

**Summer Training at
Max Super Specialty Hospital, Saket,
New Delhi**

- **Study on Tracking the Time Taken by the Doctors to Visit the Patient**
- **Study on Making the Earthquake Evacuation Plan for the Hospital**

**By
Bhavya Arora**

**Under the guidance of
Dr. Mohan Bairwa**

**MBA Hospital and Health Management
2015-2017**



**The IIHMR University, Jaipur
2016**

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. Bhavya Arora**, student of MBA in Hospital and Health Management from The IIHMR University, Jaipur has undergone summer training at **MAX Super Specialty hospital, Saket, Delhi** from **1st April 2016 to 31st May 2016**.

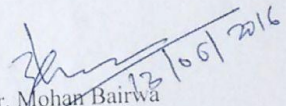
The candidate has successfully carried out the study designated to her during summer training and her approach to the study has been sincere, scientific and analytical.

The summer training is in fulfillment of the course requirements.

I wish her all success in all her future endeavors.



Col (Dr) Ashok Kaushik
Dean, Academic and Student Affairs
The IIHMR University, Jaipur



Dr. Mohan Bairwa
President
The IIHMR University, Jaipur

ACKNOWLEDGMENT

The internship opportunity with Max Super Specialty Hospital, Saket was a great chance for learning and professional development. I am also grateful for having a chance to meet so many wonderful people and professionals who led me through this internship period.

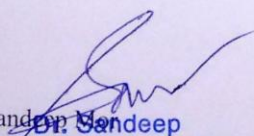
I am highly grateful and would like to express my deepest gratitude and special thanks to my mentor, Dr. Sandeep Mor, Deputy Medical Superintendent at Max Super Specialty Hospital, Saket, who in spite of being extraordinarily busy with his duties, took time out to hear, guide and keep me on the correct path and arranging all facilities to make life easier and allowing me to carry out my project at their esteemed organization during my summer internship. I choose this moment to acknowledge his contribution gratefully.

It is my radiant sentiment to place on record my best regards, deepest sense of gratitude to Dr. Neha Chandra, (Assistant General Manager- Medical Quality), Dr. Tanya (Quality Department), Dr. Tanvi Chhabra (Programme Manager), Dr. Ashish Tripathi (Assistant Manager- Medical Administration) & Mr. Arjun Singh Rawat (Fire & Safety Officer) 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 Also like to thank Dr. Priyanka Maini for being my support all throughout my internship.

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,

Ms. Bhavya Arora


Dr. Sandeep Mor
Deputy Medical Superintendent
Max Super Specialty Hospital (West Block)
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Max Super Specialty Hospital, Saket

Place: New Delhi

Date: 31 May, 2016

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ABBREVIATIONS

ABBREVIATIONS	Meaning
ALOS	Average Length of Stay
CMO	Chief Medical Officer
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	Masters 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.

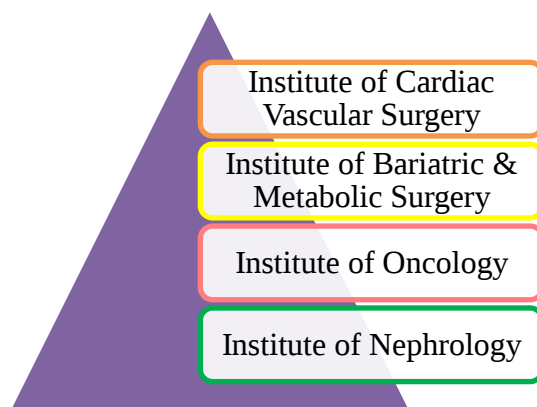


The pillars of this model include:

- 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

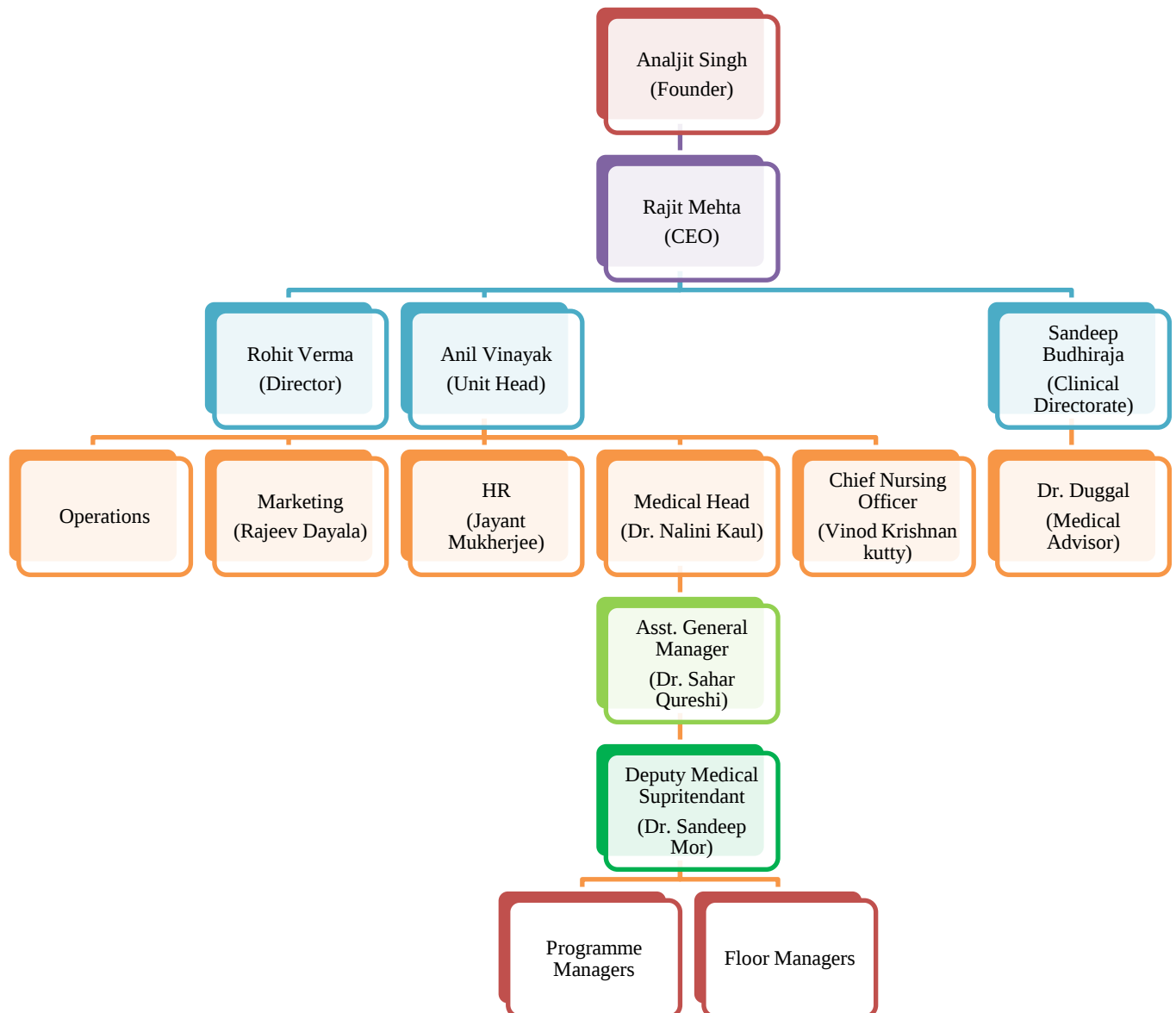
Data collection involved discussions with the Administrative staff, the HODs on the managerial issues, communicating with the other staff and going through the records.

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

GENERAL FINDINGS

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.

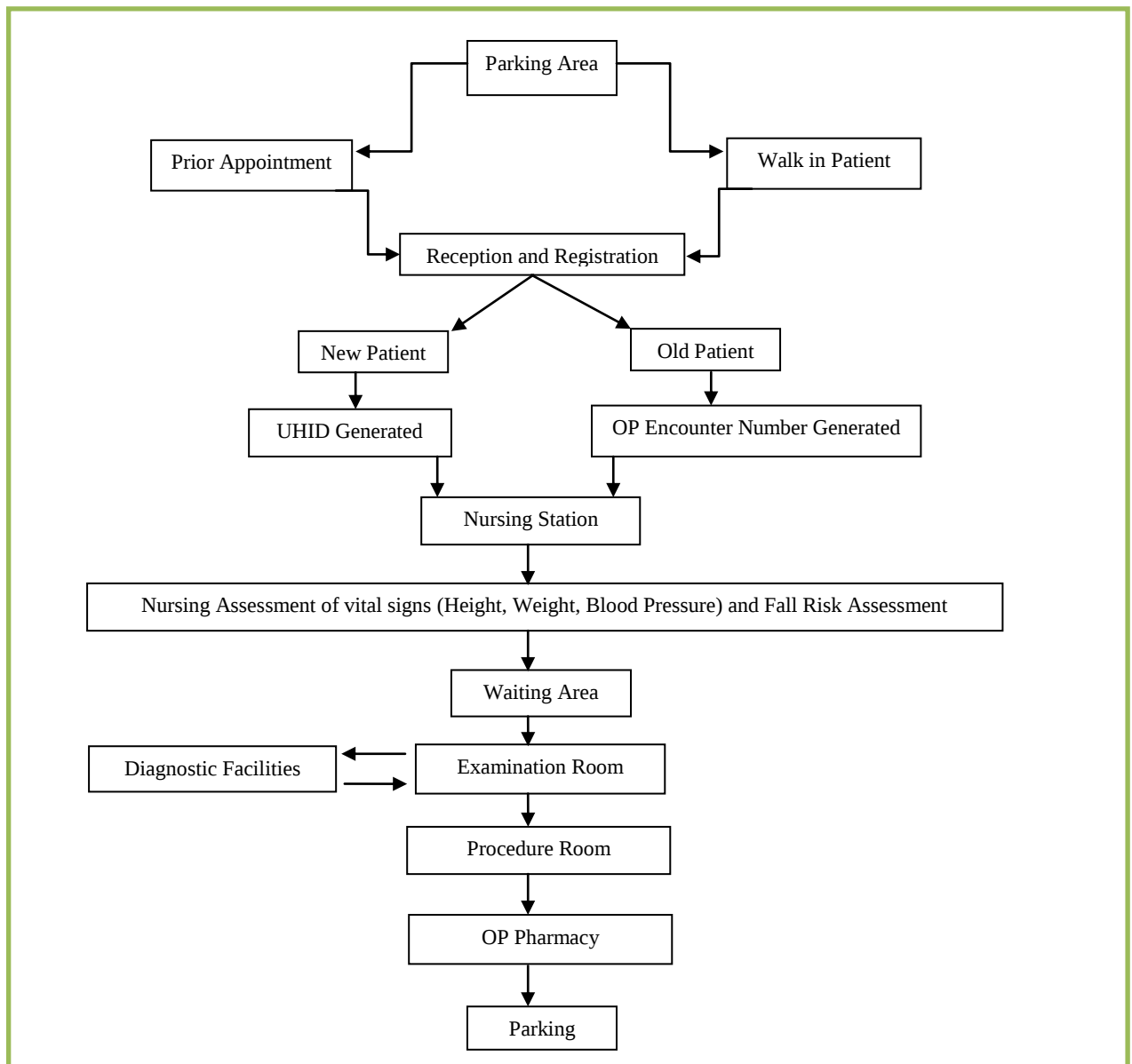
Challenges

- 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.

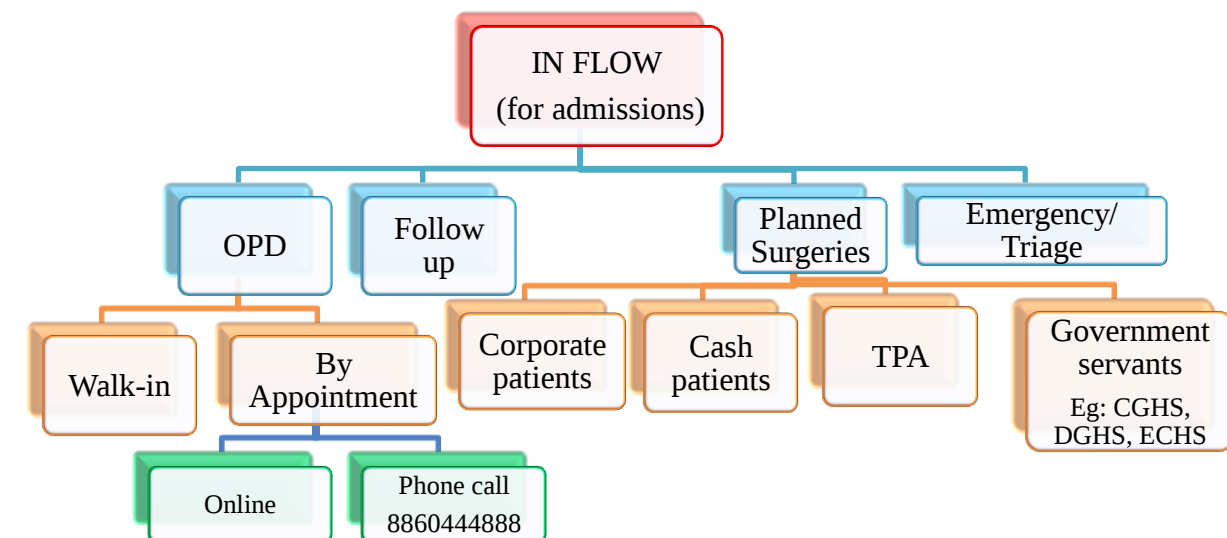
The general process flow that is followed in all the OPDs is as follows:



ADMISSIONS DESK

- 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



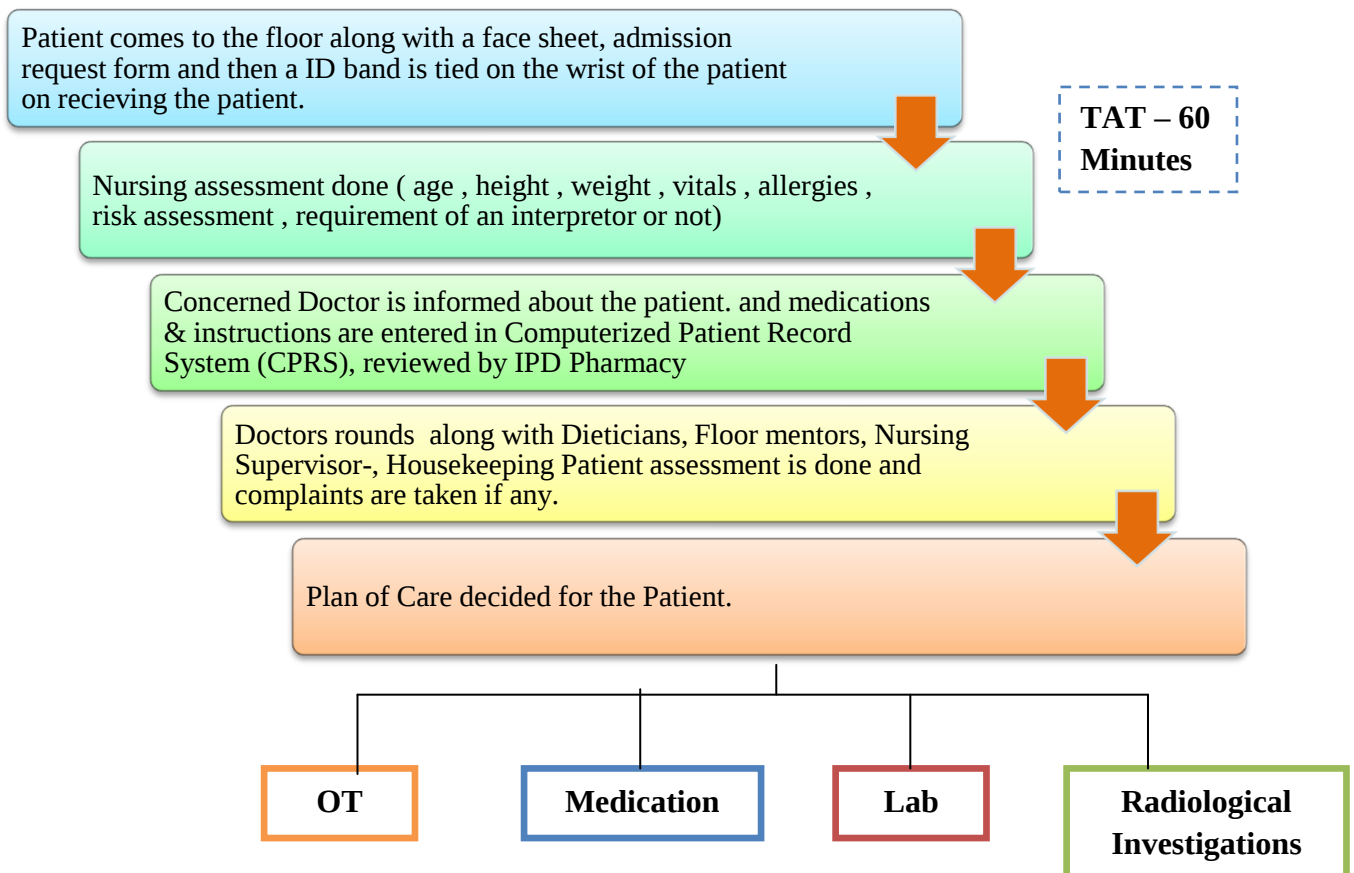
Hierarchy



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



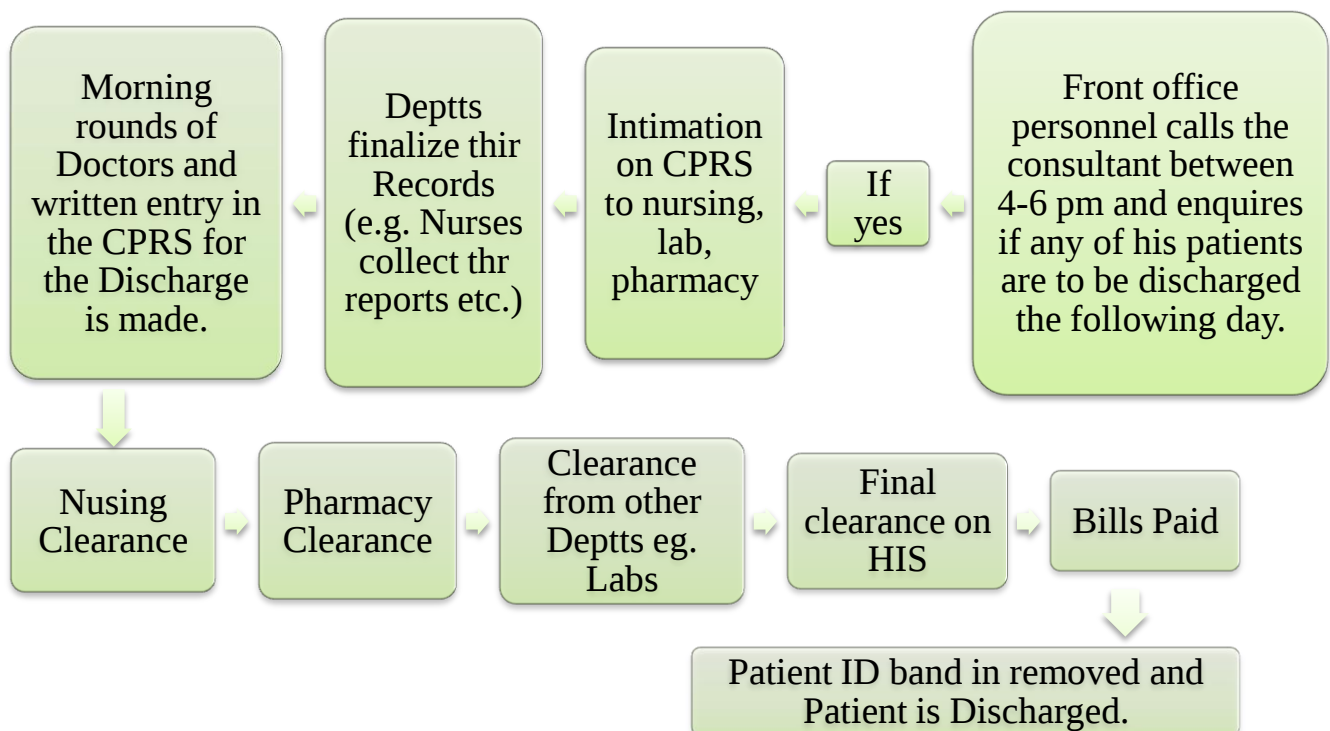
- **BARRIER NURSING-**

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:

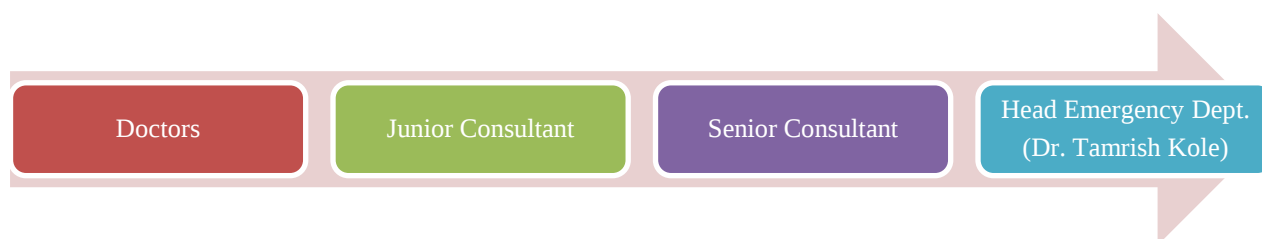
Total 25 bedded

- 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.

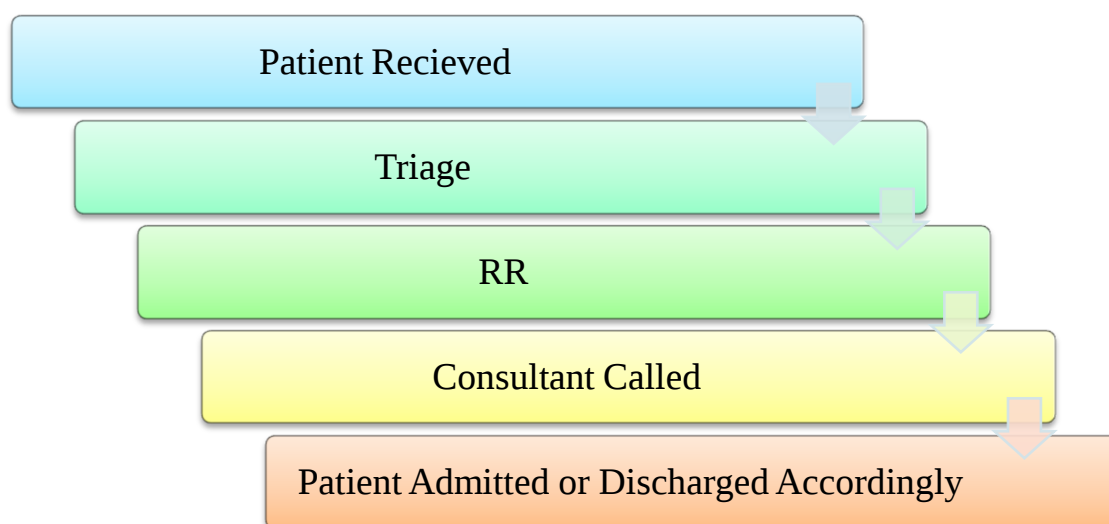
Staffing:

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



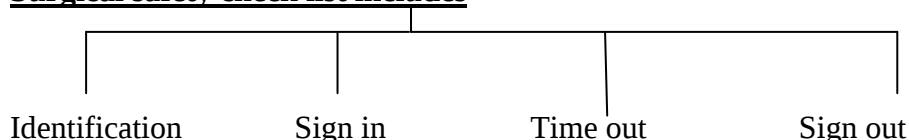
OPERATION THEATER COMPLEX

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:

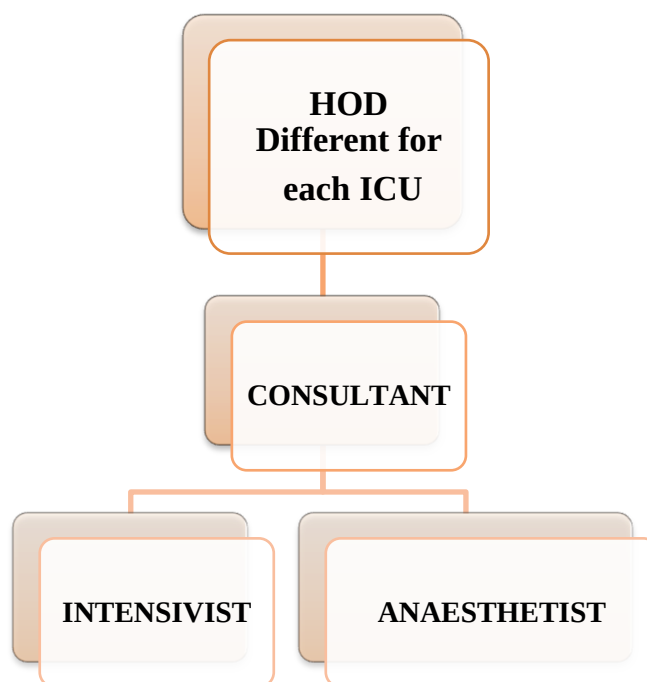
Floor	East	No. of Beds	West	No. of Beds
G.F.	Apex Coronary Care	16		
1 st Floor	CTVS Cath Recovery Paediatric CTVS	17 14 11	Surgical Neuro-Surgical Neuro-HDU ISCU	11 9 9 4
2 nd Floor	Onco-Surgical Onco-Medical CTVS- HDU Cardiac HDU	9 12 4 4	Stroke and Neuro	8
3 rd Floor	Medical	8	Neonatal (a) Neonatal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

6 th Floor			Medical	8
		95		79

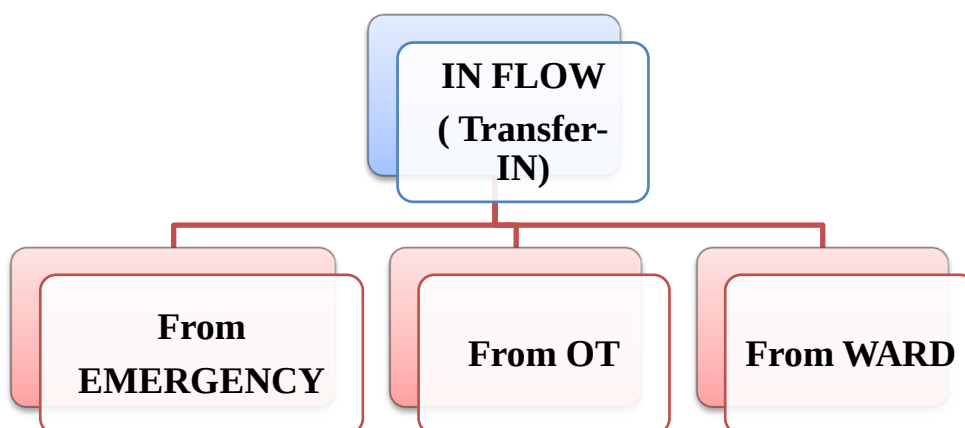
All Intensive Care Units have a 24 hour service of Intensivist and an Anesthetist.

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

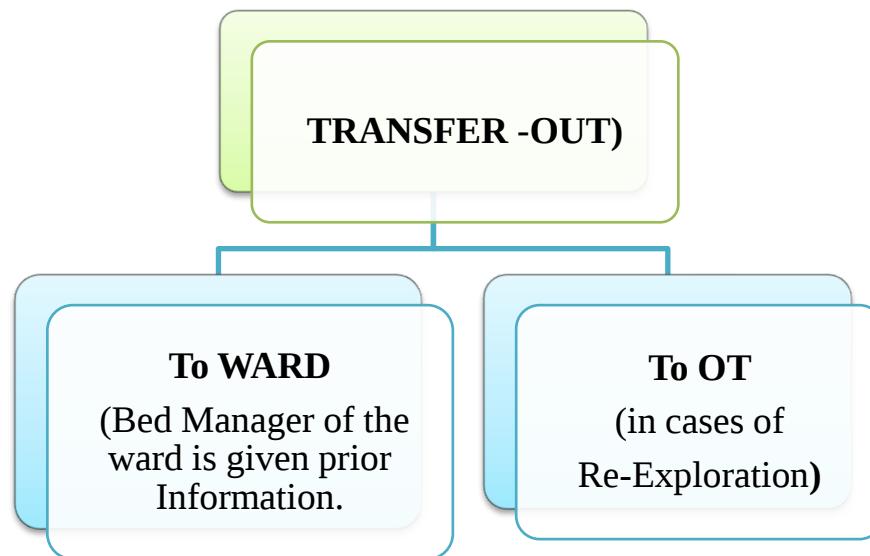
Hierarchy



Patient Flow



Before hand 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

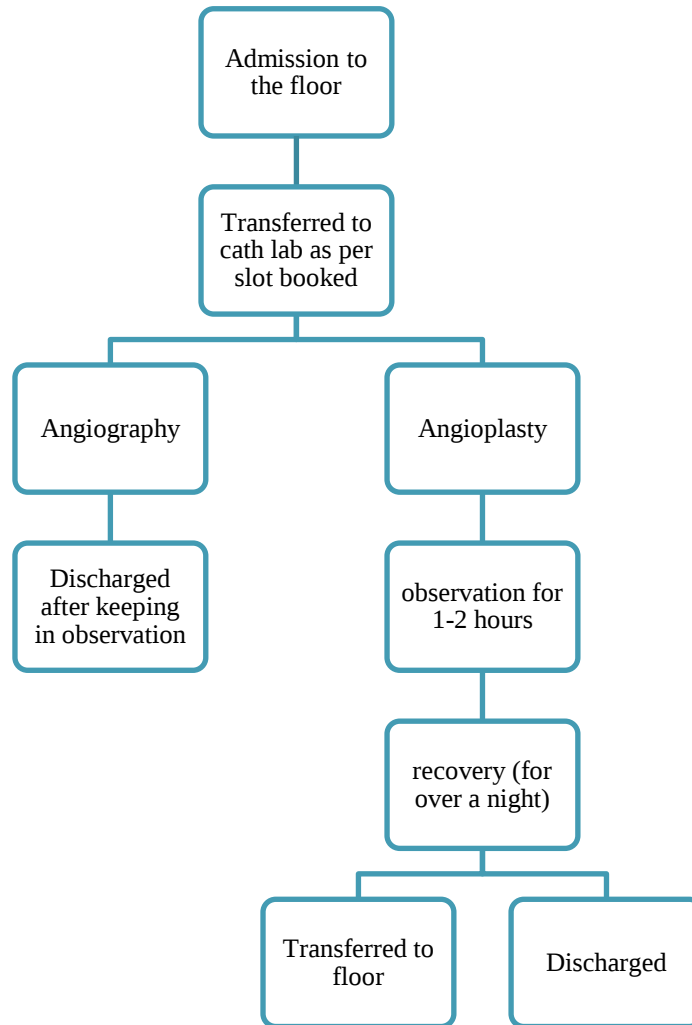
Units of cath lab:

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

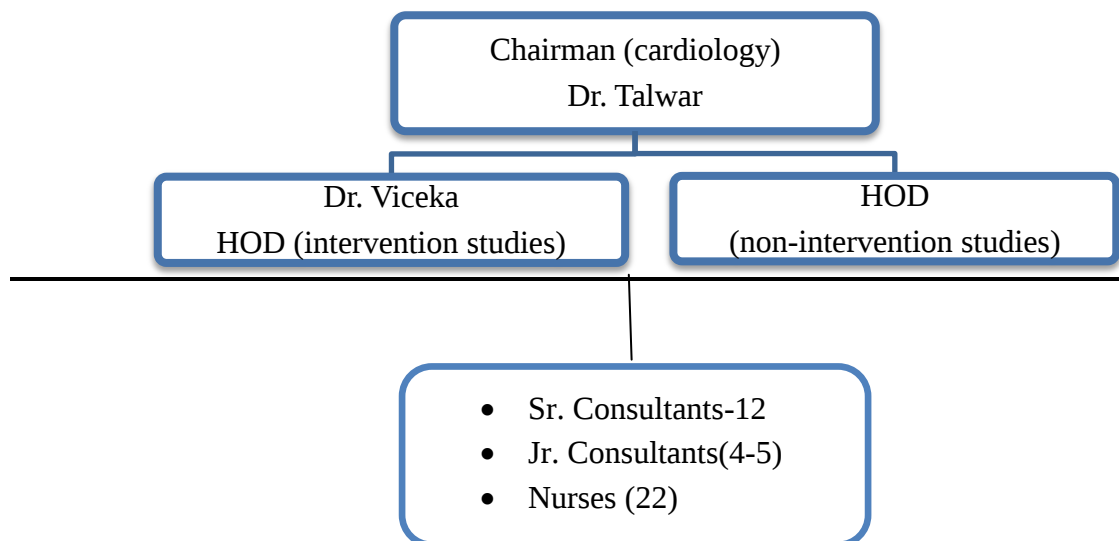
Location: Cath lab is located on the first floor with the vicinity areas as

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

Process Flow of Patients



Staff



DEPARTMENT OF LAB SERVICES

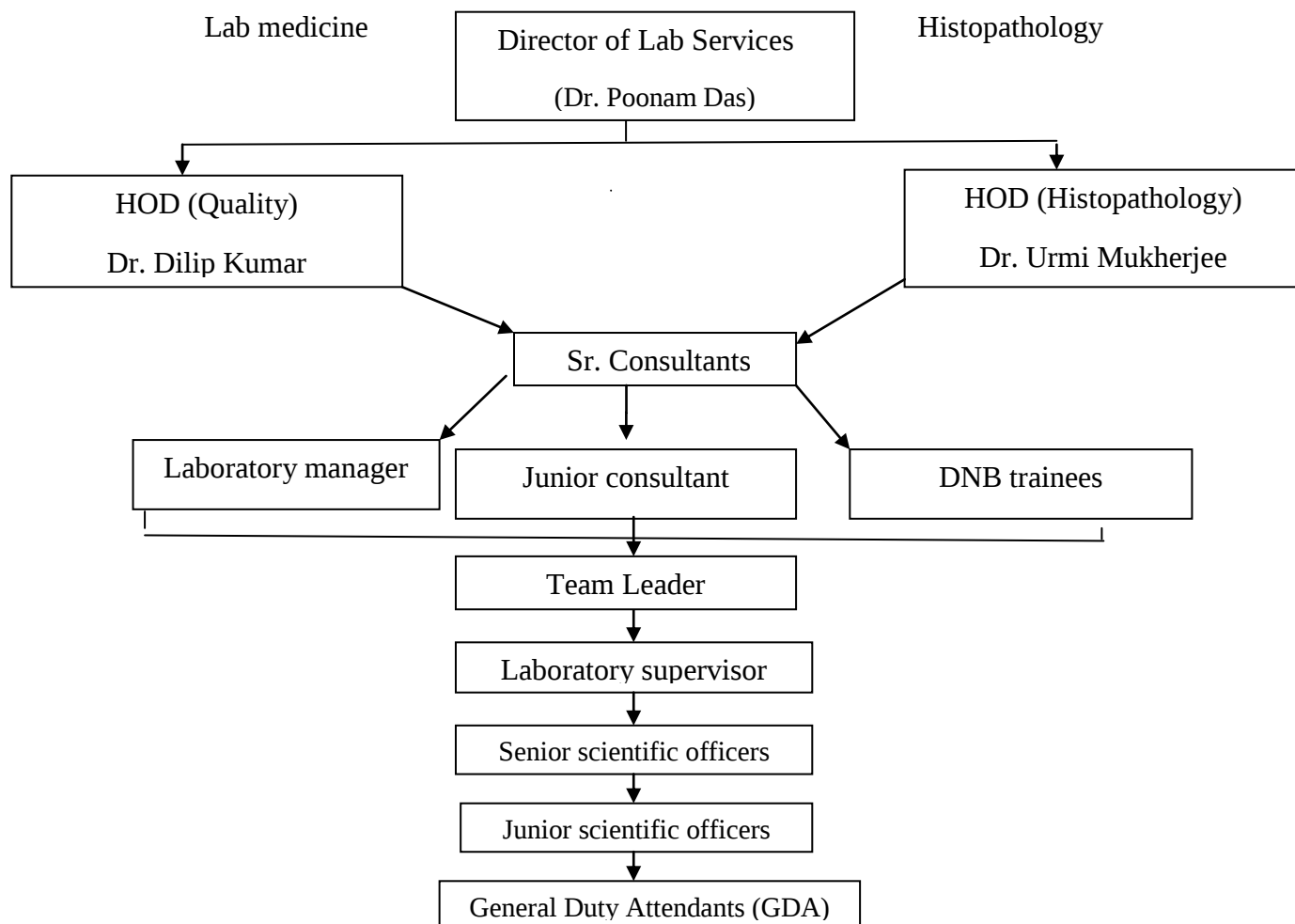
INTRODUCTION-

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.

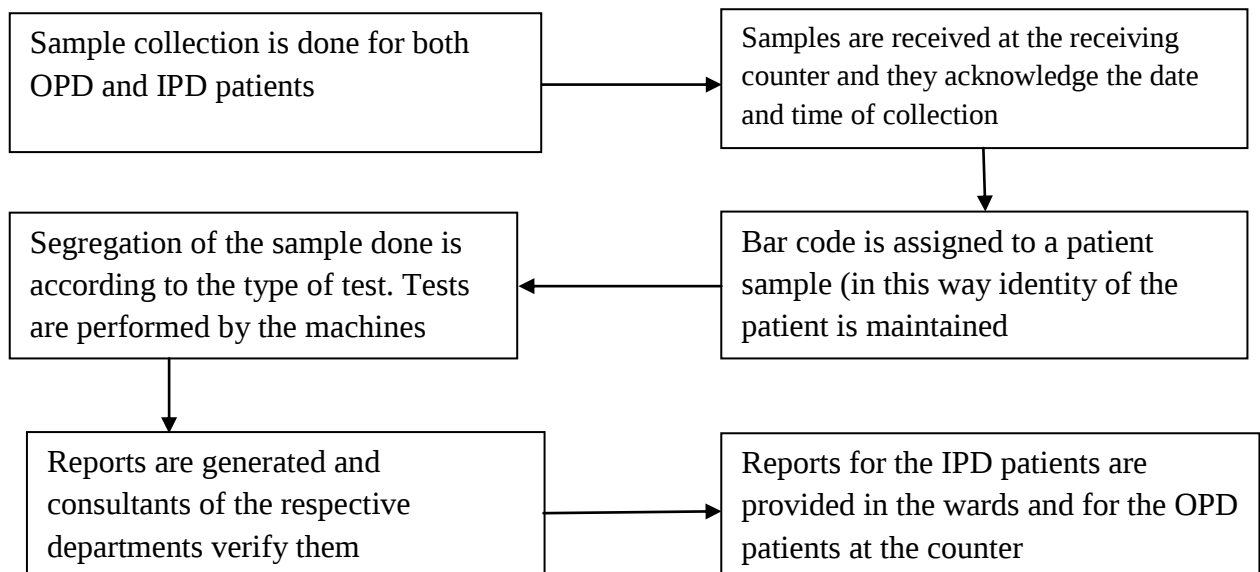
LABORATORY COMPRISES OF THE FOLLOWING DEPARTMENTS-

- 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)

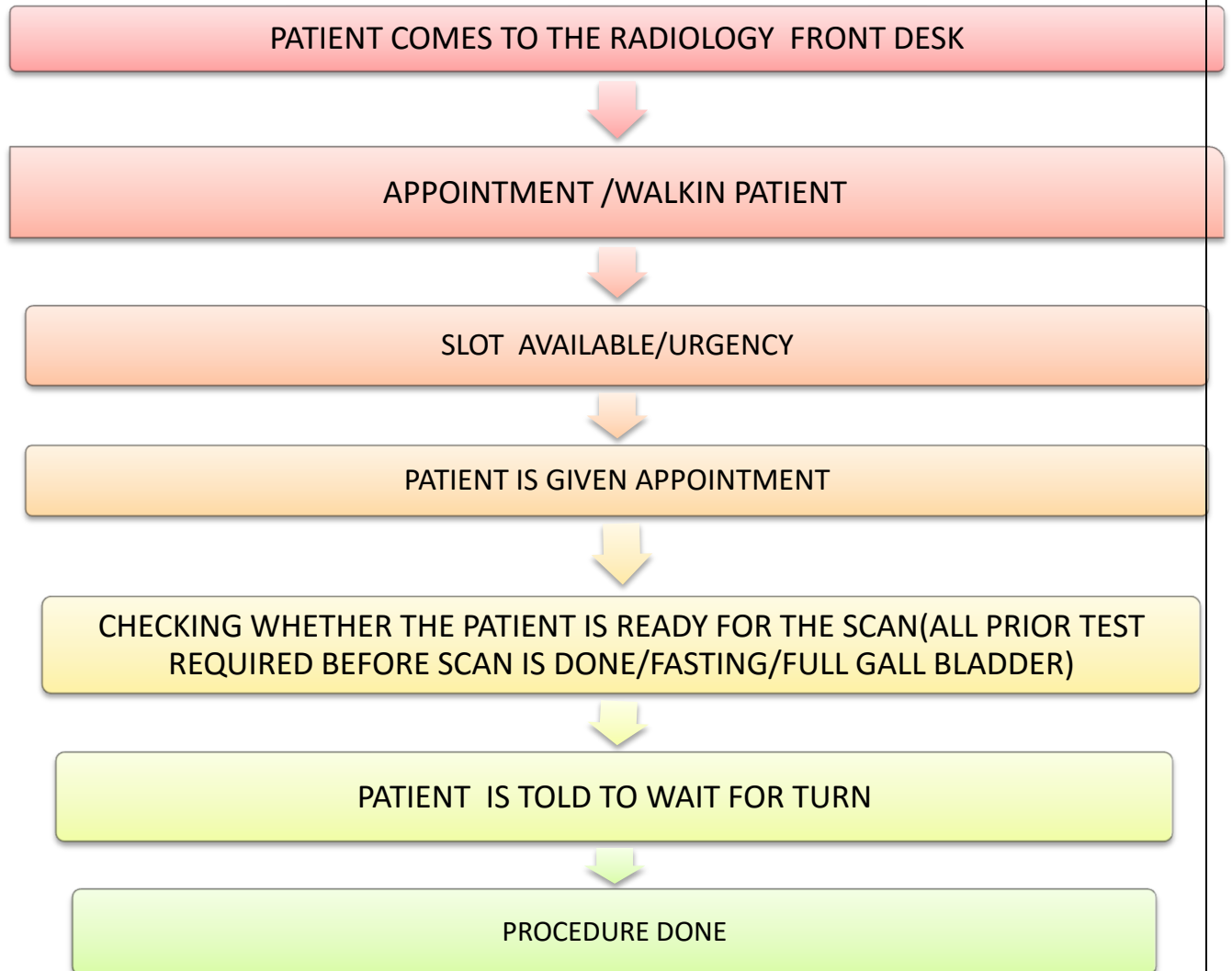


Figure:-Process flow in radiology department for outpatients.

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

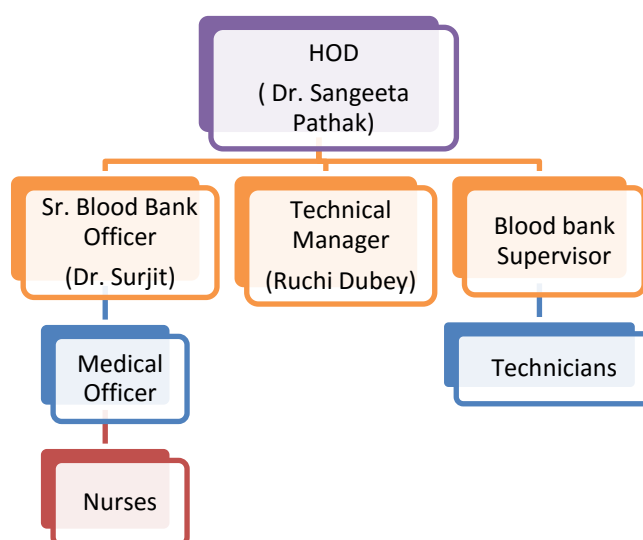
Max super specialty hospital has its own blood bank. All blood groups are available. It is mandatory for the in-patient attendants to donate blood or do replacement of the blood.

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.

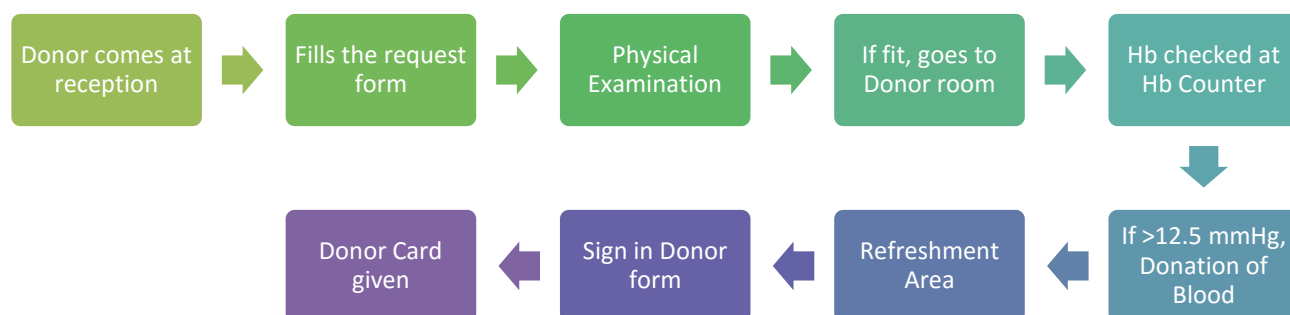
Staff of blood bank consists of 1 HOD, 2 blood bank officer, 1 technician supervisor, 16 technicians, 2 staff nurse, 2 computer executives, 4 GDA.

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

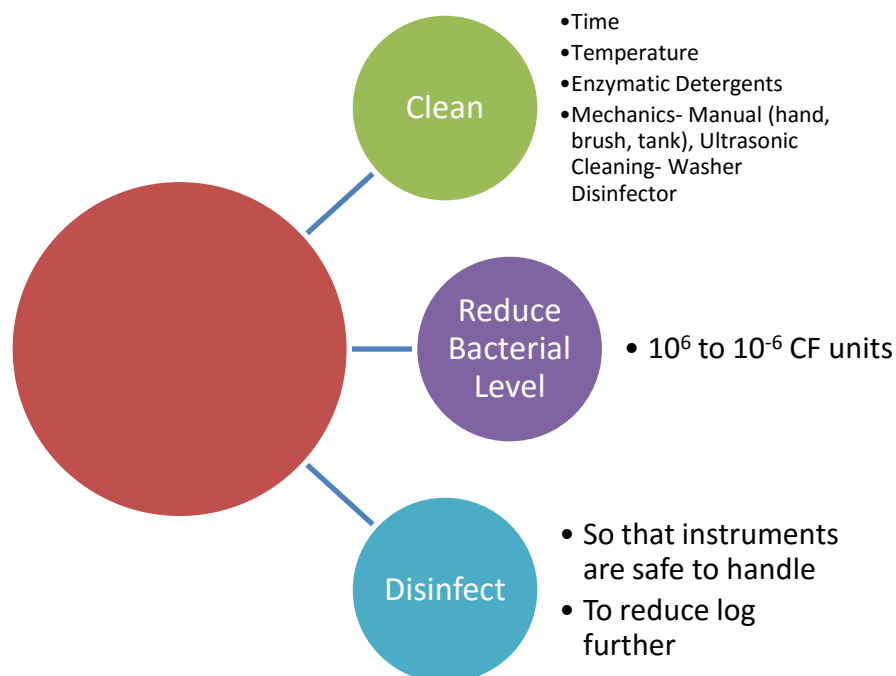
INTRODUCTION-

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:

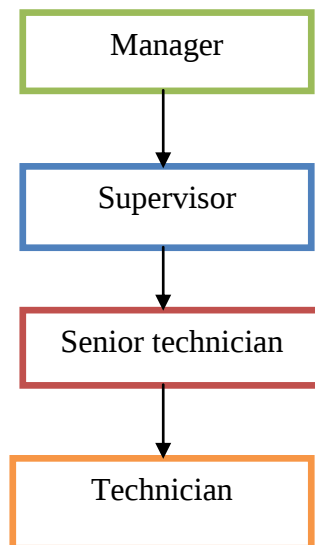


Types of Sterilization-

- 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-

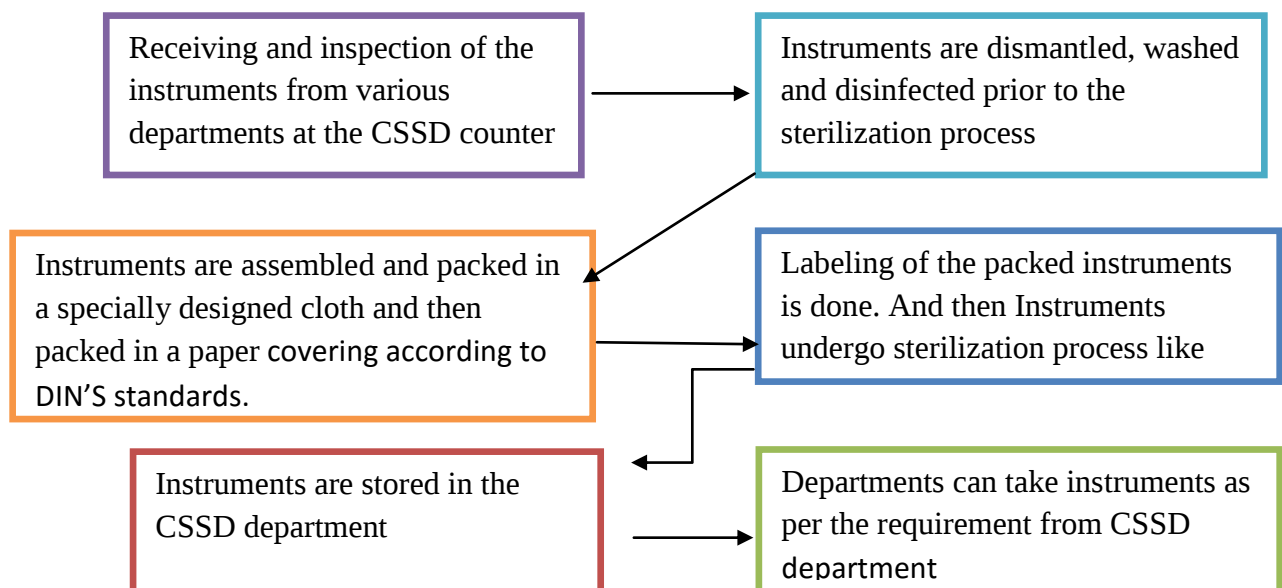


The Department is headed by Dr. Sanjeev Bhatia.

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.

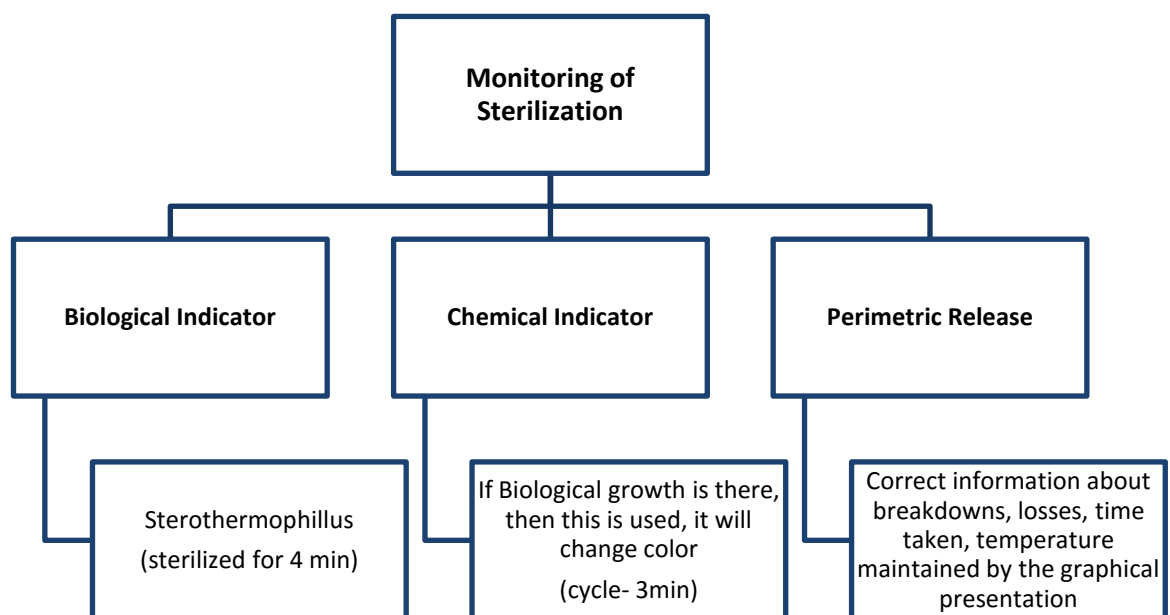
EQUIPMENT LIST-

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

QUALITY INDICATORS-

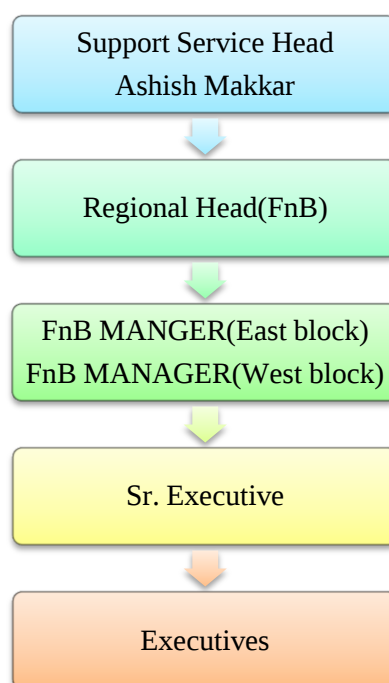
Various quality indicators used in CSSD are-

- **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



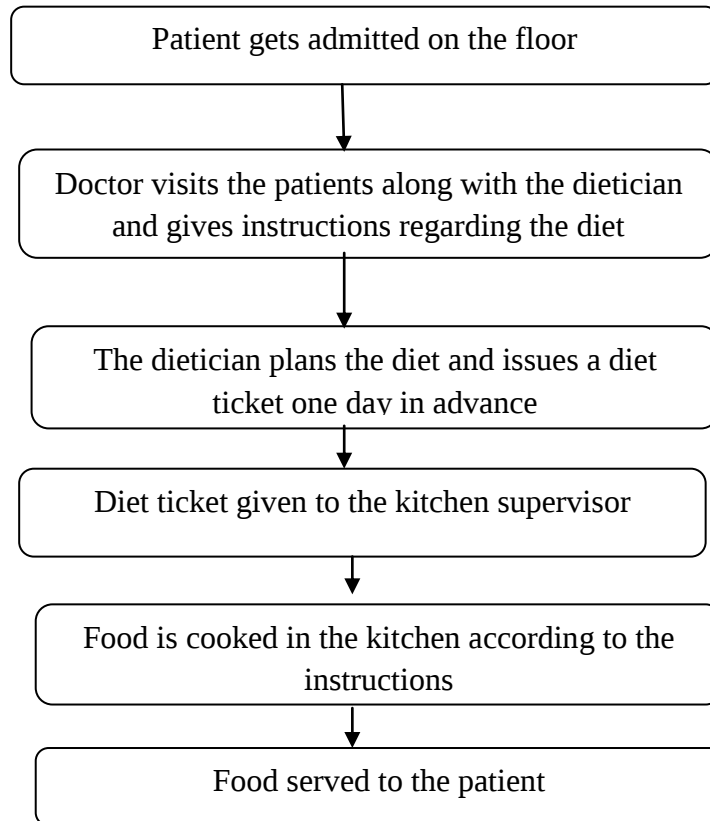
Time table for the diet of the patient: (7 meals/day)

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 wants 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

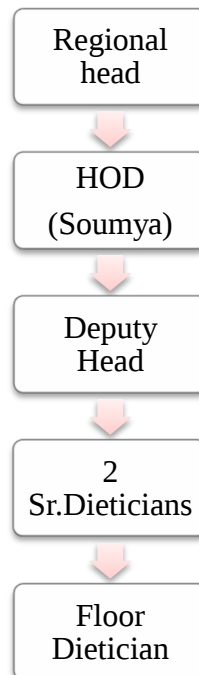


Quality Indicators for F n B department: Food Receiving, Food storage, Staffing

- 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

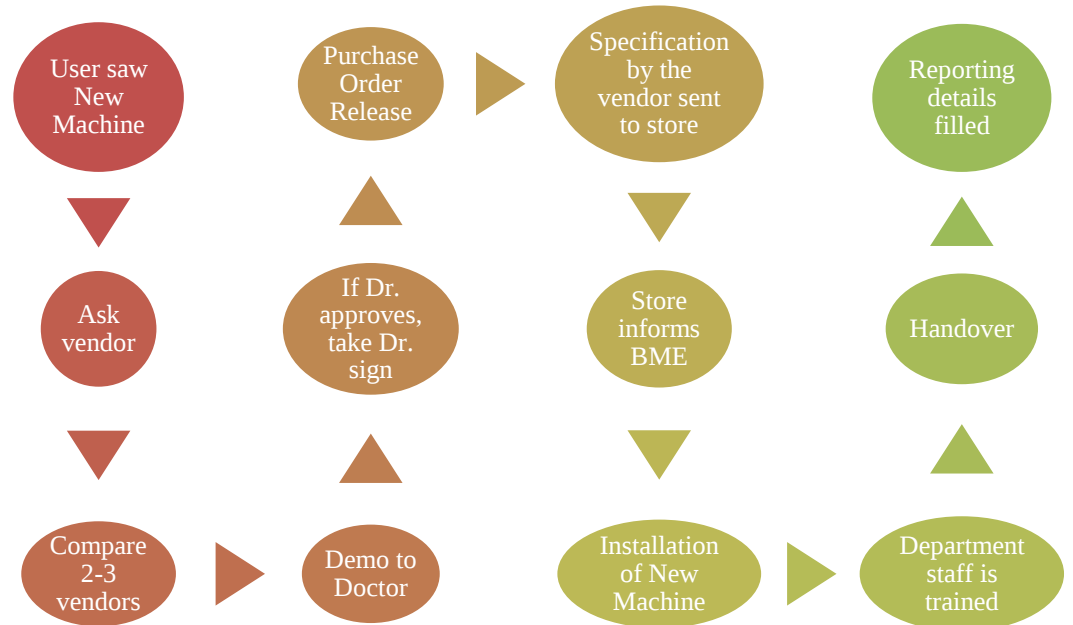


- Dietician: patient – 1:50
- Assessment of each patient to be done within 24 hours of admission and thereafter every 8th day after initial assessment.
- Scoring – Normal, Soft, Liquid Diet
- For enteral nutrition, all commercial supplements for each disease are available.
- Diet Note is put on CPRS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

BIOMEDICAL ENGINEERING

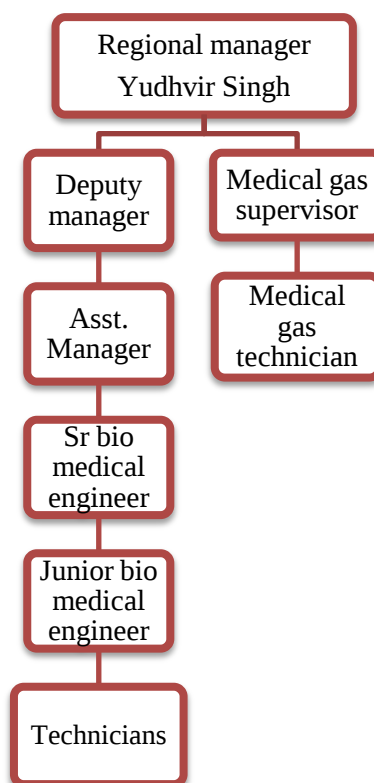
- This department deals with purchase, installation and commissioning, training on operating, handling and maintenance of medical equipment in all departments of the hospital.
- Looks after running equipment and new equipment.
- For Running equipment
 - Preventive maintenance (PM) is done – to prevent 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)

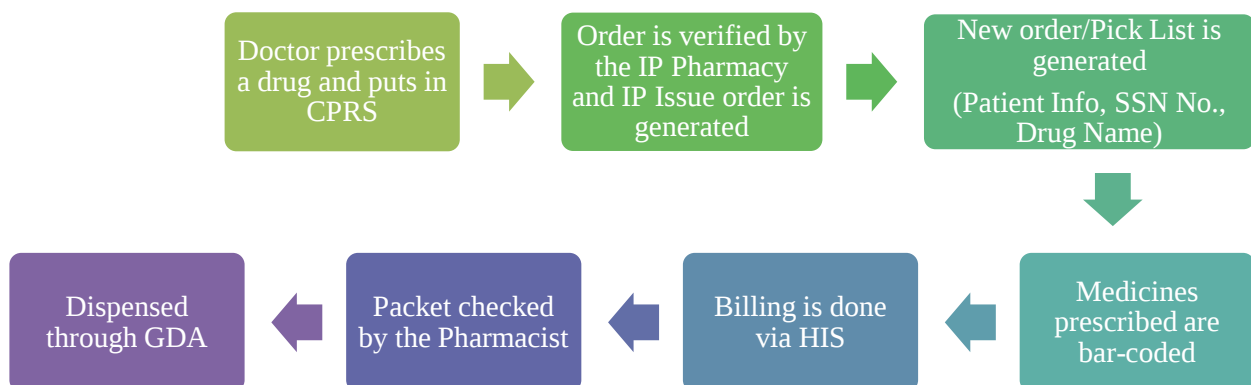
- Weekly requisition is done and vendors take minimum 3 days for delivery of drugs to hospital.

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-

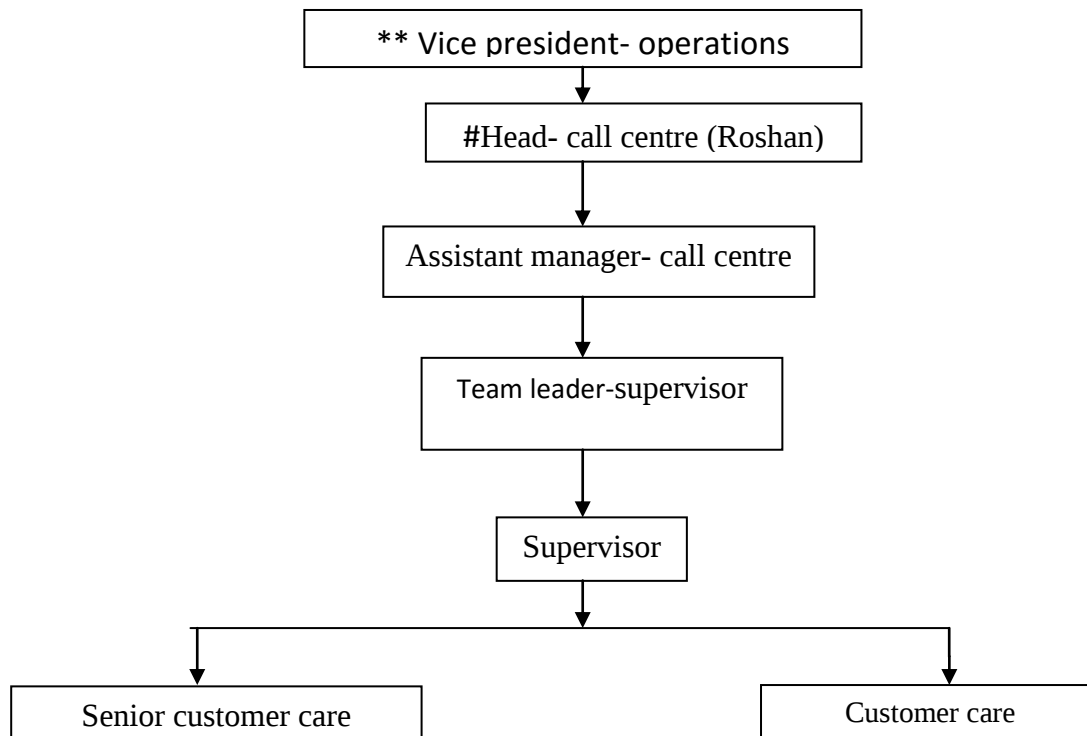
CALL CENTRE (in-house)

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:

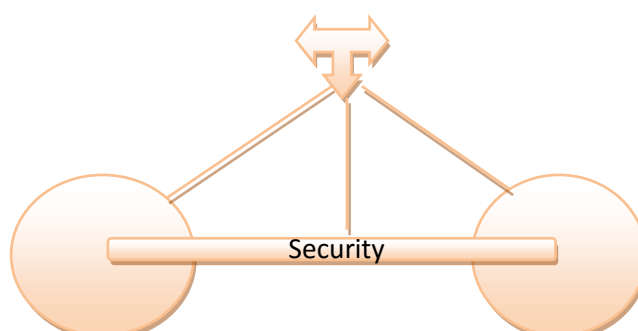


Ticket Process Flow



- 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.

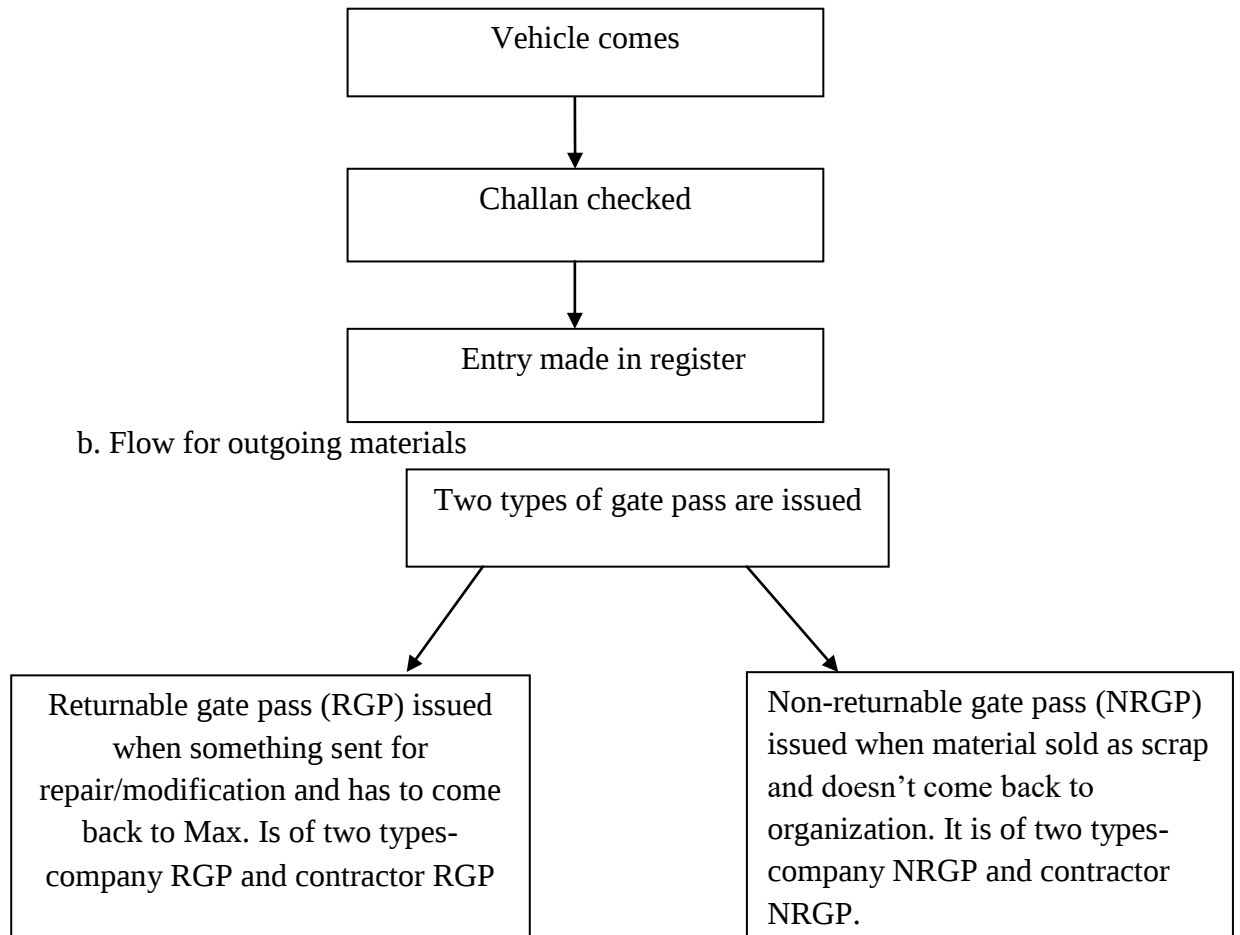
Functions of Security Department:-

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.

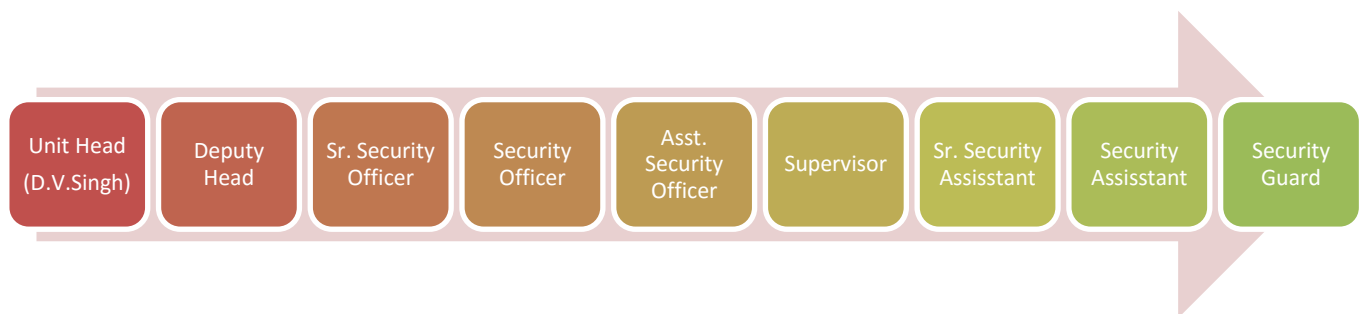
Other disasters include floods, water logging, terrorist attacks.

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.

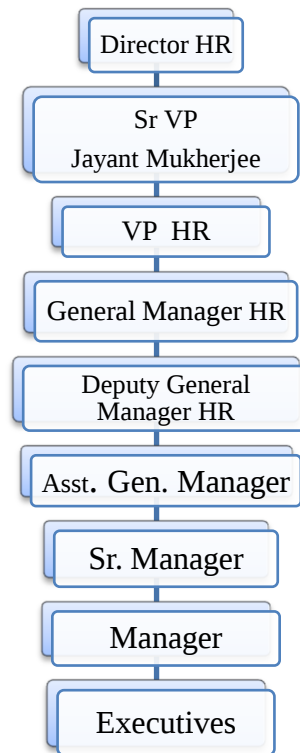
Core Values of HR : Excellence, Credibility and Seva bhavna

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

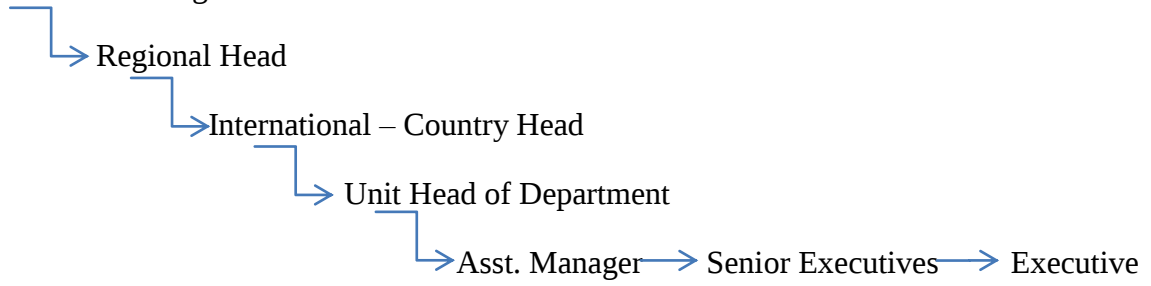
International patients avail treatment in India mainly because these facilities or treatments are not available in their respective countries, and are available at a much cheaper price in India than other countries such as US, UK or European countries. The countries from where patients come to seek treatment 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.



**Tracking the Time Taken by
the Referral doctors to visit the patient**

AT

MAX SUPERSPECIALITY HOSPITAL, SAKET



Institute of Health Management Research, Jaipur

DECLARATION

I do hereby declare that I am a student of 1st year, MBA in Hospital and Healthcare Management, IIHMR University, Jaipur, Rajasthan session 2014-2016.

I would like to state that I have done the project on “Tracking The Time Taken by the Referral doctors to visit the patient” under the guidance of Dr. Tanvi Chhabra (Programme Manager- Nephrology) at Max Super Speciality Hospital, Saket, New Delhi for the partial fulfilment for the degree of MBA in Hospital and Healthcare Administration.

This project work is my own and has not been submitted to any of the other Institute or University for the purpose of award of any degree or diploma.

Ms. Bhavya Arora

IIHMR University

(2015-2017)

INTERNSHIP CERTIFICATE FROM MAX SAKET

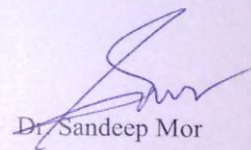
This is to certify that Ms. Bhavya Arora, a student of IHMR - Jaipur PGDHM-20 has carried out a project on the topic "Tracking the Referral Time of Doctors in the Nephrology Department at Max, Saket, New Delhi".

This project work has been prepared by the student herself with utmost sincerity and this work has not been presented earlier for any academic activity.

I wish her all the very best & success in her further future endeavours.

Dr. Tanvi Chhabra

Programme Manager- Nephrology Department



Deputy Medical Superintendent

Dr. Sandeep
Deputy Medical Superintendent
Max Super Speciality Hospital-(West Block)
1, Press Enclave Road, Saket, New Delhi-110 017

ACKNOWLEDGMENT

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

I would like to acknowledge, First and foremost Dr. Tanvi Chhabra (Programme Manager- Nephrology) for showing confidence in me and giving me such a wonderful topic to do my project & Dr. Sahar Qureshi (Assistant General Manager- Operations), without her support and guidance it would not have been possible. Also I would like to thank Dr. Dinesh Khullar (HOD- Nephrology Department) for his guidance, motivation and encouragement throughout the completion of Project& Dr. Gagan Chhabra (Consultant- Nephrology) whose support was very essential in the completion of my project. Then I would like to thank my mentor at Max Hospital, Saket Dr. Sandeep Mor (Deputy Medical Superintendent) for his guidance throughout my internship period. I would also like to thank Ms. Nisha (Nursing Practitioner) for her guidance throughout the completion of Project.

I would also like to thank Dr. Nalini Kaul (Medical Superintendent) without whose permission I would not get this golden opportunity to do my internship in this esteemed hospital.

I would also like to thank my faculty at IIHMR-Jaipur and specially my Mentor- Dr. Mohan Bairwa (Professor) and also feel privileged to acknowledge Dr. Priyanka Maini for being my support all through the internship.

I would also whole heartedly thank the entire staff at Max, Saket for being so supportive and helpful and taking out some time from their hectic schedules and giving all the required information, especially Nephrology Department.

At the end, I am thankful to God and my heartfelt gratitude to my parents and friends who supported me throughout the course.

THANK YOU ALL

Bhavya Arora

IIHMR

(2015-2017)

Declaration

Acknowledgment

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INTRODUCTION

The referral system is the cornerstone to support the relation between the basic medical care and the different specialised departments of the hospitals. The referral system is considered one of the primary medical system components by World Health Organization (WHO) since 1978 AD. Primary care physicians (PCPs) often refer patients to specialists when they face a complicated or perplexing diagnosis, or one that is beyond their purview.

Referral is the process of directing, re-directing or transferring, a patient to an appropriate specialist. There are three types of Referrals.

1. Horizontal - The Referral is Horizontal when it occurs between units of the same institution.
2. Vertical - The Referral is Vertical when it is between units of different institutions.
3. Counter- Referral - It is the process of re-directing the referred patient back to the initiating unit once the reason for referral has been resolved.

Referral of patients from primary care physicians to specialists may affect the process of patient evaluation, treatment, and continuity of care and can affect clinical outcomes and costs. For the primary care physician, the referral decision involves not only whether the patient needs to be referred to a specialist, but also which specialist should be chosen to see the patient.

The most important inputs to the referral decision are the clinical characteristics associated with the patient's presenting health problem. Getting advice on diagnosis or treatment is a common reason for referral. The main issue with physician referrals is that often they don't even realize the mistakes they are making. Many physician referrals go awry when questions aren't asked and guesses are made about the status of the patient, tests that were taken, missing documentation and more. This is a huge problem for a referral network because the patient is the one who will quickly see the negative effects of guesswork when it comes to their wellbeing. Too often do referrals get made to another physician without the proper paperwork, test results or any other notes about the patient. This is extremely cumbersome with patients that have an extensive medical history and need an accurate trail of information about them presented to each physician to properly prepare them. If there is a lack of understanding from the beginning of your relationship with other medical professionals in the referral network then problems could arise at the expense of the patient.

Often the primary care physician and the specialized physician don't think to clarify each aspect of their relations in a referral capacity, specifically who will be managing the overall care of the patient during the process. Present among all the other mistakes the most highlighted is the lack of communication.

Sometimes primary care physicians don't reach out to a specialized physician in time, prolonging a patient's experience or even possibly jeopardizing the patient's health.

Our current health care system is plagued by long waiting times and delays in care. These waits and delays dissatisfy patients, medical staff and physicians, while increasing health care costs, reducing potential income and adversely affecting clinical outcomes. Patients experience long waiting times in the health care continuum in two major areas:

1. In waiting for access to an appointment in primary care;
2. In the medical office waiting for access to specialty care once the primary care physician has decided to refer the patient.

Referral process itself is often cumbersome and confusing for patients and physicians alike. Patients are often informed that they will be "referred" but have little or no influence on the process nor will knowledge about who they will be referred to or how long the expected wait be. This, in turn, leads to increased use of unnecessary laboratory tests and services, spreading inefficiency, waste and dissatisfaction throughout the health care system.

An access problem such as this represents a delay between the initiation of the demand and the application of the supply. The goal in any system is to balance the demand with the supply. When this balance is achieved, waiting times can be eliminated. If this balance cannot be achieved, waiting times will continuously extend or will reach a point of equilibrium based on patient dissatisfaction. Finally, the delay is dissatisfying to family physicians because of fears about patient's clinical outcomes deteriorating and frustrations with the referral process.

For the referral process to be streamlined and to ensure smooth operation, ease of communication between the different Specialities involved in the process is crucial. Communicating patient information at the time of specialty referral is essential to high-quality consultation and coordinated, safe patient care. Both primary care and specialist physicians value this information exchange for shared patients.

Referral has considerable implications for patients, the health care system and health care costs as they are the link between physician and the specialist. Communicating patient information at the time of specialty referral is essential to high-quality consultation and coordinated, safe patient care. Facing the problems with patient referral networks is the first step towards solving those problems and making the entire system a more effective platform for medical staff, patients and physicians alike.

REVIEW OF LITERATURE

“The study on improving referral communication using a referral tool within an electronic medical record has been done by Tejal K. Gandhi, MD, MPH. They found that when PCPs used an electronic referral tool within an EMR, the chances that information would be communicated to specialists prior to the patient’s referral visit were three times as high as when PCPs did not use the tool. In addition, when the electronic referral tool was used, intervention patients were significantly more likely to report that specialists had received pertinent information prior to their visit and significantly less likely to have received conflicting information. Electronic referrals can facilitate the inclusion of decision support into the referral process. Practices also could track the reasons referrals are made to ensure standardization and appropriateness of referrals and to promote benchmarking and related quality improvement activities.” **Error! Reference source not found.**

“The study done by Ateev Mehrotra on Dropping the Baton: Specialty Referrals in the United State found that PCPs vary in their threshold for referring a patient, which results in both the underuse and the overuse of specialists. Many referrals do not include a transfer of information, either to or from the specialist; and when they do, it often contains insufficient data for medical decision making. Care across the primary-specialty interface is poorly integrated; PCPs often do not know whether a patient actually went to the specialist, or what the specialist recommended. PCPs and specialists also frequently disagree on the specialist's role during the referral episode (e.g., single consultation or continuing co-management).”**Error! Reference source not found.**

“Another Study to analyse Communication breakdown in the outpatient referral process was done by Gandhi TK and found that Substantial problems were present in the referral process. The major issues were physician dissatisfaction, lack of timeliness, and inadequate content of inter physician communication. Information obtained from the general survey and referral-specific survey was congruent. Efforts to improve the referral system could improve both ‘physician satisfaction and quality of patient care.’”**Error! Reference source not found.**

“The study on Challenges in referral communication between primary care and specialty care found that primary-specialty communication is a continuing challenge that varies by specialty and may be associated with the likelihood of an established connection already in place between specialty & primary care. Improvement in EMR systems is needed, with more flexibility for the

communication of special requests. Building relationships between PCPs and specialists may also facilitate referral communication.”**Error! Reference source not found.**

“The study done by Tejal K. Gandhi MD, MPH to evaluate primary care and specialist physicians' satisfaction with inter physician communication and to identify the major problems in the current referral process found that communication between PCPs and specialists during the referral process is often inadequate both in terms of quality and timing, physicians are dissatisfied with the process, and physicians identify several important barriers to communication including time required to create adequate notes and redundant processes. Communication needs to be examined in greater detail to determine ways to improve it. Potential strategies include automating referral communication and letter generation through computerized referral applications. We are currently in the process of developing this kind of system. Future studies will examine whether improving communication can result in better patient outcomes, patient satisfaction, and resource utilization. Systems that can facilitate referral communication are likely to make the process more effective for both physicians and their patients.”**Error! Reference source not found.**

RATIONALE

This Report is intended to find out the Time Taken by the Referral doctors to visit the patient whenever the Speciality Referral is given to the doctor by the primary physician in the Nephrology Department of Max Hospital, Saket as main goal is to provide finest patient care. The type of Referral which has been studied is Horizontal Referral. Referral process is one of the major contributing factors that adds to the complete care of the patients which they expect from the hospital. Reducing the Referral Time in the ICU's & wards can lead to significant increase in enhancing the hospital's image.

OBJECTIVES

General Objective - To Track the referral time of doctors and re-design the referral process at Max Hospital, Saket.

Specific Objective –

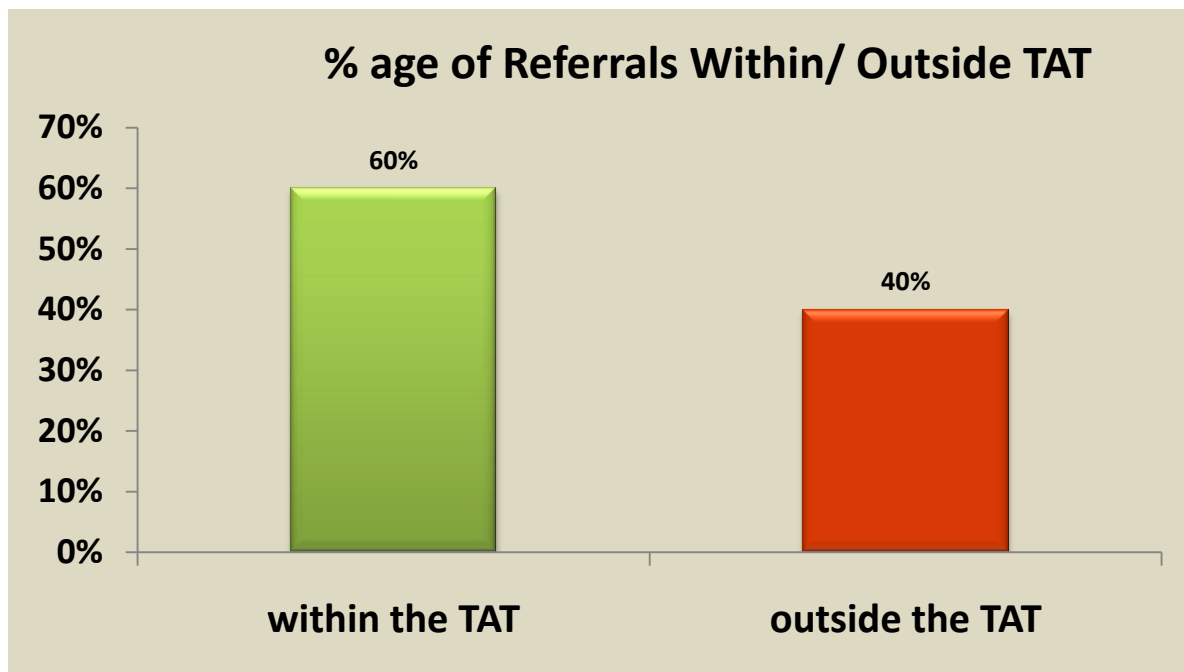
1. To observe and analyse the Referral Time taken by the Doctors to visit the patient & provide care to the Patient at right time.
2. To search for areas of problem and find reasons for the same.
3. To give recommendations for further improvement in the Referral Process.

RESEARCH METHODOLOGY

- **Type of study** : Analytical cross-sectional
- **Study population** : Doctors at Max Super Speciality Hospital, Saket, Delhi
- **Study area**–6th Floor, West wing, Nephrology Department & Medical ICU Max Super Speciality Hospital, Saket, Delhi
- **Duration of Study**– 3 Weeks
- **Type of Data**- Quantitative
- **Technique**– Direct Observation of Operations
- **Sample size** – 100
- **Sampling technique**- Non probability sampling
- **Data collection**-Primary and Quantitative (3 weeks)
- **Data entry**- Manually
- **Data Analysis**- Using bar charts, pie charts in Microsoft Excel

DATA ANALYSIS& INTERPRETATION

FIGURE 1



INFERENCE: The figure reveals that 60% of the Referral doctors consulted the Inpatient within Turn Around Time depending upon the urgency whereas 40% of the Referral doctors didn't visit the patients at the right time so as to provide care to the patients in the Nephrology Department (West wing) at Max Super Speciality Hospital, Saket. The TAT criteria taken for the Referral process is

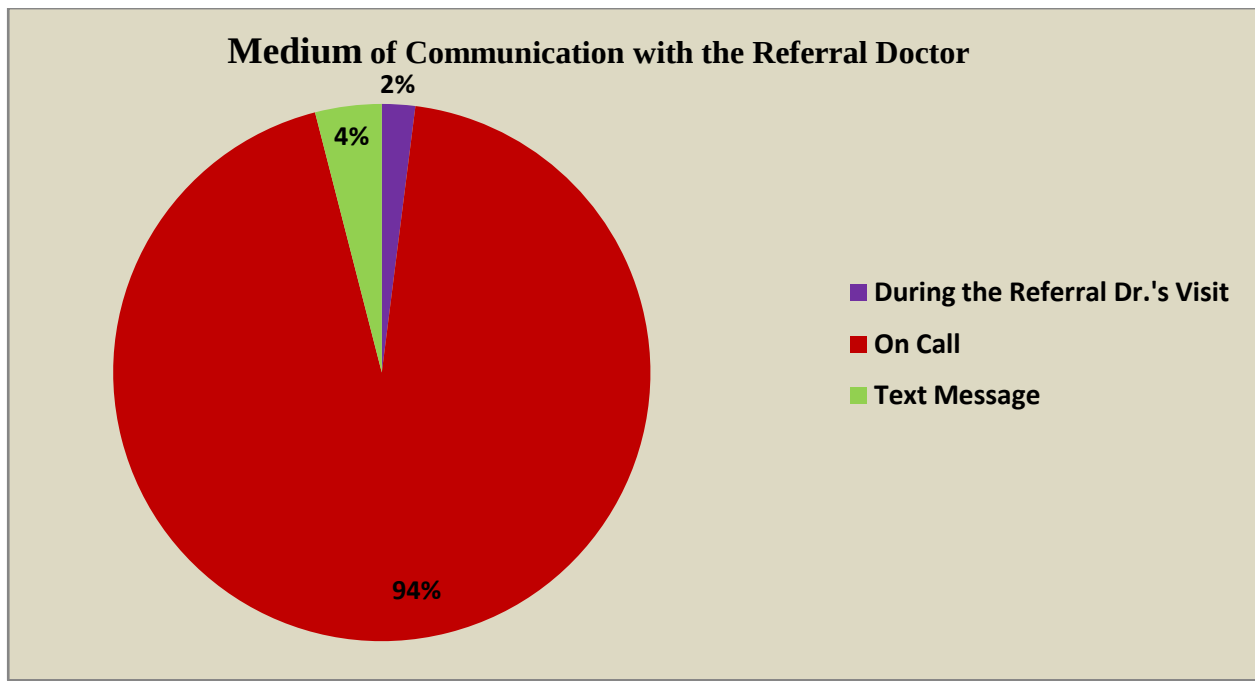
	INDEX	
A1	Referred by Senior consultant	To be seen within 1 Hour
A2	Referred by Resident Doctor	To be seen within 1-2 Hours
B1	Referred by Senior consultant	To be seen within 4 hours
B2	Referred by Resident Doctor	To be seen within 4-6 hours
C	Referred by The Junior Resident	To be seen within 24 hours

FIGURE 2



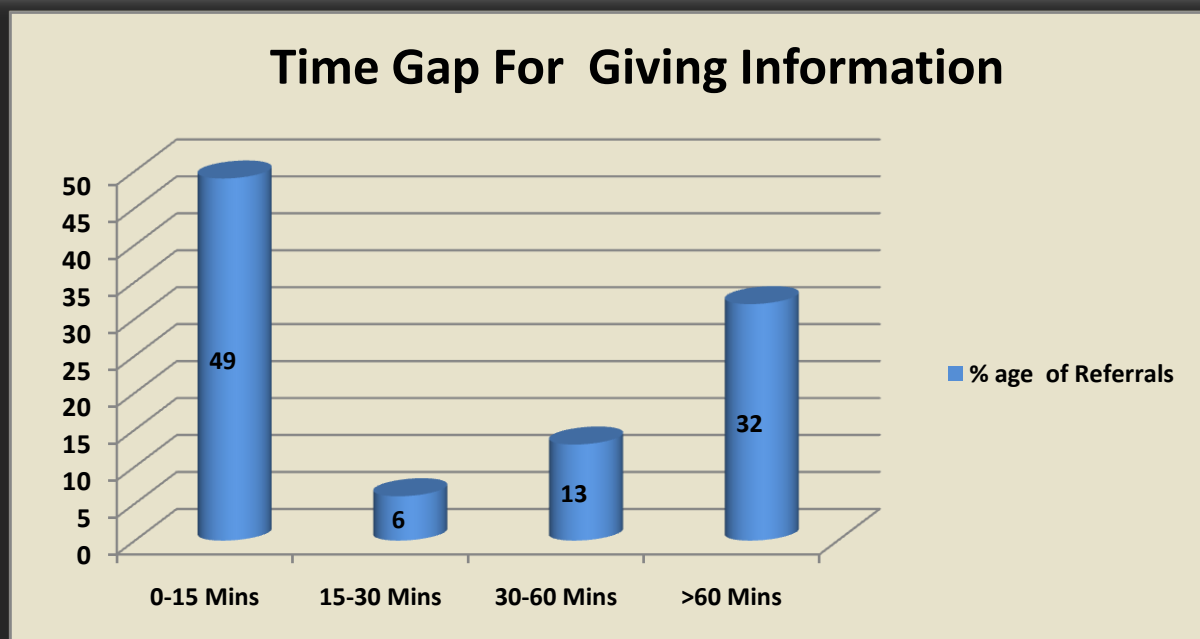
INFERENCE: The figure depicts that out of the four main reasons of delay of Referral Doctors, most of the delays occurred because of the delay in giving the information, i.e., (57%). In 24% of the cases, there was delay in Referral Dr.'s visit to the Patient & in **16%** of the cases Referral Dr. didn't visit the patient. The Standard time for giving the information to the Referral Dr. is assumed to be 10 Minutes.

FIGURE 3



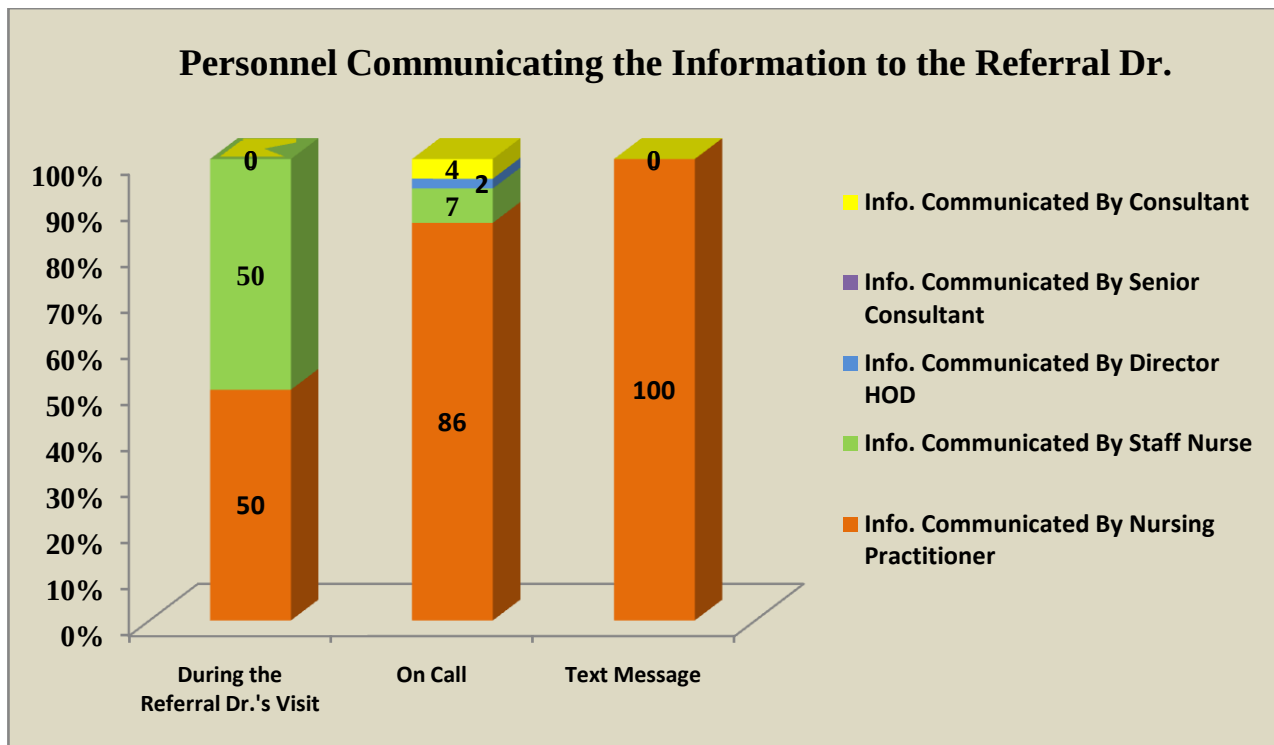
INFERENCE: The figure shows us that the 3 modes of communicating the information to the Referral doctors were used, among which 94% of the information was communicated through the phone call; 4% via text messages and 2% during the Referral Dr's visit to the other Patient.

FIGURE 4



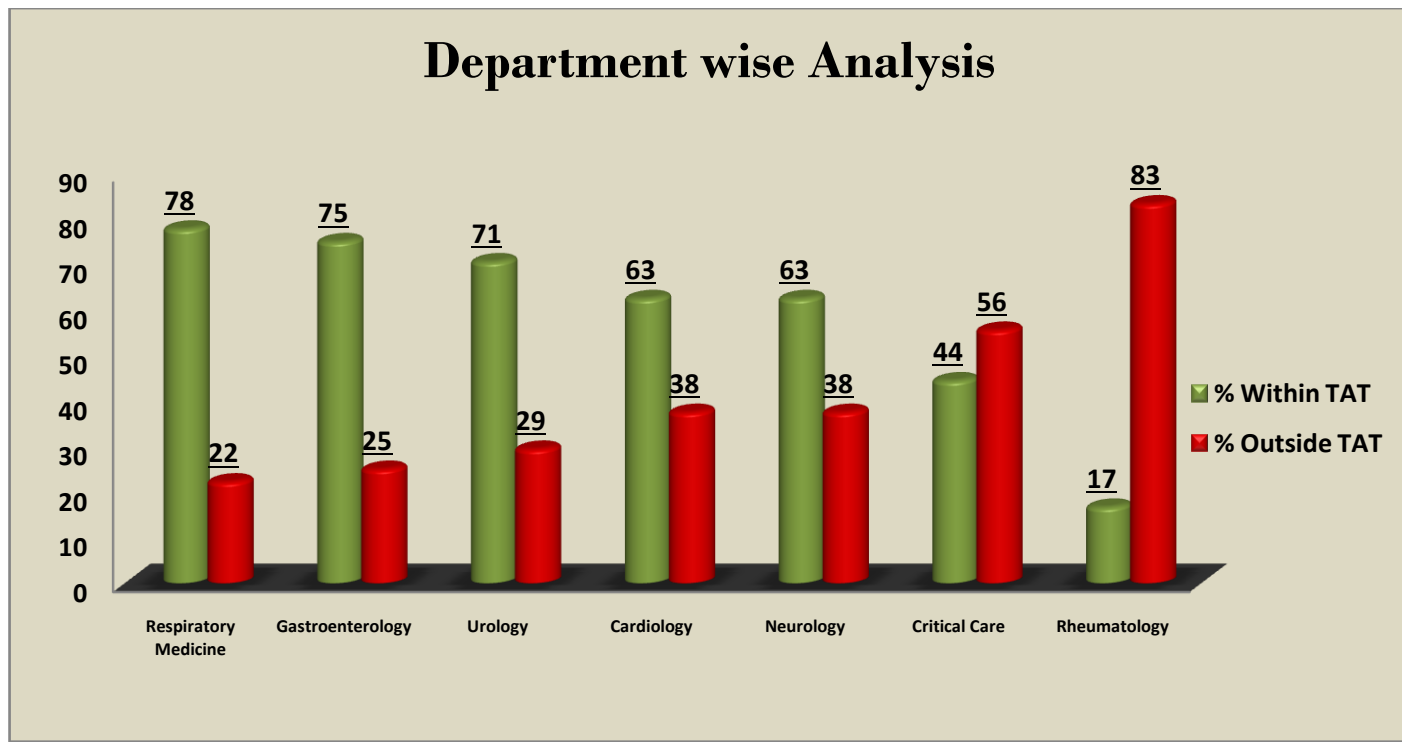
INFERENCE: The figure shows us the Time Gap is categorised in 4 ranges in which the Referral Information was given to the doctor. 49% of the information was given within 15 minutes of the Referral followed by 6% in 15-30 minutes, 13% in 30-60 Minutes and 32% of the Referrals were given beyond 60 minutes.

FIGURE 5



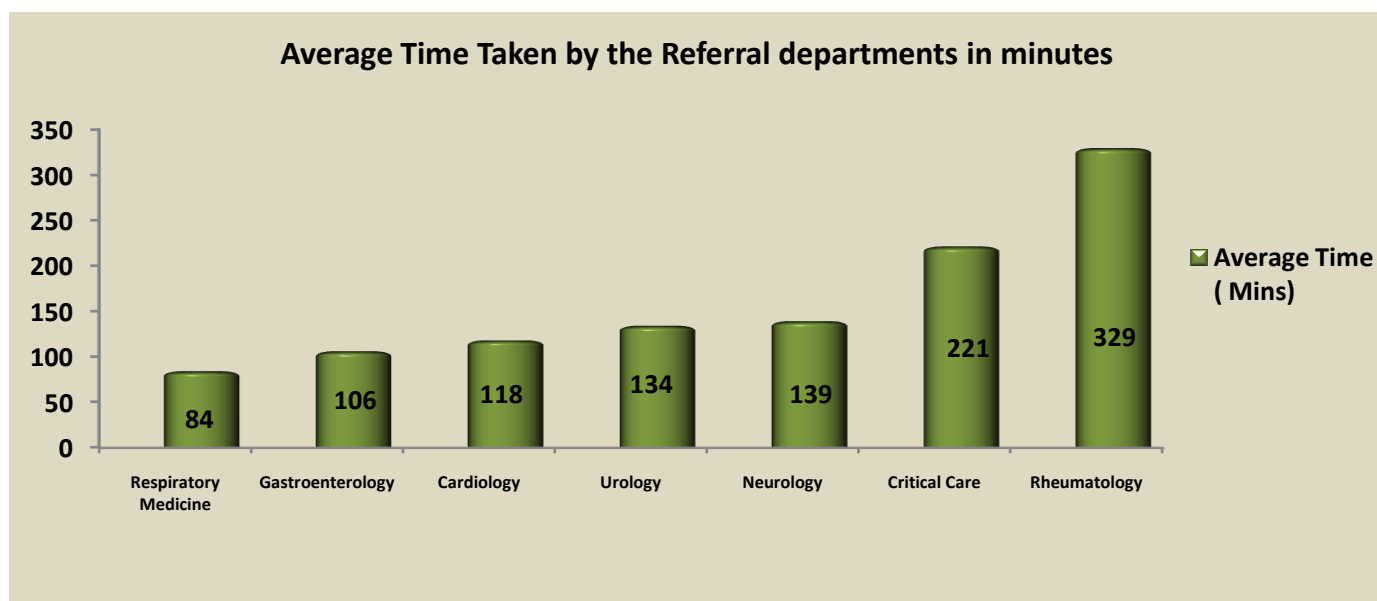
INFERENCE: The figure clearly shows that among the Personnel Communicating the information to the Referral doctor most of the information was communicated by the Nursing Practitioner (50% - During the Referral Dr.'s visit; 86% - On the call & 100% via text message) followed by the Staff Nurse (50%- During the Referral Dr's visit & 7%- On the call). No Information was given by the Senior Consultant.

FIGURE 6



INFERENCE: The figure illustrates Top 7 Referral Departments comparing the percentage of referrals within and outside the TAT of the respective department. It is clearly visible that **83%** of the **Rheumatology** Referrals were outside the TAT followed by the **Critical Care** Referrals in which **56%** of the Referrals were outside the TAT. The Department of **Respiratory Medicine** has the highest percentage (**78%**) of Referrals within the TAT.

FIGURE 7



INFERENCE: The figure illustrates the average time (in minutes) taken by the Top 7 Referral Departments in the hospital referred by the Nephrology Department. The minimum Average time was taken by The Respiratory Medicine Department (84 minutes) and the maximum Average Time was taken by The Rheumatology Department.

OBSERVATIONS & FINDINGS

- The major reason for the delay in visiting of Referral Doctor is the Delay in giving the information to the Referral Doctor
- The Rheumatology Department takes the maximum Referral time to visit the patient.
- Most of the Referral Information is given by the Nursing Practitioner.
- In few of the cases (16%), the Dr didn't visit the patient.
- The Top 7Referral Departments were :
 1. Urology
 2. Gastroenterology
 3. Critical Care
 4. Respiratory Medicine
 5. Cardiology
 6. Neurology
 7. Rheumatology
- Other Referral Departments were :
 1. Radiology
 2. Ophthalmology
 3. Oncology
 4. Minimal Access Surgery
 5. Endocrinology
 6. Gynaecology
 7. Haematology etc
- At times, Poor Communication was observed between the PCP & The Nursing Practitioner
- Many of the times Staff Nurse wasn't aware about the Name of the Referral Doctor who consulted the Patient.
- Language Barrier is one of the major problems between the Nurses & the Patients.
- Nurses were unaware of what was advised by the referral doctors until the doctor puts the notes in the CPRS.

CONCLUSION

It is imperative that all the doctors & nurses should know the Referral Process and its importance as in the hospital set up there is nothing more important than the patient care. From Initiating the Referral to its closure, every step has its own importance. Long waits and delays between primary care and specialty care are not only dissatisfying and inefficient, but also cause concerns about patients' clinical outcomes deteriorating. Small groups of primary care and specialty care physicians can work together to create referral agreements that rationalize the relationship.

An optimum referral process needs to be timely and to involve the patient. The process also needs to assist primary care physicians in getting the appropriate information to and from the specialist in a timely manner and ensure that the work-up is done appropriately. A referral process structured in the way mentioned above relieves the referral specialist from seeing a patient with an incomplete work-up, asking for the investigations again, and then seeing the patient back again, which results in more waits and delays in care. As supply and demand are brought into balance, patient waiting time for specialty care can be recalibrated at any level. This System would also stipulate the amount of time primary care physicians should expect to wait for the specialists to respond to their consult questions or to provide feedback on referred patients. With shorter waiting times for the Referrals to be completed patient satisfaction improves, physician satisfaction improves on both the primary care & specialty sides.

RECOMMENDATIONS

1. A new Referral System should be designed.
2. The system of categorizing the Patient's referral should be implemented depending upon the current health condition of the patient.
3. The proposed categorization is as follows –

Priority Level	Should be referred by	To be seen within
A1	Senior Consultant/ Consultant	1 hour
A2	Senior Consultant/ Consultant/ Resident Doctor	1-2 Hours
B1	Resident Doctor	4 Hours
B2	Nursing Practitioner	4-6 Hours
C	Nursing Practitioner/ Staff Nurse	24 Hours

4. While giving the Reference to the doctors, it should be notified as to which priority level the case belongs to.
5. Primarily, the case should be conveyed to the Referral Dr. by the Consultant or the Resident Dr.
6. Primarily, the Referral should be made through a phone call followed by a text message to the doctor.
7. The case should be explained briefly to the doctor so that if needed he would tell the prior investigations to be done before he visits.
8. In case the Referral doctor is busy or not available, the Referral should be passed to the other on duty doctor so that no delay occurs in the patient care.
9. A separate “Referral Sheet” should be made and attached to the Patient’s file which should be filled by the nurse & should include -

Patient’s Name-

Bed No.-

UHID No.-

S. no.	Name of the Referral Dr.	Department	Treatment/ Investigation Advised by the Doctor

10. Once the Referral doctor has visited the patient, a confirmation text message should be sent by the doctor to the primary care physician.
11. Resident Doctor/ Nursing Practitioner should review after few hours whether the Referral was completed or not.
12. The Referral Information should be given to the doctor within 10 minutes once the Referral has been made.
13. An audit should be conducted so as to determine whether the changes have actually improved the system.

Additional Recommendations

1. Nurses should be trained more not to communicate in languages other than English & Hindi as it leads to communication barrier between the Nurses, Attendants, Patients & the other Staff who don't know that language.

ANNEXURE 1.

1. [Referral time excel.xlsx](#)

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EARTHQUAKE EVACUATION PLAN

AT

MAX SUPERSPECIALITY HOSPITAL, SAKET



Institute of Health Management Research, Jaipur

DECLARATION

I do hereby declare that I am a student of 1st year, MBA in Hospital and Healthcare Management, IIHMR University, Jaipur, Rajasthan session 2015-2017.

I would like to state that I have made the “Earthquake Evacuation Plan” under the guidance of Dr. Neha Chandra (Assistant General Manager- Medical Quality) at Max Super Speciality Hospital, Saket, New Delhi for the partial fulfilment for the degree of MBA in Hospital and Healthcare Administration.

This project work is my own and has not been submitted to any of the other Institute or University for the purpose of award of any degree or diploma.

Ms. Bhavya Arora

IIHMR University

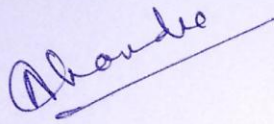
(2015-2017)

INTERNSHIP CERTIFICATE FROM MAX SAKET

This is to certify that Ms. Bhavya Arora, a student of IHMR - Jaipur PGDHM-20 has carried out a project on "*Making of Earthquake Evacuation Plan for Max, Saket*"

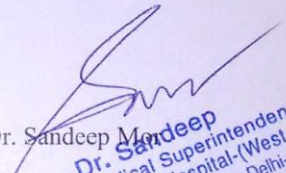
This project work has been prepared by the student herself with utmost sincerity and this work has not been presented earlier for any academic activity.

I wish her all the very best & success in her further future endeavours.



Dr. Neha Chandra

Assistant General Manager- Medical Quality
Superintendent



Dr. Sandeep
Deputy Medical Superintendent
Max Super Speciality Hospital-(West Block)
1, Press Enclave Road, Saket, New Delhi-110 017

ACKNOWLEDGMENT

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

I would like to acknowledge, First and foremost Dr. Neha Chandra (Assistant General Manager – Medical Quality) for showing confidence in me and giving me such a wonderful topic to do my project & Dr. Sahar Qureshi (Assistant General Manager- Operations), without her support and guidance it would not have been possible. Also I would like to thank Dr. Tanya Vaish (Medical Quality) whose support was very essential in the completion of my project. Then I would like to thank my mentor at Max Hospital, Saket Dr. Sandeep Mor (Deputy Medical Superintendent) for his guidance throughout my internship period. I would also like to thank Mr. Deepak Fansal (Vice President- Infrastructure) & Mr. Arjun Singh Rawat (Fire & Safety Officer) for his guidance, motivation and encouragement throughout the completion of Project. Also, I would like to express my gratitude to Dr. Ashish Tripathi (Assistant Manager- Medical Administration) as he has been a Great source of knowledge, information and inspiration to do work with utmost diligence and sincerity.

I would also like to thank Dr. Nalini Kaul (Medical Superintendent) without whose permission I would not get this golden opportunity to do my internship in this esteemed hospital.

I would also like to thank my faculty at IIHMR-Jaipur and specially my Mentor- Dr. Mohan Bairwa (Professor) and also feel privileged to acknowledge Dr. Priyanka Maini for being my support all through the internship.

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At the end, I am thankful to God and my heartfelt gratitude to my parents and friends who supported me throughout the course.

THANK YOU ALL

Bhavya Arora

Student,

IIHMR

(2015-2017)

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TOPIC : Earthquake Evacuation Plan for MAX Hospital, Saket
PURPOSE : To Evacuate the staff and patients safely from the hospital in the incidence of earthquake

INTRODUCTION TO EARTHQUAKE

An earthquake is a natural disaster, which can strike without warning and is capable of creating major destructive or disruptive damage to a hospital property. Scientists are focusing on the search for means of predicting impending earthquakes but, as yet, a completely accurate prediction of time and place of an earthquake cannot be made.

The actual movement of the ground in an earthquake is seldom. It is the direct cause of injury or death. Most casualties result from falling objects and debris because the shocks can shake, damage, or demolish building and other structures.

Training and increased preparedness are essential to survival both during and following the earthquake.

In every case the ultimate concern should be for the safety of our customers and employees, for that crisis management and emergency response team can handle the situation effectively.

The Pan American Health Organization (PAHO) and the World Health Organisation (WHO) defines Safe Hospitals as which

- Will not collapse in disasters, killing patients & staff
- Can continue to function and provide its services as a critical community facility when it is most needed
- Is organised with contingency plans in place and health workforce trained to keep the network operational

NEED FOR EMERGENCY EVACUATION PLAN

- The Hospital Emergency Evacuation Plan is intended to provide instructions, protocols and procedures that should be followed in case of any Emergency situation necessitating either a Horizontal (lateral), Vertical, Full or Partial evacuation of the hospital.
- The term "Emergency Evacuation" shall mean removal of patients, personnel, and visitors to areas deemed safer for as long as it may be necessary to decide further action.
- The evacuation plan has been framed to ensure safe evacuation of its occupants in an orderly and systematic way.

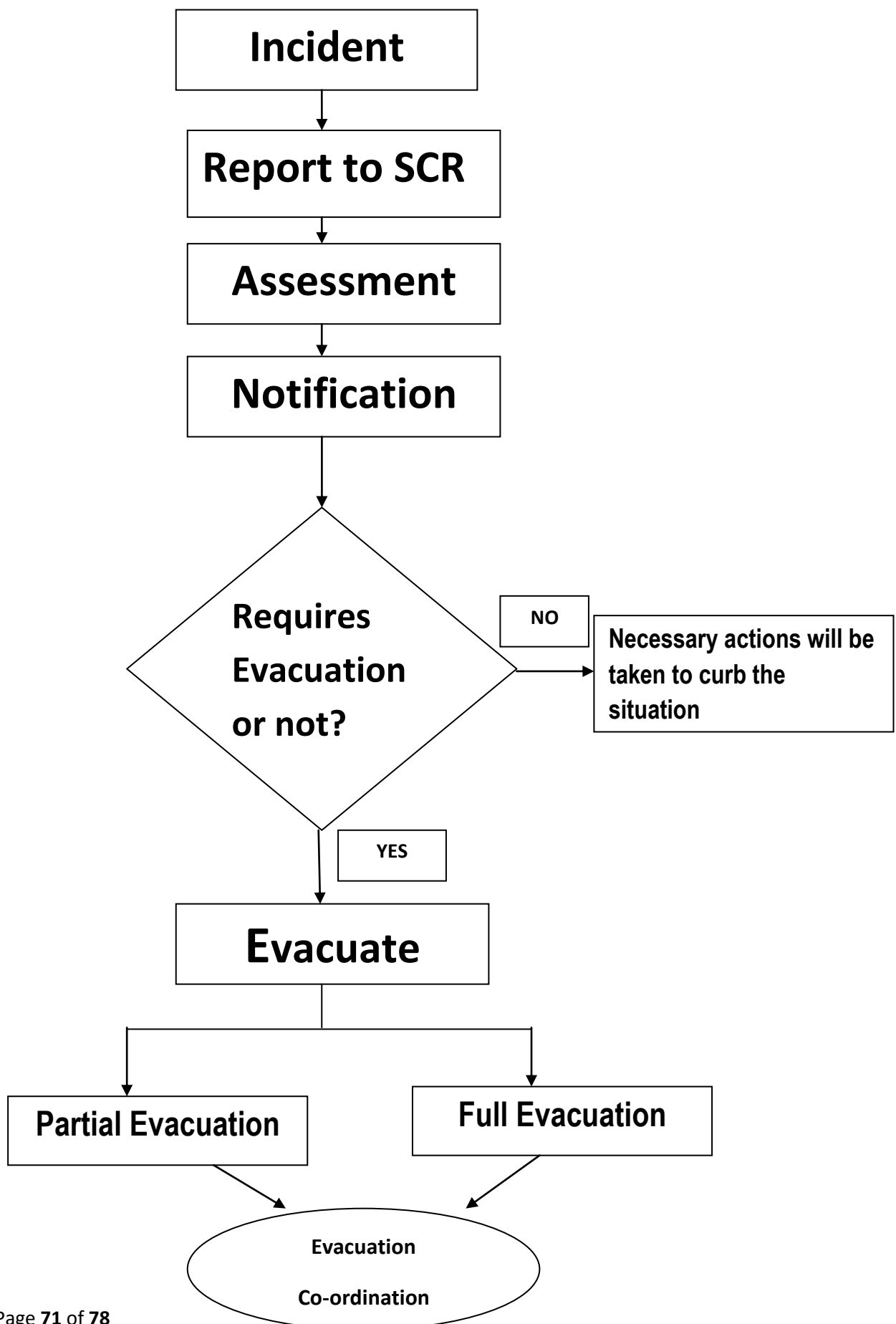
- It is important to formulate the planning advance and simultaneously ensure that all employees are informed regarding the same.
- It requires designating participants with defined duty, and then carries out drills to test and demonstrate the working efficacy of the plan

BEFORE THE EARTHQUAKE

There are many actions, which Disaster Management Committee should take to reduce the dangers from earthquakes to our customers, employees and property. The ERT team should thoroughly inspect the hospital and make certain that

- All gas-fired equipment is properly shut down since fire damage can result from damaged gas lines.
- Flexible piping connections are installed where practicable.
- Large and heavy objects are placed on the floor or lower shelves.
- Hold regular mock evacuation drills to provide the knowledge to ERT to avoid injury and panic during earthquake.
- Conduct training session for ERT in procedure to turn off Gas/electricity/water from all the service entrance into the building (prepare a diagram of water, gas and electrical cut off points.
- Conduct training session for employees about earthquake and other possible disasters.
- Prepare list of emergency telephone numbers which can be used in case earthquake emergency
- Obtain emergency supplies and determine how they will be distributed in the event of an earthquake.
- Determine who will assist critical patients
- Identify and plan auxiliary power supplies for areas critical to the operation of the hospital after an earthquake
- Identify several alternate customer relocation sites in case the hospital is severely damaged and should be evacuated.
- Train employees what to do to protect them during an earthquake

HOSPITAL EVACUATION DURING THE EARTHQUAKE:



1. **Incident-** On cession of the initial shock waves, the security control room Security personnel manning the SCR will immediately inform the ERT members and inform Crisis management committee. Disaster Management members should setup crisis command centre in Security Control room (Basement 1, east Block) or any suitable location.
2. **Call to the SCR-** In case, any other person in the hospital feels the initial shock waves, he/ she should first intimate to the SCR. The Engineering, Security & ERT gathers near the Control room.
3. **Assessment** - The hospital is then assessed by the Engineering team

- Fire & safety Officer and Team
- Security Manager and Team
- BME
- Housekeeping
- Emergency Department
- And other support services department

Emergency response team members and security staff should immediately be stationed throughout the hospital, on patient floors, Operation Theatres, ICU's, elevators, emergency Generator etc to protect and reassure customers and employees and to guard vital services. The emergency response team should check for injuries and the injured be shifted immediately to emergency. Emergency response team will check for Fire hazards.

4. **Notification-** Security personnel in the SCR will inform the call centre if possible to make public announcement immediately.

“ATTENTION PLEASE, WE ARE EXPERIENCING A EARTHQUAKE. GET UNDER A -HEAVY OBJECT OE TABLE IF POSSIBLE, OR DROP TO THE FLOOR AND COVER YOUR -HEAD. DO NOT RUN. REMAIN CALM. PLEASE AVOID WINDOWS AND HEAVY OBJECTS SUSPENDED FROM THE CEILING SUCH AS LIGHTS OR OTHER THINGS FALLING FROM THE CEILING.”

5. **Making the Decision** - After the assessment is done by the officials, the decision to evacuate is made by the Security head. In most emergencies, a full evacuation will NOT be required. Due to the complex needs and unstable nature of many hospital patients, evacuation is generally considered as a last resort. Evacuation should be ordered only when absolutely necessary, and when there is an imminent or potential, unmitigated threat to patient/staff safety.
6. **Authority to Order Evacuation** - An appropriate and available official must be vested with the authority to order partial or full evacuation of the hospital. This authority may rest to the Security Manager and the Administrator on- Call. In

many cases, however, the decision to evacuate is, in fact, not immediately obvious and may require input from a variety of clinical and non-clinical leaders. When time permits, hospitals may wish to consider creating an Incident command Nucleus team consisting of

- A. Director Operations
- B. Director- Medical Services
- C. Medical Superintendent
- D. Emergency Head
- E. Security Manager
- F. Engineering Head

7. Evacuation Notification- Once the decision is made; the full institution should be notified of the evacuation. The notification should include

A. Level of Evacuation -

- Horizontal Evacuation
- Vertical Evacuation
- Partial Evacuation
- Full Evacuation

Call centre personnel will contact all the HOD's and CMO to provide manpower to the affected area and assembly area. In case of Full evacuation, floor evacuation would be done Priority Wise. The motive is to evacuate MAXIMUM lives in minimum time.

B. Evacuation Time Frame- The time frame for evacuation may be different depending on the nature of the threat and how much time can be taken to prepare for moving patients. See the chart below for specific hospital orders that may be used

Immediate: No time for preparation – evacuate immediately

Rapid : Limited time for preparation (30 minutes) – everyone out in 1 hour

Gradual: Extended time for preparation – evacuation to occur over 2 hours

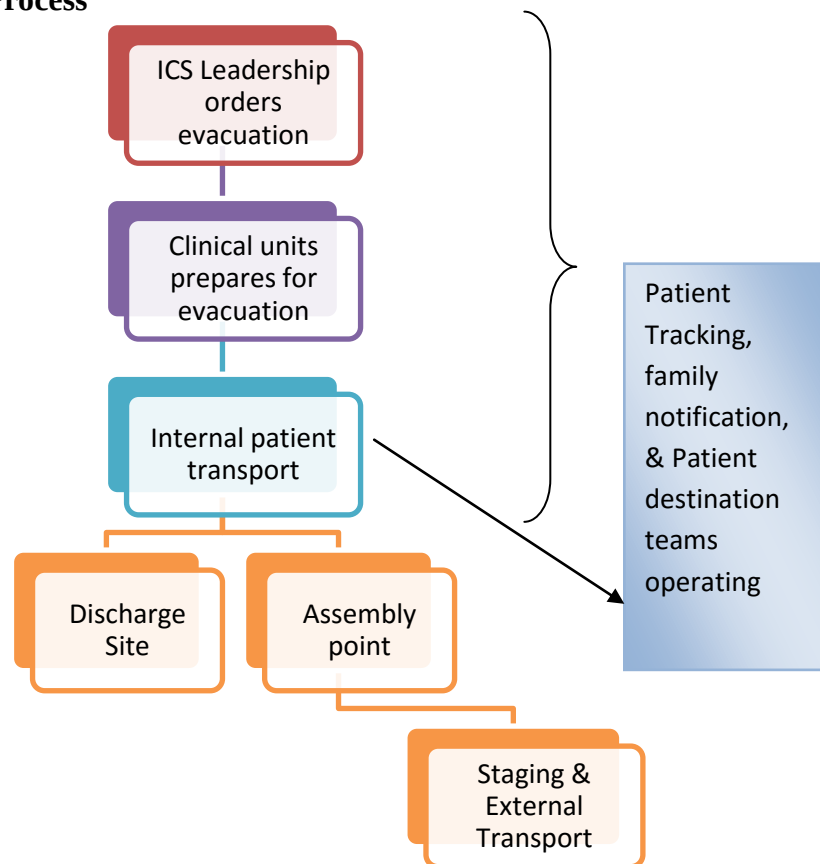
Prepare Only: Do not move patients, but begin preparation for evacuation

C. Patient Prioritization- In any evacuation that is severely time-sensitive, where there are immediate and broad threats to life safety, the priority must be to get as many patients out as possible. Therefore, the acuity model may be adopted requiring patients needing the most assistance to be the last to move. The default priority in these situations may be:

- Patients in immediate danger
- Ambulatory Patients
- Patients on general care units requiring transport assistance
- Patients on intensive care units

- D. Assembly Point Locations-** the Hospital has separate safe assembly points for both the building (east and west). The Safe Assembly point for East building is the ambulance Parking Area adjacent to the Emergency Department and for the West building it is near the Mortuary.
- 8. Evacuation Co-ordination** – Upon receiving the order to evacuate or prepare for evacuation, the Unit Leader should be prepared to discuss with their Evacuation Coordinator to help the hospital effectively prepare for evacuation. There is a PPE box at Every Floor which consists of Evacuation chairs, stretchers, helmets, blankets, Smoke Face Mask and other safety equipments. With the help of those equipments, the staff with the help of ERT team should evacuate the patients using Fire Exits (Stairs).

Transport Process



- 9. Patient Tracking-** During an evacuation emergency, a functional internal patient tracking system, even if simple and paper-based, is crucial to provide clinicians, families and leaders with situational awareness of the appropriate location and status of all patients throughout the event. A system that reports selected “check-in” and “check-out” data for patients at various touch-points in the process is ideal. Admitting will create a detailed inpatient census at the time of the evacuation order to provide accountability for all inpatients in the facility at the time of the order. Patients will be tracked upon arrival at either the Assembly Point or the Discharge Site. In addition, each Unit Leader will use their Patient

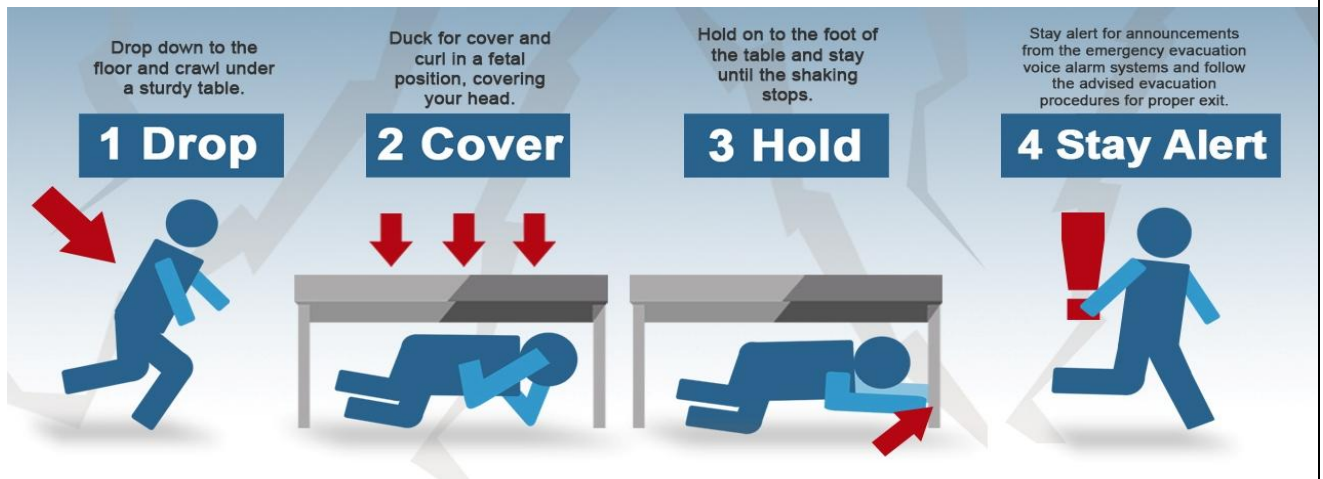
Tracking Log to verify that all of their patients arrived at the Assembly Point. Admitting will track all patients who leave the hospital campus at the Discharge Site and Staging Area.

SOME ADDITIONAL RECOMMENDATIONS

- During/ after an earthquake all hospital employees and customers/patients should be urged to remain calm.
- As we are in a high-rise building do not dash for exit, since staircase may be broken, may be obstructed by broken material.
 - If in a crowded place, do not rush for a doorway since hundreds may have the same idea. If you should leave the area, choose your exits as carefully as possible.
 - If possible move to an open area away from all hazards.

HOW TO SAFEGUARD WHILE EARTHQUAKE DISASTER





EARTHQUAKE SAFETY



RECOMMENDATIONS

1. Education and training of the staff of the hospital about the plan and specific roles of each staff member in case of a disaster.
2. A presentation made to all administrators, department heads and managers regarding the implementation of the Hospital Disaster Plan into the facility's emergency response plan will help solidify support in all areas of the hospital.
3. Table Top Drills should be done which is as paper drill intended to demonstrate the working and communication relationships of functions found within the disaster organizational plan. The exercise is intended primarily for the administrators, managers and personnel who could conceivably be placed into an officer's position upon activation of the disaster plan.
4. A Ramp should be constructed in the hospital to assist easy transport of patients while experiencing a disaster
5. Posters should be hung on the walls at each floor to let the patients, attendants as well as the staff know how to protect themselves when the earthquake occurs
6. The PPE cabins should be placed on each floor such that they are easily accessible.

7. The Fire Exit location Posters should be placed such that they are noticeable and easy to understand.

CONCLUSION

It is important that the staff knows how to handle the disaster situation without creating any panic and harm to the lives. So, the regular mock drills for disaster management should be created so as to impart knowledge to the staff about the evacuation plan in case of disaster situation.

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