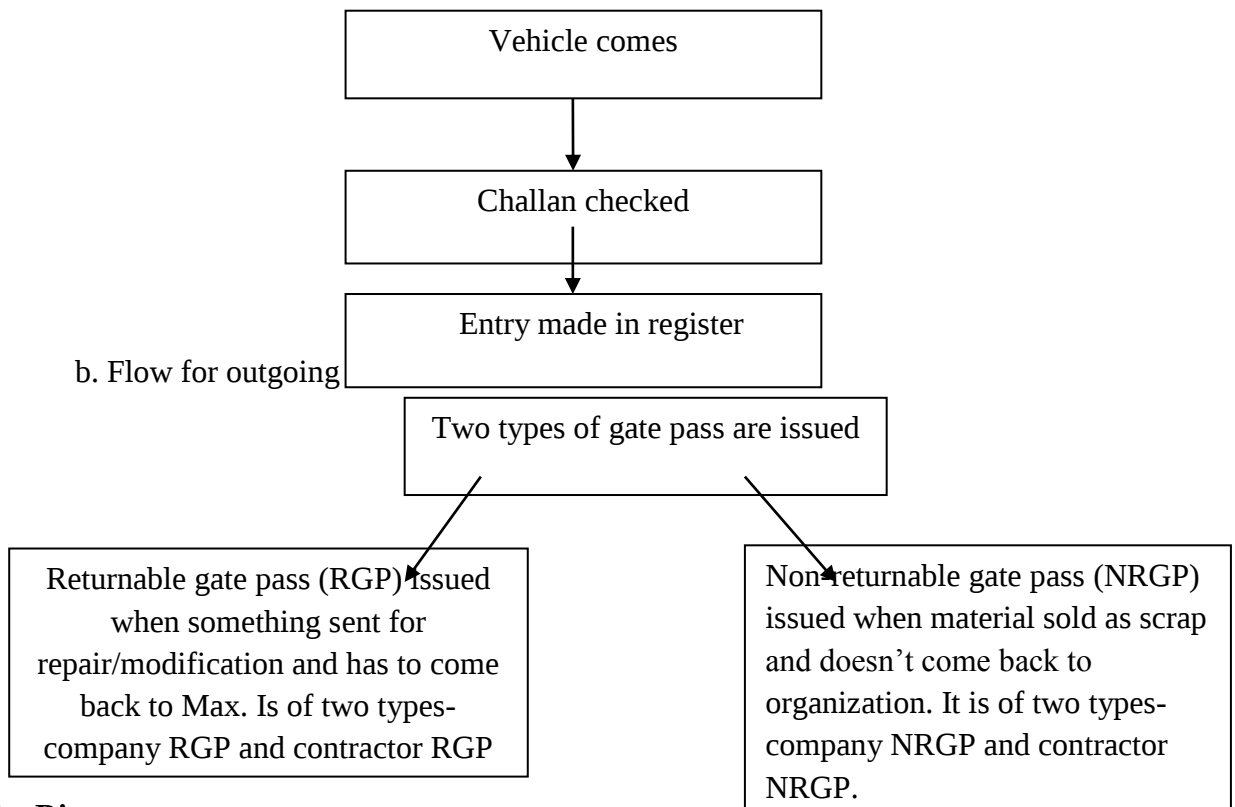
Functions of Security Department: -

1. Security management: -

- Selection of people (guards and supervisors)
 - Deploying of security staff to different floors and departments
 - Checking of people entering hospital- Frisking
 - Turnout and grooming of security staff
 - Death handling
 - Training of security staff
 - MLC handling- filling MLC intimation and re-intimation (if any) form
Re-intimation is made when a MLC patient gets admitted again within 10 days of the discharge.
 - Dispute handling
- There are 192 CCTV Cameras recording every action in the hospital premises.
- Two Teams- IRT (Initial Response Team) and ERT (Emergency Response Team)
- ERCC system- Emergency Response Coordination and Communication system sends a voice message (1000 messages on 1 go) on the duty mobile number in an emergency.
- Security divides the RRT in 4 teams to act in an emergency
1. Action taking
 2. Rescue Team
 3. Salvage Team- to remove important documents from that area.
 4. Cordon off Team- to not to allow anybody inside the threat zone.
- If emergency occurs during an occupied OT, Security has put up a provision for OT to run for 45min on UPS, so basic stabilization of the patient can be done.
- There is a secret entry for the VIP security in the hospital.

2. Material management:-It includes management of both incoming and outgoing materials.

a. Flow for incoming materials: -The incoming materials are received either from a company or a contractor to Max. The process flow is as under: -



3. Disaster management: -

There are six emergency codes: -

1. Red- **Fire**
2. Black- **Bomb threat**
3. Blue- **Cardiac arrest**
4. Yellow- **External disaster** like earthquake
5. Violet- **Violent patient**
6. Pink- **Missing patient**

The SOP's and disaster management plans are prepared by the Security Department. Fire management system includes smoke detectors, sprinklers fitted on ceiling and fire shafts in all corridors.

Walkie talkies are an important source of communication.

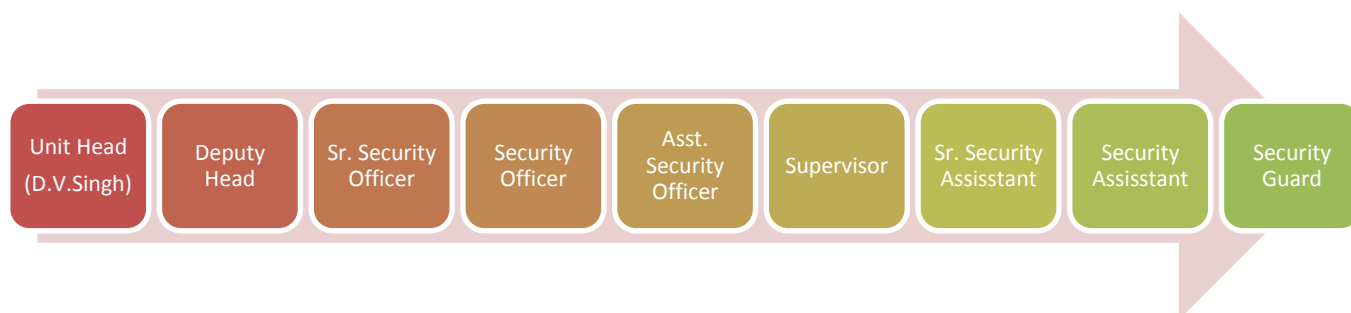
Other disasters include floods, water logging, terrorist attacks.

4. Valet management: -

- Helps internal and external customer to optimally utilize the parking space.
- Within a time frame of maximum 7 minutes, vehicle is handed over to customer when asked for in porch.

Staffing

The Security department in Max Healthcare, Saket consists of 26 on- roll staff and 144 outsourced staff.



HUMAN RESOURCE MANAGEMENT

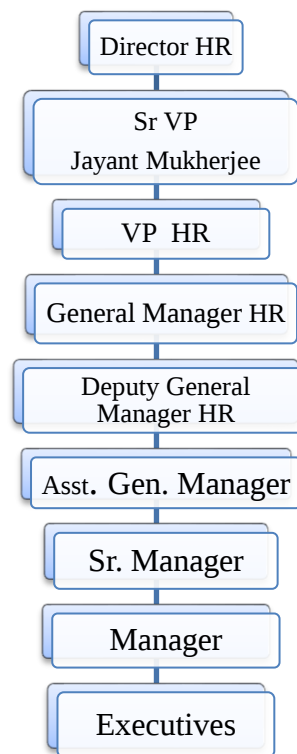
Human resource management (HRM or simply HR) is a function in designed to maximize employee performance in service of their employer's strategic objectives. HR is primarily concerned with how people are managed within organizations, focusing on policies and systems.

Core Values of HR: Excellence, Credibility and Seva bhavna

Following are the policies undertaken by the Human Resource Management Department: -

- Human Resource Planning Policy.
- Job Profile Format.
- Recruitment policy.
- Training and development policy.
- Induction and Orientation policy.
- Performance appraisal Policy.
- Complaint & Grievances Redressal Policy.
- Disciplinary Policy.
- Medical Discount Policy.
- Annual Medical Check-up Policy.
- Clinical credentialing and privileging Policy.
- Nursing Credentialing and Privileging Policy.

HR Hierarchy



Staff- Manpower of 15 staff is handling the HR system of Max Healthcare, Saket



INTERNATIONAL PATIENT SERVICES (IPS) DEPARTMENT

It takes a lot to be a world-class health care services provider and as per patient registration data, over 11 Lakh overseas patients have been helped to get back to their normal lifestyle. This department, situated in East wing, is exclusively dedicated for the services of international patients.

Contact Procedure:

- Patient sends a query and/or reports
- IPS Team consults the relevant consultant and provides diagnosis, proposed treatment and estimate
- If required, a telephonic meeting may also be arranged
- Patient confirms if he wants to have treatment at Max Healthcare to provide Visa Facilitation Letter
- Patient confirms the arrival date and time
- IPS Team, in the meantime, books room, OT etc. for the patient
- Patient is received at the Airport and then, brought to the Hospital/Guest House/Hotel

Also, another contact procedure is as follows:

- Max hospital conducts free outreach OPDs in other countries, at least 1-2 per year
- Max hospital also has tie ups with different hospitals in these countries

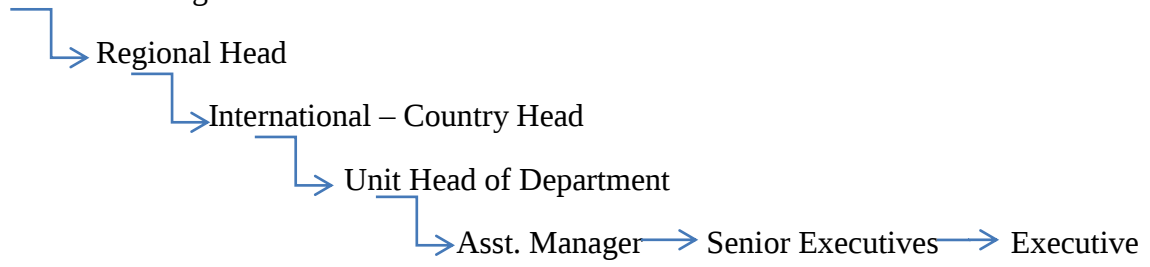
International patients avail treatment in India mainly because these facilities or treatments are not available in their respective countries, and are available at a much cheaper price in India than other countries such as US, UK or European countries. The countries from where patients come to seek treatment most commonly are Afghanistan, Iraq, African countries (Nigeria, Congo), Oman, Uzbekistan, Nepal, and Bangladesh.

The hospital provides:

- Various Regional Translators such as Arabic, Persian, Iraqi, Bangladeshi and Russian (In house interpreter).
- Assistance in ground transportation such as finding a shuttle, hiring a car or choosing any other mode of transportation within the city.
- Relationship Managers, who closely work with over 50 Diplomatic Missions and numerous Expat bodies to ensure that international patients have a comfortable and memorable stay in India.

Staffing:

Director Marketing



CONCLUSIVE LEARNING

1. There is an information board on every nursing station which includes all the details of on-duty staff, is updated on daily basis.
2. Some of the Nursing station information board has Positive Thoughts (e.g. MAMBS recovery area, 2nd floor, East wing) and some have Good morning and smiling face smiley (e.g. 4th Oncology department)
3. The Emergency area is not designed within easiest reach, as it is not easily visible from the main entrance of the hospital.
4. The board depicting Emergency department does not has a good contrast background. “Emergency” is written with very light color on a bright background, difficult to read.
5. There are no directions in the hospital to reach Emergency department.
6. The Doctors feel very difficult to put notes in CPRS immediately, as they cannot find any system free. Some doctors also suggested of keeping Transcriptors for the same.

Project -II

A STUDY ON MEDICAL RECORD COMPLIANCE IN

INPATIENT FILES

Declaration

Acknowledgment

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1. ABBREVIATIONS -
2. INTRODUCTION -
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5. OBJECTIVES FOR DOING STUDY-
6. RESEARCH METHODOLOGY-
7. DATA ANALYSIS & INTERPRETATION-
8. OBSERVATION & FINDINGS-
9. RECOMMENDATION-
10. CONCLUSION-
11. ANNEXURE 1-
12. REFERENCES-

A study on Medical Documentation Compliance to Inpatient Files

Introduction

Medical Record

The terms medical record, health record, and medical chart are used interchangeably to describe the systematic documentation of a single patient's medical history and care across time within one particular health care provider's jurisdiction. The medical record includes a variety of types of "notes" entered over time by health care professionals, recording observations and administration of drugs and therapies, orders for the administration of drugs and therapies, test results, x-rays, reports, etc. The maintenance of complete and accurate medical records is a requirement of health care providers and is generally enforced as a licensing or certification prerequisite.

Objectives

- 1) To determine guidelines for the contents, maintenance, and confidentiality of patient Medical Records.
- 2) To define the requirements for the documentation and management of patient records.
- 3) To ensure that high standards for documentation and management of patient records are maintained consistent with common law, legislative, ethical and current best practice requirements.

RATIONALE

The purpose of complete and accurate patient record documentation is to foster quality and continuity of care. It creates a means of communication between providers and members about health status, preventive health services, treatment, planning, and delivery of care.

Literature Review

Medical Record:

The terms medical record, health record, and medical chart are used somewhat interchangeably to describe the systematic documentation of a single patient's medical history and care across time within one particular health care provider's jurisdiction. The medical record includes a variety of types of "notes" entered over time by health care professionals, recording observations and administration of drugs and therapies, orders for the administration of drugs and therapies, test results, x-rays, reports, etc. The maintenance of complete and accurate medical records is a requirement of health care providers and is generally enforced as a licensing or certification prerequisite.

The purpose of complete and accurate patient record documentation is to foster quality and continuity of care. It creates a means of communication between providers and between providers and members about health status, preventive health services, treatment, planning, and delivery of care.

MEDICAL RECORD STANDARDS:

- Keep a unique, individual record for each patient
- Establish an organized record-keeping system to ensure that medical records are easily retrievable for review and available for use when needed, including at each patient visit
- Store and maintain medical records in a centralized and secured location accessible only to authorized personnel and provide equivalent security for electronic medical records
- Maintain and organize documents within medical records in a specified order
- The physician must complete all required documentation in the medical record before it may be permanently filed, or be considered complete.
- Ensure that documents are fastened securely within a paper medical record
- Provide periodic training in confidentiality and security for patient information.

Manual Records

- Face Sheet
- Admission request
- Discharge slip
- Discharge summary (electronic/hard copy)
- Death certificate
- LAMA Form
- Zero-line ECG
- Informed consent/High risk consent form
- Anaesthesia record
- Pre-operative check list/orders(Nursing)
- Surgical safety checklist
- Physician order sheet (orders/inpatient medicine)
- Blood Sugar report
- Intake-output chart
- Critical care flow sheet/ICU Chart
- Investigations(orders)/Reports
- Code Blue- Crisis not Template
- Pending report status
- Nutrition care plan
- Family meeting record
- Scanned Preoperative assessment and an external hospital document

Electronic Records

- Emergency assessment sheet
- Discharge summary
- MLC discharge summary/Death summary/LAMA summary
- IP assessment/plan of care
- Neonatal Assessment Sheet
- Doctor's progress note
- Transfer Order
- Operation/Procedure notes from – ICU, OT, CATH Lab, Recovery room, Endoscopy, Bronchoscopy, Sleepstudy, DSA
- Post-operative orders
- Doctor's note on blood transfusion
- Nurse's admission assessment
- Nursing progress note
- Clinical chart(Vitals)
- Vital signature/IO chart
- Dietetics assessment note and Daily dietetics note
- Rehabilitation therapy – as and when applicable
- Psychologist Activity Sheet
- Monitoring of patient undergoing Blood/Component transfusion- as and when

Authorized personnel to make entries in patient clinical record are:

- Doctors
- Nurses
- Physiotherapist
- Dietician
- Audiometrician
- Perfusionist
- Counsellors
- Ward Secretaries
- Discharge secretaries

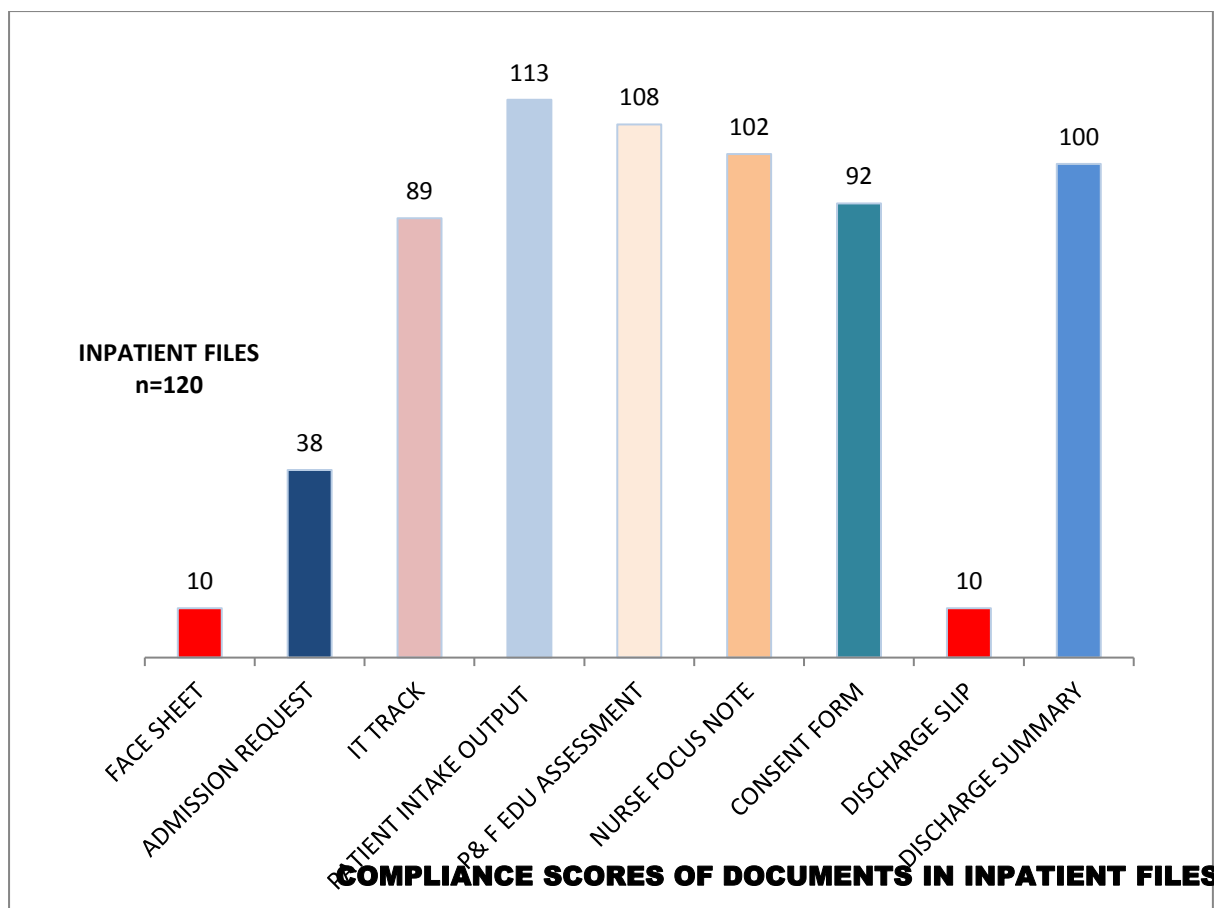
Research Methodology

- Type of study – Descriptive Cross-sectional study
- Study Area- West Block, Max Super speciality Hospital, Saket
- Duration of study- 3 weeks
- Sample size- 120
- Sampling Technique- Simple random sampling
- Sampling Tool- Checklist for inpatient file

DATA ANALYSIS AND INTERPRETATION

In the study 120 samples is taken for study. Each sample contains various component observed for their compliance. Following were the major components observed:

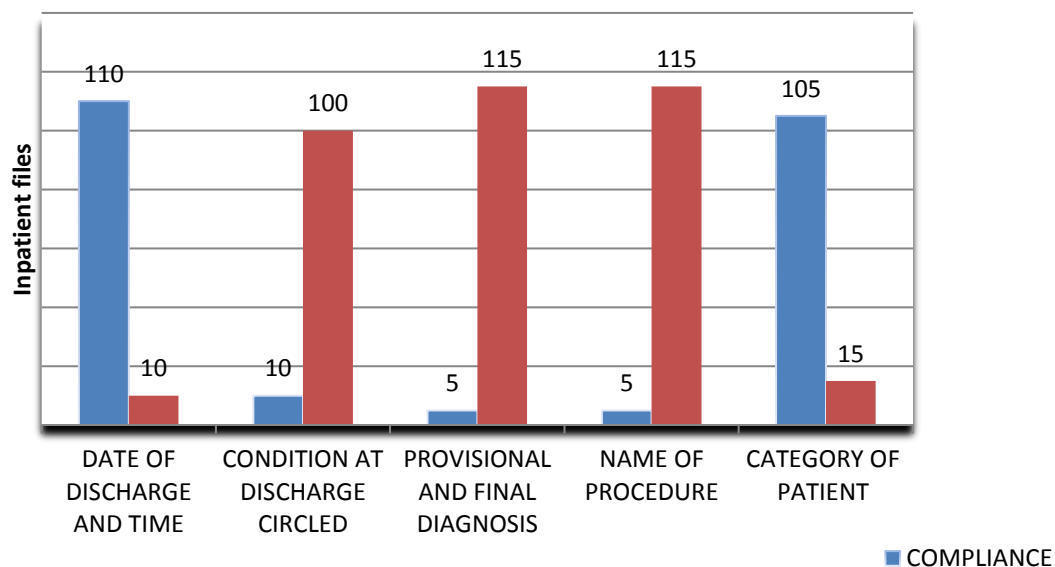
- FACE SHEET
- ADMISSION REQUEST FORM
- INVESTIGATION TRACK
- NURSING FOCUS NOTE
- PATIENT INTAKE OUTPUT CHART
- CONSENT FORMS
- PATIENT AND FAMILY EDUCATION ASSESSMENT
- DISCHARGE SLIP
- DISCHARGE SUMMARY



Inference

The above graph depicts the overall compliance scores of all the elements of inpatient file. Out of 120 files only 10 face sheet and discharge slips shows compliance, whereas 100 and 102 Nurse focus note and Discharge summary respectively shows compliance.

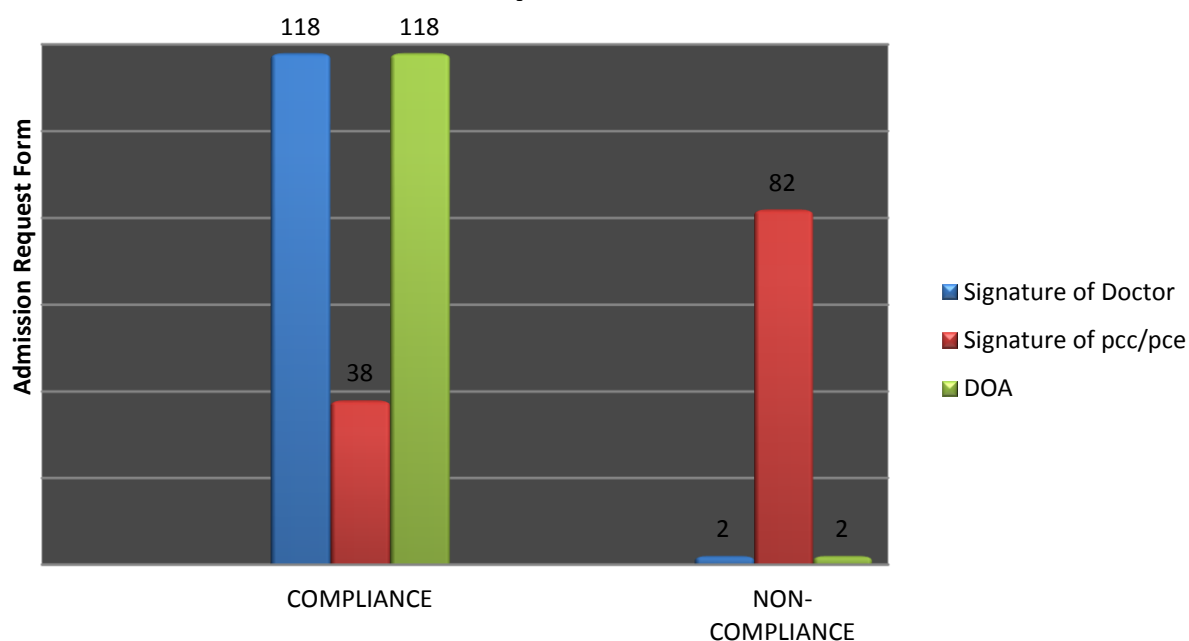
Compliance and Non Compliance in Face sheet



Inference

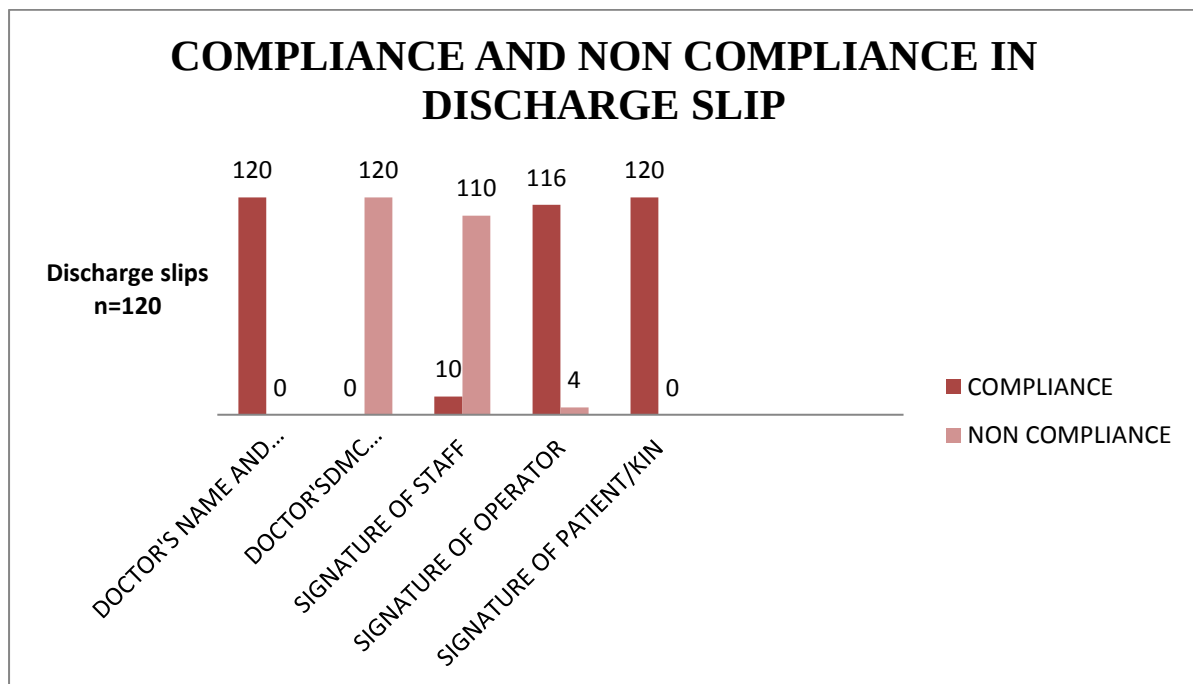
Above fig shows that major noncompliance was in filling provisional and final diagnosis and encircling the condition at discharge. Only 10 face sheets have properly filled provisional and final diagnosis and condition at discharge.

Compliance and Non Compliance in Admission Request Form



Inference

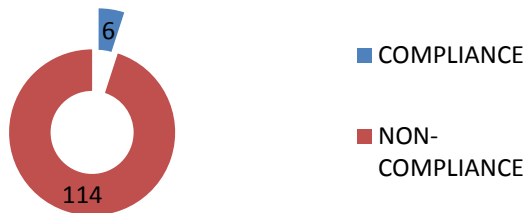
Above fig shows that only 31% of admission request form had PCC/PCE signature which is the main reason behind non-compliance of Admission Request form



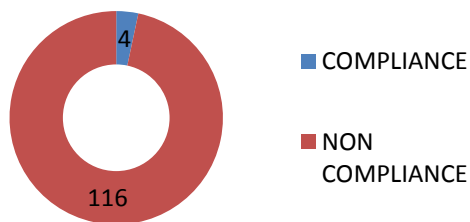
Inference

Above figure shows that Major discrepancies are Signature of Staff i.e only 8% of Staff signature are present on discharge slip and 0% of discharge slip mentions Dr's DMC No

NAME & SIGNATURE OF STAFF IN PENDING REPORT STATUS

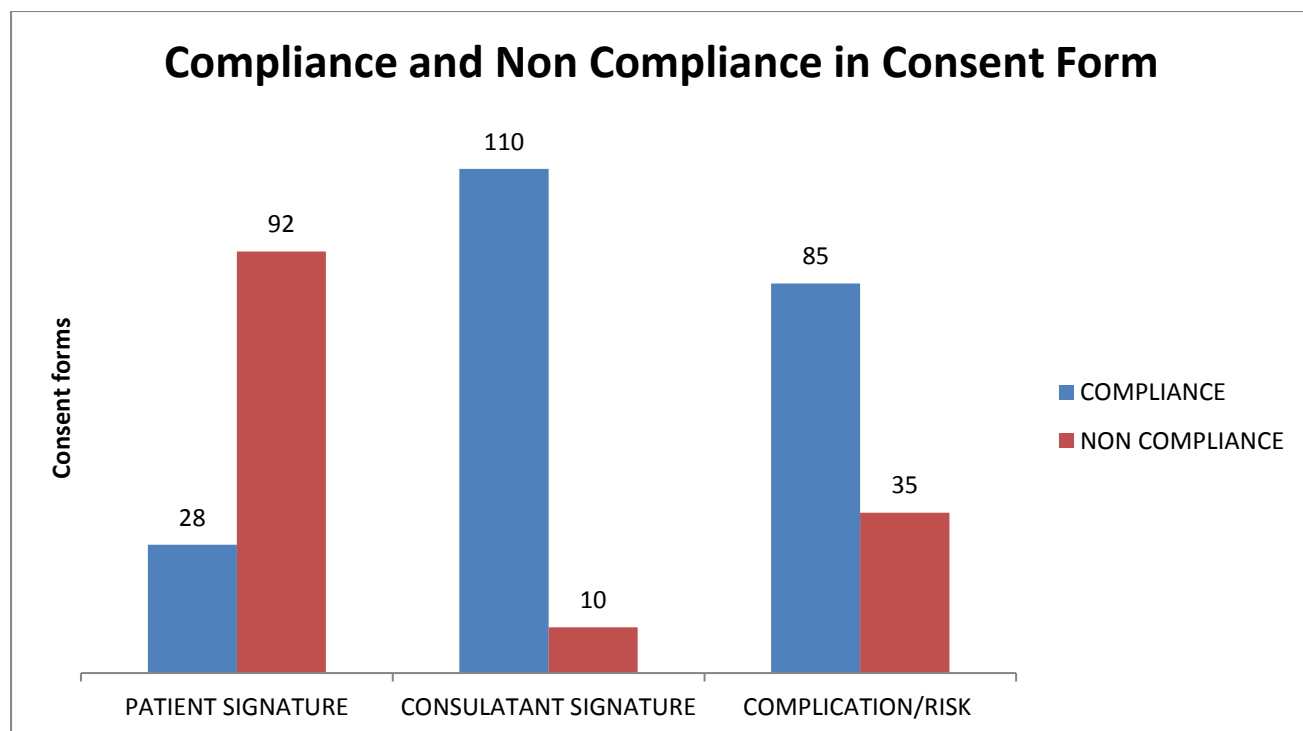


NAME & SIGNATURE OF DISCHARGE SECRETARY IN PENDING REPORT STATUS



Inference

Above fig depicts that only 3% and 5% of Signature of staff and Discharge secretary respectively are present on pending report status



Inference

Above Figure depicts that patient signature is missing in some consent form which is a discrepancy observed.

Observations and Findings

- Provisional and final diagnosis, discharge condition missing on face sheet
- Sign of patient and doctor missing on various consent forms- Hiv, Anaesthesia
- Signature of discharge secretary missing on pending status report and sometimes this report is attached empty despite of missing documents
- Consultant signature missing on discharge summary
- Investigation track sheet incomplete
- Signature of PCC missing on Admission Request
- No doctors note in CPRS
- Condition of discharge not encircled on face sheet
- Patient's attendant sign missing on patient and family education assessment and Family meeting records.

Recommendations

- Use electronic medical record for all the major discrepancies observed.
- The benefits that an EMR is expected to bring in are:
Paperless medical history , Reduced healthcare costs Empowering the stakeholders to be able to deliver right treatment at the right time , Promote the practice of evidence-based medicine , Accelerate research and building effective medical practices , Usher in ease in maintaining health information of patients , With proper backup policies increase lifespan of health records of individuals that is from conception to cremation , safety with access, audit and authorization control mechanisms , Faster search and updates.
- Authorised personnel must be instructed to fill the details properly and clearly and ensure their signatures are present in the forms.
- To manage lost reports while moving interdepartmentally one person from nursing must be given responsibility to take the reports from the GDA and maintain a record of documents carried by GDA daily. This will make the process hustle free and prevent the loss of important documents.
- Pending Report status formats must be standardized so as to bring uniformity

Conclusion

Medical records are the integral part of hospital and plays major role in its functioning. The purpose of complete and accurate patient record documentation is to foster quality and continuity of care. It creates a means of communication between providers and between providers and members about health status, preventive health services, treatment, planning, and delivery of care. Thus medical record compliance is must and should be carried out with persistence. Each document must have all the details properly filled with good visibility and clarity. It's the duty of health provider to ensure that high standards for documentation and management of patient records are maintained consistent with common law, legislative, ethical and current best practice requirements. In this study major discrepancies found were absence of signature, missing information, lost reports and wrongly mentioned data. Thus it is recommended to use electronic medical records to reduce these discrepancies and instructed authorised personnel to fill the entries properly.

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Project -III
A STUDY ON
“DEVIATION FROM STANDARD PROTOCOLS IN DIALYSIS
UNIT”

INTRODUCTION

The kidneys are responsible for filtering waste products from the blood. Dialysis is a procedure that is a substitute for many of the normal functions of the kidneys. The kidneys are two organs located on either side in the back of the abdominal cavity. Dialysis can allow individuals to live productive and useful lives, even though their kidneys no longer work adequately. Statistics from 2010 showed approximately 414,000 patients were receiving dialysis in the United States. More than an additional 179,000 patients had a functioning kidney transplant for end stage renal disease.

Dialysis helps the body by performing the functions of failed kidneys.

Dialysis works on the principles of the diffusion of solutes and ultrafiltration of fluid across a semi-permeable membrane. Diffusion is a property of substances in water; substances in water tend to move from an area of high concentration to an area of low concentration.^[6] Blood flows by one side of a semi-permeable membrane, and a dialysate, or special dialysis fluid, flows by the opposite side. A semipermeable membrane is a thin layer of material that contains holes of various sizes, or pores. Smaller solutes and fluid pass through the membrane, but the membrane blocks the passage of larger substances (for example, red blood cells, large proteins). This replicates the filtering process that takes place in the kidneys, when the blood enters the kidneys and the larger substances are separated from the smaller ones in the glomerulus.

TYPES OF DIALYSIS

Haemodialysis

In haemodialysis, blood is removed from the body and filtered through a man-made membrane called a dialyzer, or artificial kidney, and then the filtered blood is returned to the body. The average person has about 10 to 12 pints of blood; during dialysis only one pint (about two cups) is outside of the body at a time. To perform haemodialysis there needs to be an access created to get the blood from the body to the dialyzer and back to the body. There are three access types for haemodialysis: arteriovenous (AV) fistula, AV graft and central venous catheter. The AV fistula is the vascular access most recommended by the dialysis community; however, you and your doctor will decide which access is best for you.

When a patient goes to haemodialysis, a nurse or technician will check vital signs and get the patient's weight. The weight gain will tell how much excess fluid the patient has to have removed during the treatment. The patient is then "put on the machine". Patient with a vascular access (AV fistula or AV graft) will get two needle sticks in their access; one needle takes blood out of the body; the other needle puts it back. Patients with a central venous catheter will have the two tubes from their access connected to the blood tubes that lead to the dialyzer and back to the body. Once the patient is "put on the machine", the dialysis machine is programmed and then treatment begins.

Blood never actually goes through the dialysis machine. The dialysis machine is like a big computer and a pump. It keeps track of blood flow, blood pressure, how much fluid is removed and other vital information. It mixes the dialysate, or dialysis solution, which is the fluid bath that goes into the dialyzer. This fluid helps pull toxins from the blood, and then the bath goes down the drain. The dialysis machine has a blood pump that keeps the blood

flowing by creating a pumping action on the blood tubes that carry the blood from the body to the dialyzer and back to the body.

PERITONEAL DIALYSIS

In peritoneal dialysis, a sterile solution containing glucose (called dialysate) is run through a tube into the peritoneal cavity, the abdominal body cavity around the intestine, where the peritoneal membrane acts as a partially permeable membrane.(eluma,2017)

This exchange is repeated 4–5 times per day; automatic systems can run more frequent exchange cycles overnight. Peritoneal dialysis is less efficient than haemodialysis, but because it is carried out for a longer period of time the net effect in terms of removal of waste products and of salt and water are similar to haemodialysis. Peritoneal dialysis is carried out at home by the patient, often without help. This frees patients from the routine of having to go to a dialysis clinic on a fixed schedule multiple times per week. Peritoneal dialysis can be performed with little to no specialized equipment (other than bags of fresh dialysate).

Hemofiltration

Hemofiltration is a similar treatment to haemodialysis, but it makes use of a different principle. The blood is pumped through a dialyzer or "hemofilter" as in dialysis, but no dialysate is used. A pressure gradient is applied; as a result, water moves across the very permeable membrane rapidly, "dragging" along with it many dissolved substances, including ones with large molecular weights, which are not cleared as well by haemodialysis. Salts and water lost from the blood during this process are replaced with a "substitution fluid" that is infused into the extracorporeal circuit during the treatment.

Review of literature

The process of removing waste products and excess fluid from the body. **Dialysis** is necessary when the kidneys are not able to adequately filter the blood. **Dialysis** allows patients with kidney failure a chance to live productive lives. There are two **types of dialysis**: haemodialysis and peritoneal **dialysis**.

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 kidney failure or end-stage renal disease). The latter form may develop over months or years, but in contrast to acute kidney injury is not usually reversible and dialysis is regarded as a "holding measure" until a kidney transplant can be performed or sometimes as the only supportive measure in those for whom a transplant would be inappropriate.^[2]

The kidneys have an important role in maintaining health. When healthy, the kidneys maintain the body's internal equilibrium of water and minerals (sodium, potassium, chloride, calcium, phosphorus, magnesium, sulfate). The acidic metabolism end-products that the body cannot get rid of via respiration are also excreted through the kidneys. The kidneys also function as a part of the endocrine system, producing erythropoietin, calcitriol and renin. Erythropoietin is involved in the production of red blood cells and calcitriol plays a role in bone formation.^[3] Dialysis is an imperfect treatment to replace kidney function because it does not correct the compromised endocrine functions of the kidney. Dialysis treatments

replace some of these functions through diffusion (waste removal) and ultrafiltration (fluid removal).^[4]

CHRONIC KIDNEY DISEASE

Chronic kidney disease (CKD), also known as **chronic renal disease**, is progressive loss in kidney function over a period of months or years. The symptoms of worsening kidney function are not specific, and might include feeling generally unwell and experiencing a reduced appetite. Often, chronic kidney disease is diagnosed as a result of screening of people known to be at risk of kidney problems, such as those with high blood pressure or diabetes and those with a bloodline relative with CKD. This disease may also be identified when it leads to one of its recognized complications, such as cardiovascular disease, anemia, pericarditis or renal osteodystrophy.

CKD is classified based on:				Albuminuria categories		
				Description and range		
				A1	A2	A3
				Normal to mildly increased	Moderately increased	Severely increased
				<30 mg/g <3 mg/mmol	30-299 mg/g 3-29 mg/mmol	≥300 mg/g ≥30 mg/mmol
GFR categories (ml/min/1.73m ²) Description and range	G1	Normal or high	≥90	1 if CKD	Treat 1	Refer* 2
	G2	Mildly decreased	60-89	1 if CKD	Treat 1	Refer* 2
	G3a	Mildly to moderately decreased	45-59	Treat 1	Treat 2	Refer 3
	G3b	Moderately to severely decreased	30-44	Treat 2	Treat 3	Refer 3
	G4	Severely decreased	15-29	Refer* 3	Refer* 3	Refer 4+
	G5	Kidney failure	<15	Refer 4+	Refer 4+	Refer 4+

PRE-DIALYSIS

Patients are weighed immediately before and after each hemodialysis treatment to evaluate their fluid retention. Blood pressure and temperature are taken, and the patient is assessed for physical changes since their last dialysis run. Regular blood tests monitor chemical and waste levels in the blood. Prior to treatment, patients are typically administered a dose of heparin, an anticoagulant that prevents blood clotting, to ensure the free flow of blood through the dialyzer and an uninterrupted dialysis run for the patient.

DIALYSIS

1. The pump and a timer are started. Hemodialysis is underway.
2. Periodically (every half-hour, nominally) blood pressure is taken. As a practical matter, fluid is also removed during dialysis. Most dialysis patients are on moderate to severe fluid restrictive diets (in addition to other dietary restrictions), since kidney failure usually includes an inability to properly regulate fluid levels in the body. A session of hemodialysis may typically remove 2-5 kilograms (5-10 pounds) of fluid from the patient. The amount of fluid to be removed is set by the dialysis nurse according to the patient's "estimated dry weight." This is a weight that the care staff believes represents what the patient should weigh without fluid built up because of kidney failure. Removing this much fluid can cause or exacerbate low blood pressure. Monitoring is intended to detect this before it becomes too severe. Low blood pressure can cause cramping or loss of consciousness. Often this is temporary and passes after the head is placed down (Trendelenburg position) for a short time

POST DIALYSIS

1. At the end of the prescribed time, the patient is disconnected from the plumbing - blood lines (which is removed and discarded, except perhaps for the filter, which may be sterilized and reused for the same patient at a later date). Needle wounds (in case of fistula) are bandaged with gauze, held for 10 to 15 minutes with direct pressure to stop bleeding, and then taped in place. The process is similar to getting blood drawn, only it is lengthier, and more fluid or blood is lost.
2. Temperature, standing and sitting blood pressure, and weight are all measured again. Temperature changes may indicate infection. BP discussed above. Weighing is to confirm the removal of the desired amount of fluid.
3. Care staff verifies that the patient is in condition suitable for leaving. The patient must be able to stand (if previously able), maintain a reasonable blood pressure, and be coherent (if normally coherent). Different rules apply for in-patient treatment.

Post-dialysis washout

Following hemodialysis, patients may experience a syndrome called "washout". The patient feels weak, tremulous, and may suffer extreme fatigue. Patients report they "are too tired, too weak to converse, hold a book or even a newspaper." It may also vary in intensity ranging from whole body aching, stiffness in joints and other flu-like symptoms including headaches, nausea and loss of appetite. The syndrome may begin toward the end of treatment or minutes following the treatment. It may last 30 minutes or 12-14 hours in a dissipating form. Patients though exhausted have difficulty falling asleep. Eating a light meal, rest and quiet help the patient cope with washout until it has 'worn away'.

RATIONALE

This report is indented to find out various deviations from standard protocol in Dialysis unit at MAX SUPERSPECIALITY HOSPITAL.

Dialysis unit is the major unit that adds to the cost of patients and major causes for increasing average length of stay

Establishing a standard protocol will help in promoting efficiency amongst the employees

OBJECTIVES

To observe and analyze the various deviations from standard protocol in Dialysis Unit at Max Superspeciality Hospital

To search areas of problem and find reasons for the same

To give recommendations for further improvement in protocols followed in dialysis unit.

Research Methodology

Type of study: Descriptive cross –sectional

Target Population: Doctors, Nurses and Technicians in Dialysis unit at

MAX SUPERSPECIALITY HOSPITAL

Study area: DIALYSIS UNIT at MAX SUPERSPECIALITY HOSPITAL

Duration of Study: 3 weeks

Type of Data – Quantitative & Qualitative

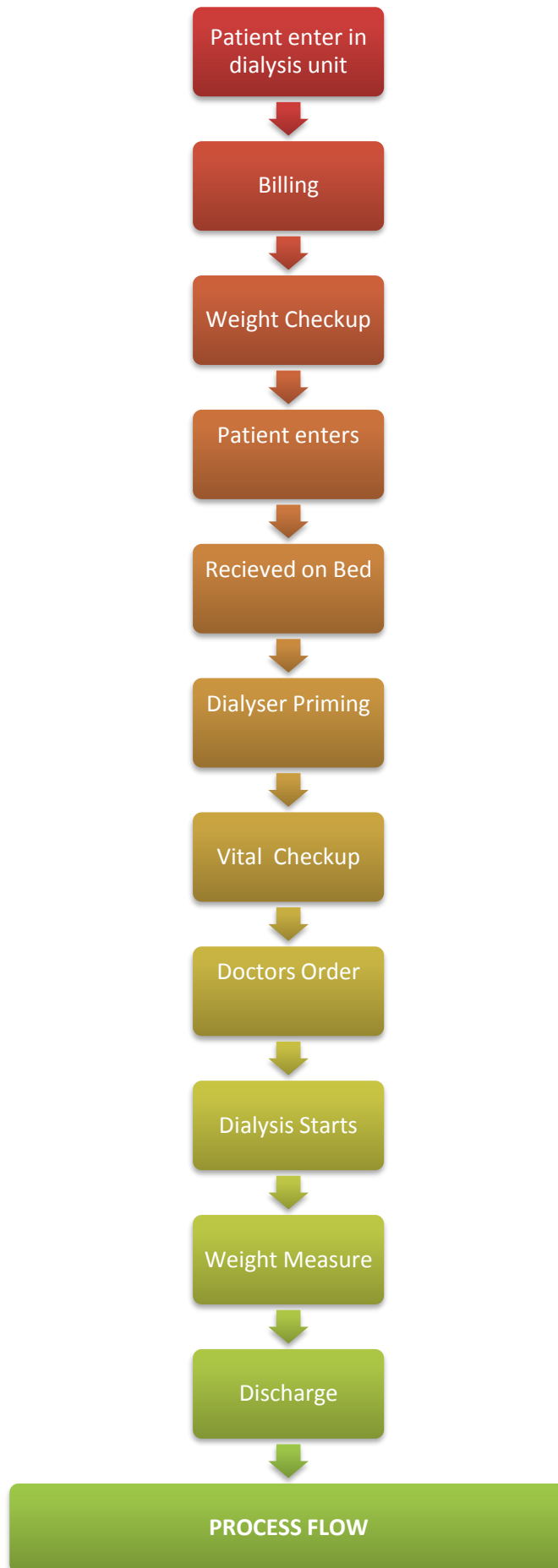
Technique: Direct observation of Dialysis process

Sample Size: 50

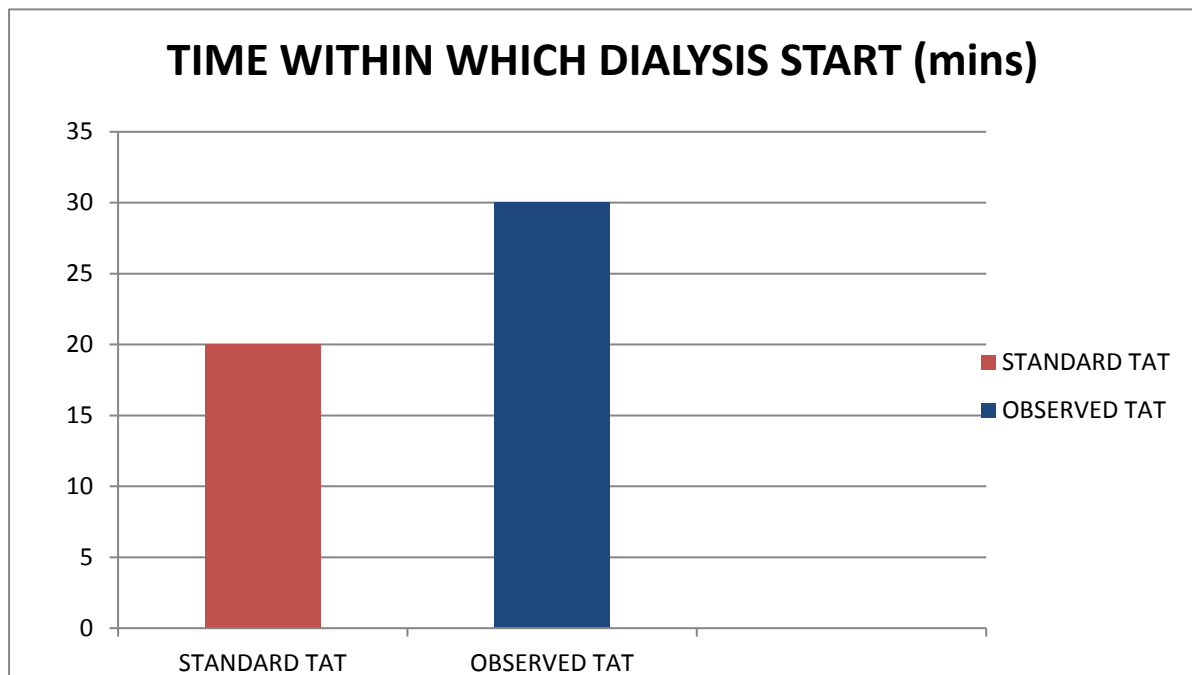
Sampling Technique: Convenient Sampling

OBSERVATION AND FINDING

- Charges for dialysis vary according to dialysis machine. Ferzenius 5008 costs more than ferzenious 4008
- 90% of dialysis patient undergo treatment thrice a week
- Serology test is done one in three weeks
- The most convenient time for patient to receive dialysis is 12pm to 5pm
- Many patient's complaint of wheelchair facility
- One dietician is always present in dialysis unit which take care of diet of patient undergoing dialysis procedure

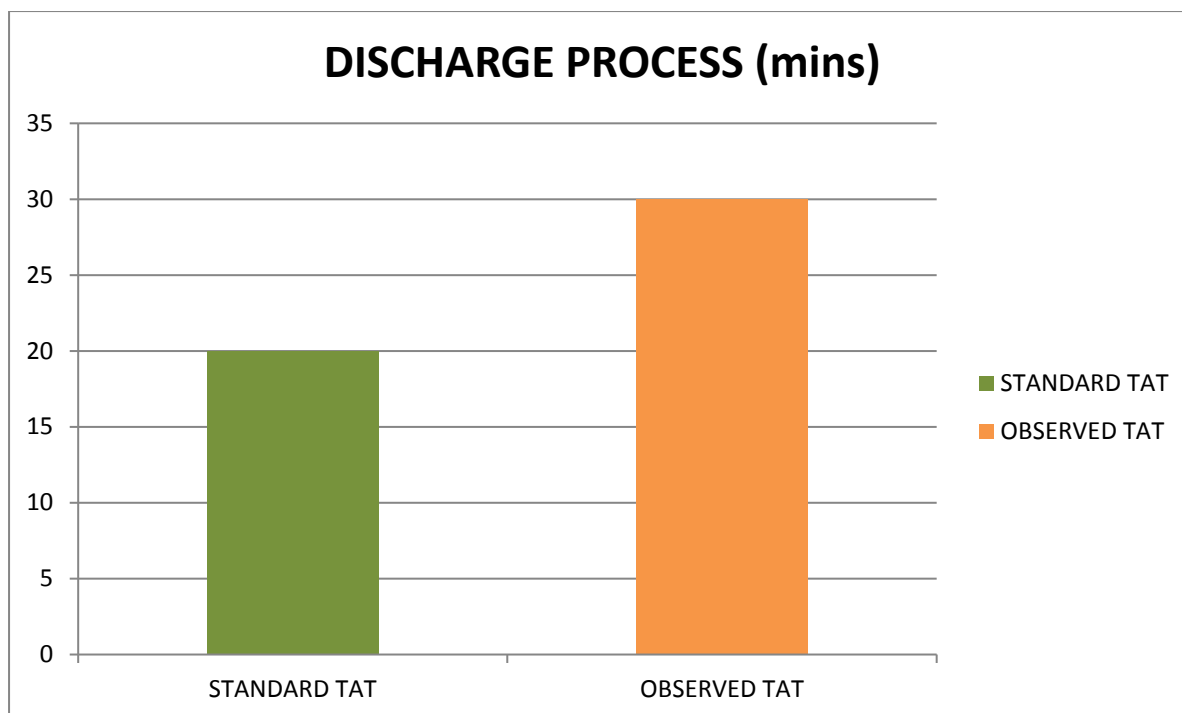


DATA ANALYSIS



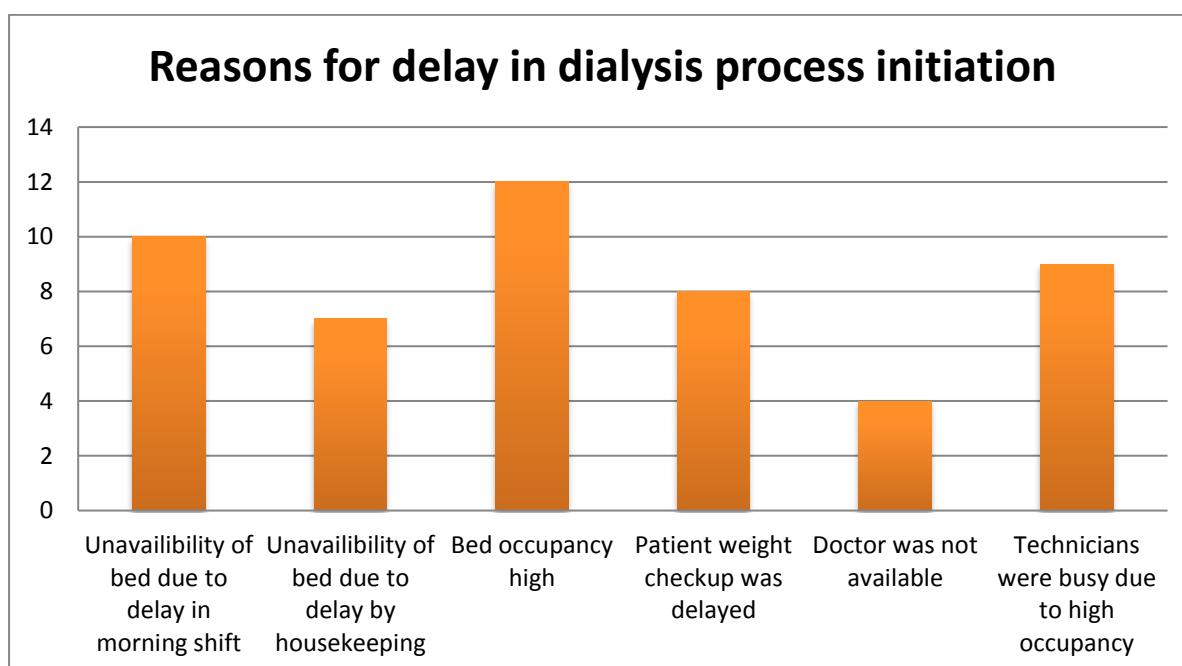
Inference

Above fig shows that standard time within which dialysis process should start is 20mins whereas observed time is 30 min, delay in the process is 10 mins.



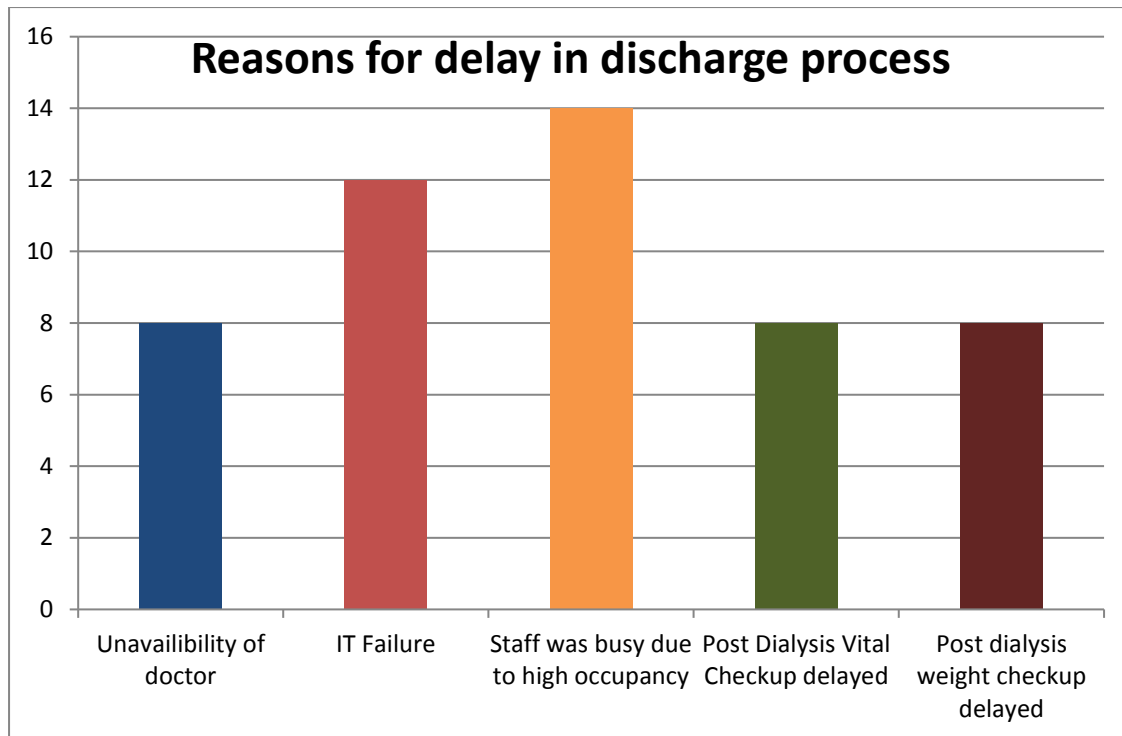
Inference

Above fig depicts the standard tat for discharge process is 20 mins whereas observed tat is 30 mins. Delay in the process is 10 mins.



Inference

Above fig depicts that out of 50 samples observed reason for delay is mainly due to delay in morning shift as patients were late and bed occupancy was high



Inference

Above figure depicts the reasons for delay in discharge process which is mainly because staff was busy due to high occupancy.

Recommendations

- Patient must be instructed to come on time so that next shift starts on time and patient and attendant need not to wait for longer period of time.
- Housekeeping should prepare the bed as soon as patient leaves the bed as it is observed in few cases housekeeping delays the process
- IT failure is significant reason for delay in processes; this should be taken care of.
- In times of high occupancy nursing staff must be increased in dialysis unit so as to keep the process hustle free.
- Pickup and drop facilities for patients can be started by the hospital to prevent delay in shifts.

Conclusion

Dialysis is a procedure to remove waste products and excess fluid from the blood when the kidneys stop working properly. It often involves diverting blood to a machine to be cleaned.

The burden of Chronic Kidney Disease (CKD) is increasing in alarming proportion all over the world. In India due to lack of financial resources, lack of trained manpower & infrastructure leads to severe strain on existing health policies in the light of the increasing burden of CKD. Kidneys are probably the only vital organs which can be realistically replaced by artificial means. Maintenance dialysis is a well-recognized modality of treating patients having end stage renal disease. Several thousands of patients all over the world are surviving and achieving reasonable quality of life on maintenance dialysis. The exact burden of CKD needing maintenance dialysis and/ or renal transplantation is not known; however, from the existing published data prevalence of CKD ranges between 0.7% to 1.4%. Whereas the incidence of end stage renal disease was estimated to be 180 to 200 per million populations

Annexure

[Book2.xlsx](#)