# Internship
# at
# Max Super Specialty Hospital,
# New Delhi

***By***

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Dr. Sahil Thakur

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## ABOUT THE ORGANIZATION

**Aster Medcity: One of India's Most Advanced Healthcare Destinations**

One of India's most advanced healthcare facilities, Aster Medcity combines the best talent and technology to provide holistic treatment. Set in a 40-acre waterfront campus in Kochi, Kerala, Aster Medcity is a 670-bed quaternary care facility with one Multispecialty Hospital and nine Centres of Excellence in Cardiac Sciences, Neurosciences, Orthopaedics & Rheumatology, Nephrology & Urology, Oncology, Women's Health, Child & Adolescent Health and Gastroenterology & Integrated Liver Care and Multi-Organ Transplant.

Patient-centric in terms of design and philosophy, Aster Medcity lives by its simple promise: We'll Treat You Well.

The first JCI (Joint Commission International) accredited hospital in

Kerala, Aster Medcity is the first in India to receive all relevant accreditations/certifications within one year of opening its doors to the world.

In addition to the JCI accreditation, this includes the NABH accreditation,

Green OT certification, ISO 9001, ISO 22000 and the first ever NABH award for nursing excellence.

Aster Medcity has an outstanding team of doctors who take time out to listen to patients carefully, understand their problems holistically and recommend the best way forward. Multidisciplinary in approach, they provide optimal, evidence-based treatment to patients with the help speciality-trained nurses, paramedics and technicians.

The departments at the Multispecialty hospital include Internal Medicine, General Surgery, Aesthetics & Plastic Surgery, Pulmonology, Podiatry, Craniomaxillofacial Surgery, Dentistry, ENT, Ophthalmology, Dermatology, Psychiatry, Infectious Diseases & Infection Control, Clinical Imaging & Interventional Radiology, Nuclear Medicine, Anaesthesia & Critical Care and Emergency Care.

Aster Medcity has integrated Ayurveda into its fold. The traditional system of medicine that originated in India 5000 years ago, Ayurveda helps achieve physical, mental and spiritual wellbeing in a completely natural way.

One of the most technologically advanced hospitals in India, Aster Medcity offers a comprehensive range of diagnostic and therapeutic technology to facilitate accurate diagnosis and efficient treatment.

This includes

South Asia's first OR1 Karlstroz Operation fusion integrated Operation Theatres with autopilot anaesthesia

India's first flat panel bi-plane vascular hybrid Cathlab

India's first robotic pharmacy

South India's first ICCA (IntelliSpace Critical Care and Anaesthesia) ICUs & 135 independent ICUs with a view

Kerala's first da Vinci Robot for Minimally Invasive Robotic Surgery

Kerala's first True Beam Linear Accelerator for high-precision radiotherapy

Kerala's first fourth generation Time of Flight 16 Slide PET CT

The first hospital in Kochi to introduce First Responder Service on motorbikes to ensure faster, on-site medical assistance during emergencies, Aster Medcity will launch its Integrated Emergency Services comprising Water Ambulance and Air Evacuation soon.

Aster Medcity is the flagship initiative of Aster DM Healthcare, a global healthcare group with 291 medical establishments across 9 countries including India, Africa and the GCC.

## Process in Departments

## Front Office

- On Patient's first visit a card is generated with the name, photograph and UHID number that will be used by the patient for all the activities during the hospital stay. The same card will be valid in other Aster hospitals.
- Walk-in & Appointment patients come to the OPD area.
- 100/- one time charge for the card is taken and 200/- for consultation charge is taken.
- Follow up Patient within 14 days are given free consultation.
- Specialties offered at Core-OPD –
    - Pulmonology
    - Internal Medicine
    - Dermatology
    - Pain and Palliative
    - General Surgery
    - Plastic Surgery
    - ENT
    - Psychiatry
    - Craniomaxillary
    - Dental
    - Ophthalmology

➨ There are separate OPD's for the COE.

➨ OPD timings –

(Monday – Saturday)

- Morning (8:00 am to 4:30 pm)

- Evening (4:30 pm to 7:30 pm)

(Sunday)

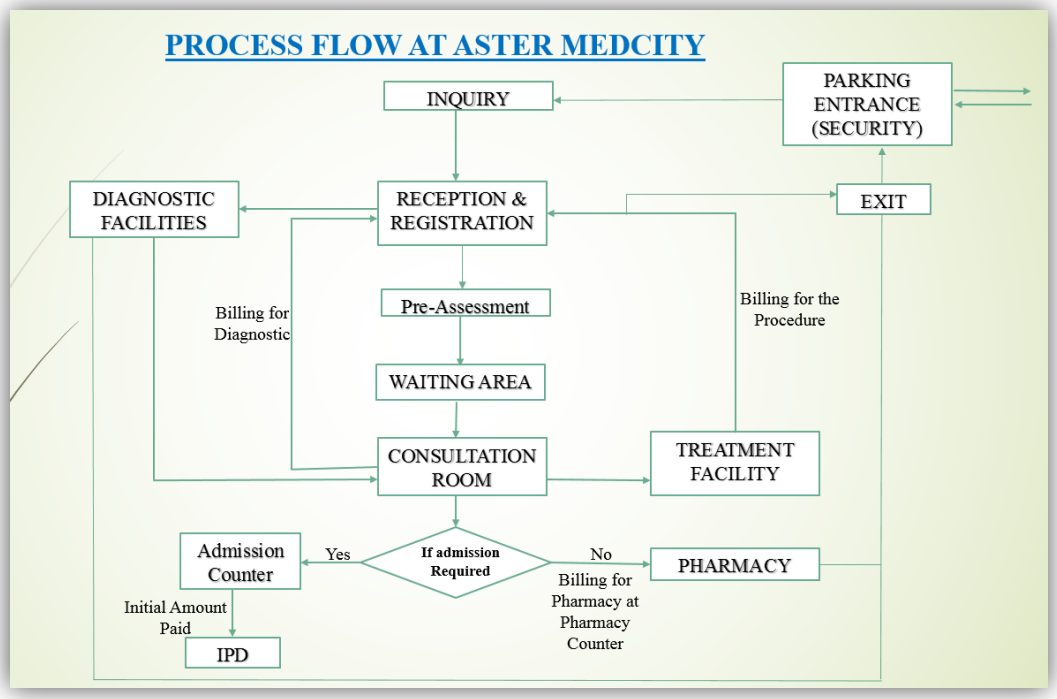
- Morning (10:00am to 1:30 pm)

- Manpower :

  Asst. Manager

  3 Receptionist in the Morning OPD

  2 Receptionist in the Evening OPD




## Good Touch Points

- The Receptionist greets the patient with a smile.
- The front office informs the patient about the billing breakup of one time registration fees for the card and consultation fees.
- Proper guidance to the patients are given to where to approach next i.e.. To go to pre-assessment area and which consultation room to approach next to the assessment.
- Instrumental music played that is soothing.

## Concerns

- Most of the patients go to only counter 1 and 2 as due to crowding the view of 3rd counter of the front office gets blocked out.
- Not sufficient signage's to guide the patient to desired location.
- The displayed information on the screen regarding the consultation rooms and doctor is not updated. Patients look up to the displayed information and gets confused and approach the front office regarding the same.
- Patients complains frequently of the long waiting time.
- No water facility for the patients in the waiting area.
- Patients are not able to locate the facilities.

**Suggestions**

- The registration counter can be effectively used if signage boards are placed to mention 3 counters.
- Need to engage patients because of the long waiting time.
- The OPD is known as the "shopping window" so can market our offered services.
- Coordinators can inform patient about the delay in appointments.

## Guest Relations

- "Advocates of the patient"
- The guest relations fill in the gaps where the patient in uncomfortable and making their stay pleasant in the hospital.
- The department works both with for the IPD as well as the OPD patients.
- Feedback is taken in 2 ways :
- 1.Verbal Feedback (Daily Rounds)
- 2.Written Feedback Forms (Prior to Discharge)
- The guest relations executives collects the feedbacks from all IPD's on different floors and Day care Centre's.
- A ticket is generated to the concerned department if any major complaint is raised by the patient and the concerned department need to close it within 24 hours.
- On daily basis the information is entered into the FMS system i.e. Feedback Management System.

- Once the patient gets discharged the guest relation executive calls the patient within 36 hours for the telephonic feedback.
- The patient can make call Number 9 from any nursing station/room for all the non-clinical services.
- Every Evening a GRE report is prepared for the daily status.
- Manpower: 6 GR executives headed by an Assistant Manager.

**Good Touch Points**

- The GR executives talk in detail to the patient about their experience and tries to solve problems as soon as possible.
- Educates the patient as well about the wellness programs.

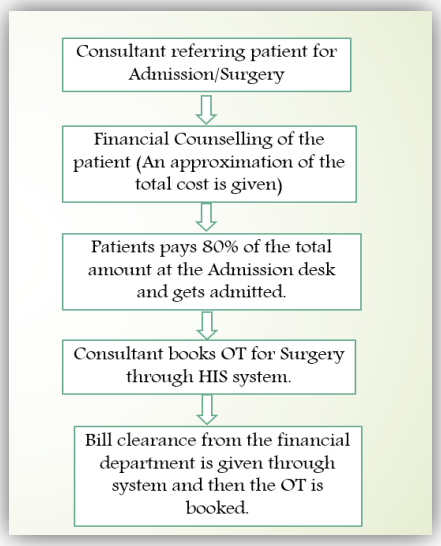
**Concerns**

- There are difficulties in getting feedback from the OPD patients.
- Major complaints are from the F&B department & Maintenance Department.
- The departments are not closing the complaint within the time limits.

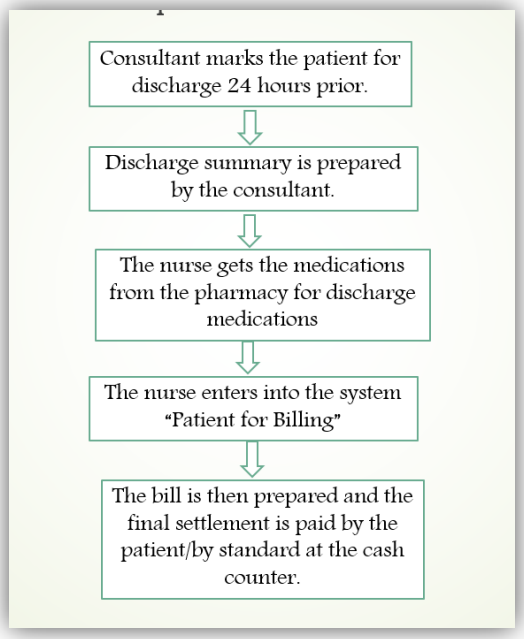
**Suggestions**

- To collect feedback from the OPD patients we can place feedback boards on the walls.
- The feedback system can be collected through tabs, saving time and efficient use of the manpower and effective results.
- A study can be conducted by recording the daily feedback from the patient and calculating his/her experience changes during the stay in hospital.

## Billing




**Process Flow after the patient has been marked for discharge**




- In Emergency cases if the patient is unable to pay the amount at that instance a promising note/consent form is undertaken that he will pay the amount next day.
- In some cases if there is a need of special discount the assistant manager may discuss the case with the COO and after his permission a discount can be given.
- The patient can pay the final settlement on the moving counters at different nurse stations.

- If the outstanding amount is greater than 20,000/- the patient is informed about it and a payment has to be made.
- Manpower: There are 27 people in total who work in Morning, evening and night shift; headed by Assistant Manager.

**Good Points**

- The billing team is proactive in handling the billing issues.
- The patient is counselled well and given options so that he/she can opt what is best suitable to his/her budget.

**Concerns**

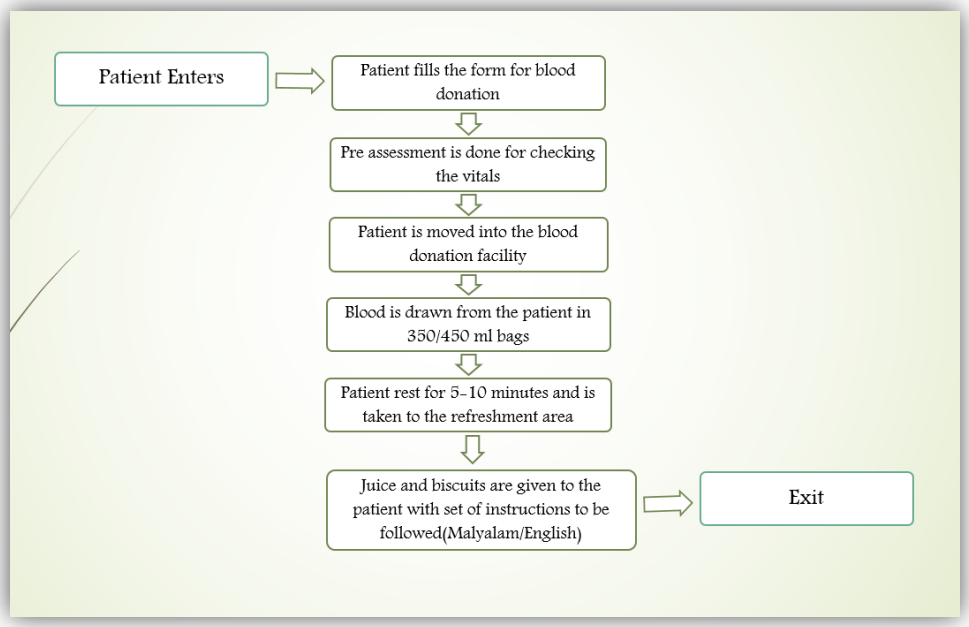
- Delay in discharge and making the final bill because discharge summary is not in time.
- Acknowledgment is not received by the billing team on time from different departments e.g. Radiology that hampers the process and causes delay.
- Sometimes a surgery is performed but the billing team is not informed.

**Suggestions**

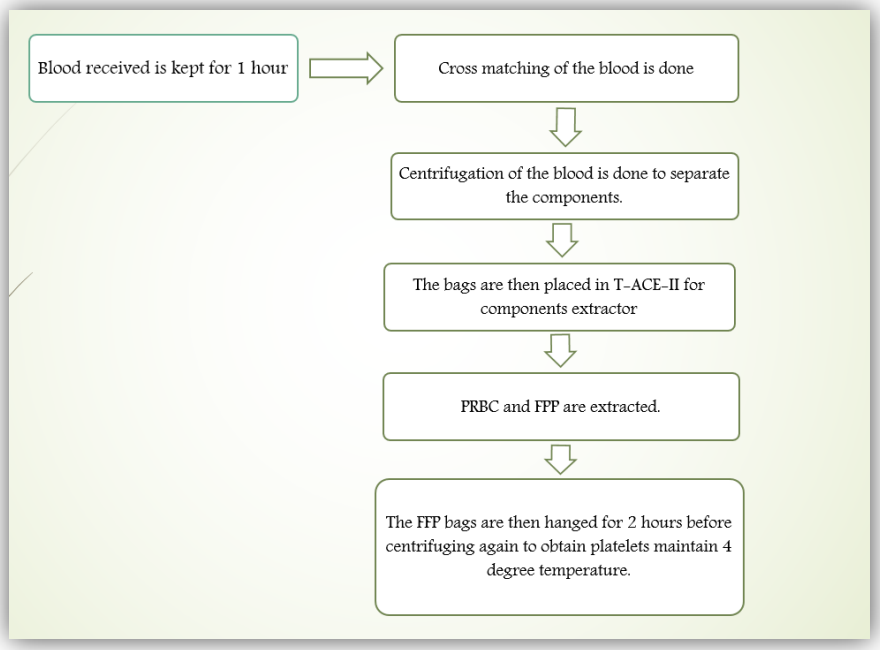
- When the patient is marked for discharge one day prior, on the same day the nurse can get the discharge medications and all the concerned departments can assimilate the information so the discharge process can fasten.
- The coordinators of the consultant can help in fastening the discharge summary process after round visits by slotting a time for preparing discharge summary. E.g. 15 minutes after rounds the doctors need to prepare the discharge summaries for the following day because after the discharge summary it will take an approximate time of 1.5-2 hours for patient discharge.
- It will also help to fasten the admission process because the discharges will be on time.

## Blood bank

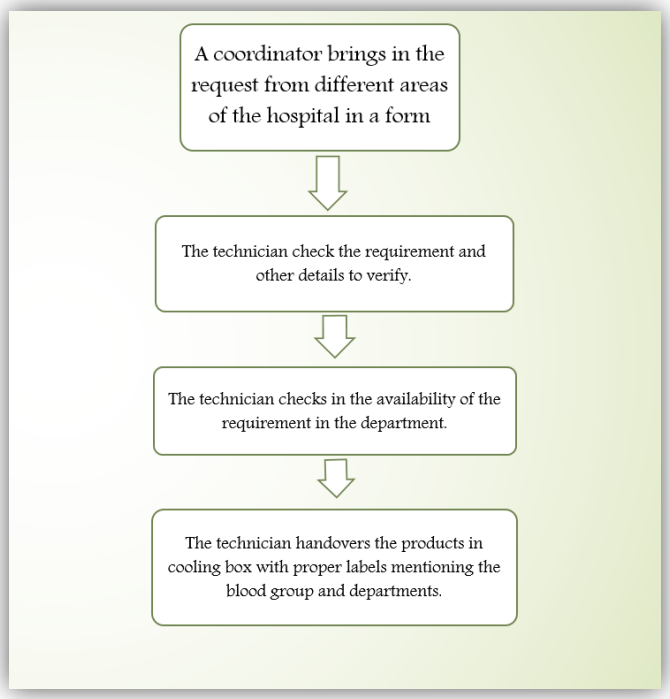
Process Flow for blood donation




Process Flow for Technicians




Process for Issuing Blood




**Key Points**

- Patients above 18 years and weight >50 kg's can only donate blood.
- Patient can donate blood according to weight i.e.

>50 kg &<=55kg 350 ml Blood

>555kg 450 ml Blood

| Components | Temperature to be maintained | Expiry of the Product |
|---|---|---|
| Packed RBC | 2-6 degree Celsius | 35-42 days |
| Platelet Concentrate | 20-24 degree Celsius | 5 days |

| | | |
|---|---|---|
| Fresh Frozen Plasma | -40 to -80 degree Celsius | 1 year |

- PRBC are given in case of Anemia.
- FBB is given in case of Clotting.
- Platelets are given in case of bleeding.
- Irradiated Platelets are also given which are first sent to LINAC before issuing.
- Cryoprecipitate is prepared from Fresh frozen plasma at 4 degree Celsius in centrifuge.
- 5 tests are conducted in the blood bank –
    - Cross Matching
    - HIV
    - HBsAg
    - HCV
    - Malaria + Syphilis
- The blood is given by following FIFO (First in First out)
- The blood bags that expire are discarded by autoclaving followed by disposing in Red Bags.
- Records are maintained in the department using file system.

**Concerns**

- Only 300-400 donors come for donation for blood and most of them are In-Patients Bi-Standards.
- Technical manpower shortage which increases the workload for the remaining staff and can cause errors.
- Employee retention is a problem as the workload is high. The staff talked about work life balance difficulty.
- Gloves used for working are used on the keyboards as well.

**Suggestions**

- Organization of blood camps to encourage blood donation e.g. Azad Moopen's Blood donation camp.
- Recruitment of technical staff to balance the workload and minimizing errors.

- Records can be kept in as e-file in the system reducing paper wastage.
- Colour labelling badges for different Blood Groups helping in easy identification.

  E.g.

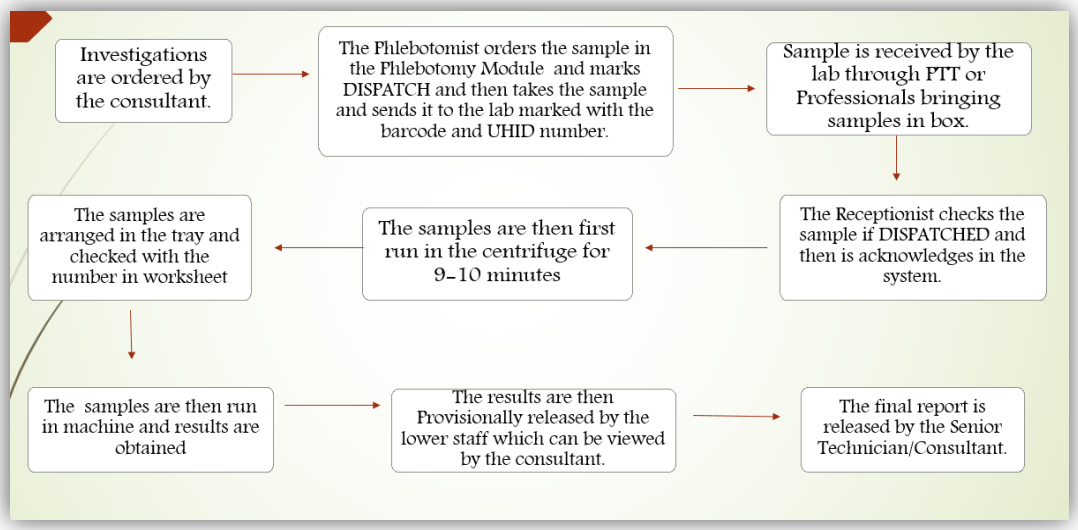
  O - Blue

  A - Yellow

  B - Pink

  AB –White

## Laboratory




### Key Points

- The lab receives in a daily of 400-500 biochemistry and Haematology samples and 35 Microbiology samples.
- The staff works hard and try to perform tests ASAP.
- The final report is send to the OPD area and then a print is given to the patient.
- The barcode generated by the phlebotomist contains the LAB no, type of test to be conducted.
- Lab number differ on the basis of type, order time and department.
- Few tests are not tagged into the Lab HIS so the technician uploads it manually. E.g. Direct and Indirect Bilirubin.
- Panic values of the patient are communicated to the concerned department immediately through telephone before the release of report and are recorded in lab registers.

- The staff works in 3 shifts.
- The TAT for the lab report is 3 hours and in cases of STAT it is 1 hour.
- The STAT orders are marked so the TAT is maintained of 1 hour.
- Troponin / CkMB tests are treated as STAT without asking.
- There is a total of 27 manpower working in 3 shifts.
- The machines are rested during night (11pm to1am) and calibrated also during the night hours between 1am and 4 am.
- Some tests are outsourced by Lal Path Labs and other labs and samples are received by the representative in morning and evening.
- Baby vials are marked as Red and Rest samples yellow to minimize error.
- The samples are kept in the Lab for 3 days and then discarded but according to NABL it should be kept for 1 day only.

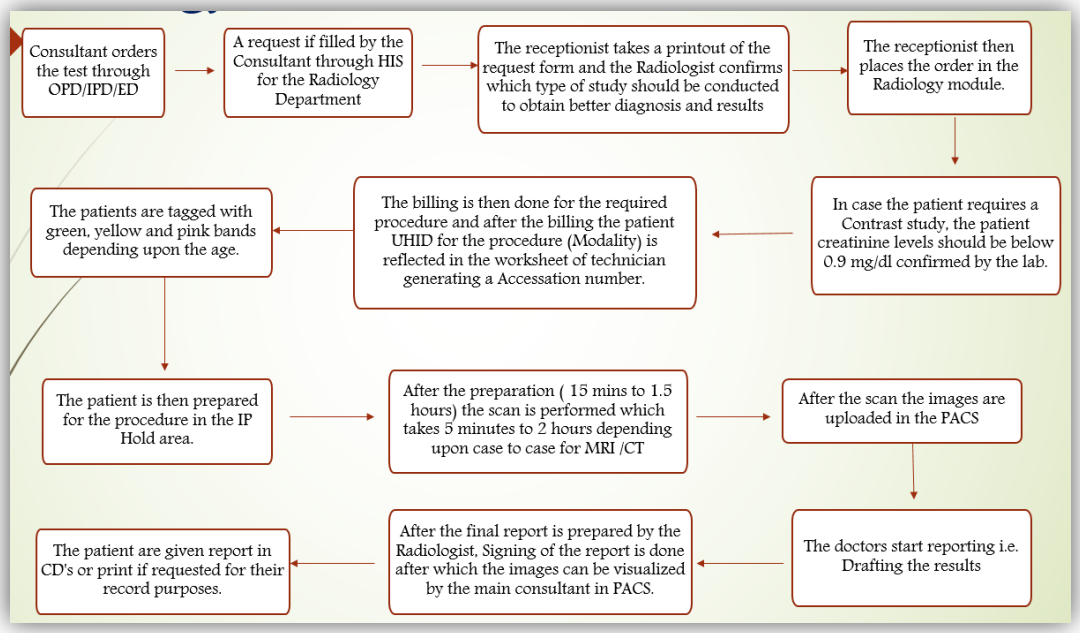
**Concerns**

- Barcode Reading error in the machine. No RCA has been done as of now. This leads to wastage of time and doubles the time.
- Dispatch errors are encountered frequently as the phlebotomist doesn't dispatches and the lab cannot acknowledges the sample even when it is physically present. In January 193 total errors out of which 83 Dispatch errors.
- The samples received are Lysed, Clotted, Leaking & Missing Labels.

**Suggestions**

- Tests should be tagged in the LAB system.
- RCA of the errors should be done and particularly the DISPATCH errors and should be eliminated.
- RCA of the Barcode error should be done causing major problem for the technicians.
- The reports sent by the Lab to the OPD area can be mailed to the patients rather keeping them waiting and saving the paper wastage.

## Radiology




**Key points**

- Initially 15 minutes are taken by the patient to reach the technician from the billing point.
- In case of In-Patients prior appointment is scheduled and the preparation part is done in the ward itself saving the preparation time.
- In case of Rectal Contrast study patient needs to be brought 15 minutes early for the contrast as it won't hold for long.
- In case a procedure takes more time or any emergency patient comes in the next scheduled patients are informed about the same.
- Different procedures may take more time depending upon the part to be scanned & method of procedure.
- The patients are attended well and informed about any delay that may occur.
- In case of MRI every patient is scheduled whereas for CT the slots can be given to walk-in patients depending upon the slots availability.
- On an average patients received are
    - MRI – 20-25 Patients are received
    - CT – 30 -35 Patients are received
    - USG – 55-60 Patients are received

**Bottlenecks**

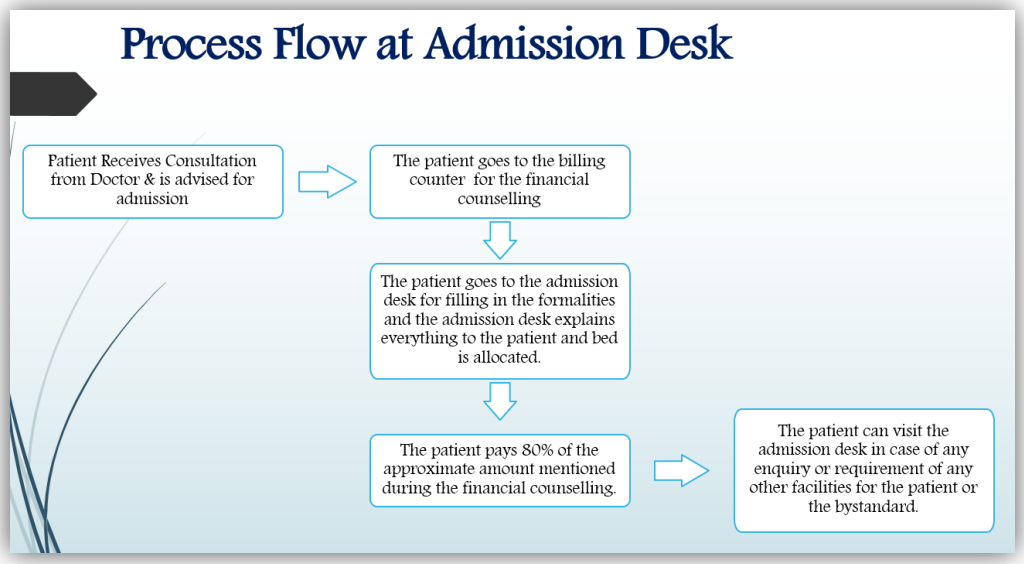
- Doctors make improper requests through system and it doesn't shows into the system and in the same time the patient reaches the radiology reception.
- Patients are not shifted in proper timings from the IPD area and sometimes proper preparation is not done from the nursing side. E.g. wrong cannula is placed in patient and the whole process has to be repeated again in the In-Patient Hold Area.
- Pulling out patients is not happening because of lack of co-ordination.
- Shortage of Radiologist as they need to perform interventional procedures and the same time review reports and finalize it within TAT time.
- In case of emergency patient no notification is issued and sometimes slotting them can be difficult.
- Sometimes the Patient is uncooperative and doesn't follow the instructions leading to more time for the procedure.
- HIS, PACS, RIS systems are most of the time are breakdown and real time updating is not done and sometimes the report from lab is not received on time leading to more waiting time.
- We are losing International and OPD patients who are getting scans from outside source because they are not getting appointments.
- The reports are not prepared on time sometimes causing delay more than 2-3 days.

**Suggestions**

- Slotting system can be done for In-Patients during early Morning hours or during evening hours to balance out the inflow of OP Patients.
- Checklist should be given to the patient on the appointment date for bringing the Creatinine report so that that time is not wasted.
- Waiting area can be utilized by showing short videos about the procedures on TV's to prepare the patients psychologically and educate the patient and reducing patient's anxiety.
- The newspaper stand can be utilized more by keeping leaflets regarding the hospital facilities and will educate the patient at the same time.
- If more staff (Radiologist) staff can recruited during night, more procedures can be done and proper utilization of the machines can be done.

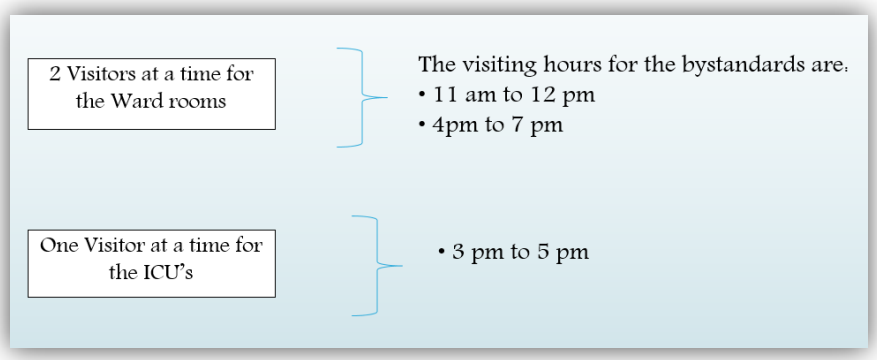
- In the near future realizing the inflow of patient's one new MRI machine can be installed in the facility which will prevent the loss of patients to external sources.

## Admission Transfer and Discharge




The patients are admitted into different room categories

- General Ward
- Twin Sharing
- Single room
- Deluxe VIP room
- Presidential Suite




**Good Points**

- The admission may happen by different ways i.e. planned admissions, Walk-in Patients & Emergency admissions.
- The admission are usually made according to the preference of the patient but final call is taken according to availability of bed.
- The different departments inform the admission desk about the total discharges that will happen during the day so that the admission desk can plan accordingly for the admissions.
- The patient is charged according to the bed allocated although he may have opted for a higher category of bed i.e. single bed or private suite.
- The admission team tries and arrange rooms for the patient ASAP.
- The admission desk confirms with the patient whether the patient had undergone financial counselling or not and If not the patients is sent for the same.
- The admission desk team co-ordinates with other departments i.e. ICU's & different categories of room single or double or general ward for the bed allocation and transfer of patients to other locations for managing the same.
- The bed is allocated by transferring the patient to different locations and arranging the bed for the new patients.
- The transfer of patients usually takes place during the evening hours b/w 5.30 pm to 6.30 pm.
- The admission desk informs the patient about the delay in admission process.
- The admission desk provides the internet facility to the bystandards when asked for the service.
- There are 4 people managing the admission counter in shifts.

- The admission desk informs the patient about the Do's and Dont's for the patient bystandards & the visiting hours to meet the patient's.

**Concerns**

- The patients have to wait for a long time to get admission as the discharges are not happening on time and it delays the process of admission.
- Proper co-ordination from the consultant coordinators is not provided to the admission desk about the cancellation of the planned admission or postpone of the admission.
- The admission desk faces difficulty as there are not enough beds and the occupancy is high.
- Most of the admissions are usually happening after 5 pm which increases the workload for the admission desk and other departments as well e.g. pharmacy.

**Suggestions**

- The process discharge process can be streamlined which will take care of the admissions and prevent the delays.
- The information should be communicated well among the coordinators and the admission desk about the cancellations or postponed admissions so that the process can be streamlined and delay can be prevented.
- Pregnant patients can be followed from their check-up so that their admissions can be planned accordingly.

**Intensive Care Unit**

**Key Points**

- Ratio of nurses are 1:2 or 1:1 depending upon the condition of the patient and in case of neonatal it is 1:1

- The coordinators along with admission desk coordinate in allocating the bed to the patients in ICU and the transfer of patients.
- The nurses work really hard to provide care to the patients and rounds are made by the consultants, nursing supervisor, infection control team and dietician.
- Most of the medications for the ICU are considered as STAT and has to be reach ASAP.
- Different types of beds are used in ICU's
  Enterprise 5000
  A-Care Beds
  Alpha Beds
  Nimbus Beds
- The inventory stock is maintained for critical medicines, Narcotics drugs which are kept in Double lock key in the ICU in Medicine Store.
- Important Emergency equipment's are also stocked in the Store room in ICU's.
- The bystandards are counselled by the consultants about the patient's condition and are shown improvements by allowing them to visit the patient along with the consultant maintaining proper hand hygiene practices.
- The nurse's takes care of the hand hygiene practices and takes all precautions while treating any infection patient and using the isolation room.
- Ticket is raised to biomedical, engineering & other departments in case of any crisis.

**Concerns**

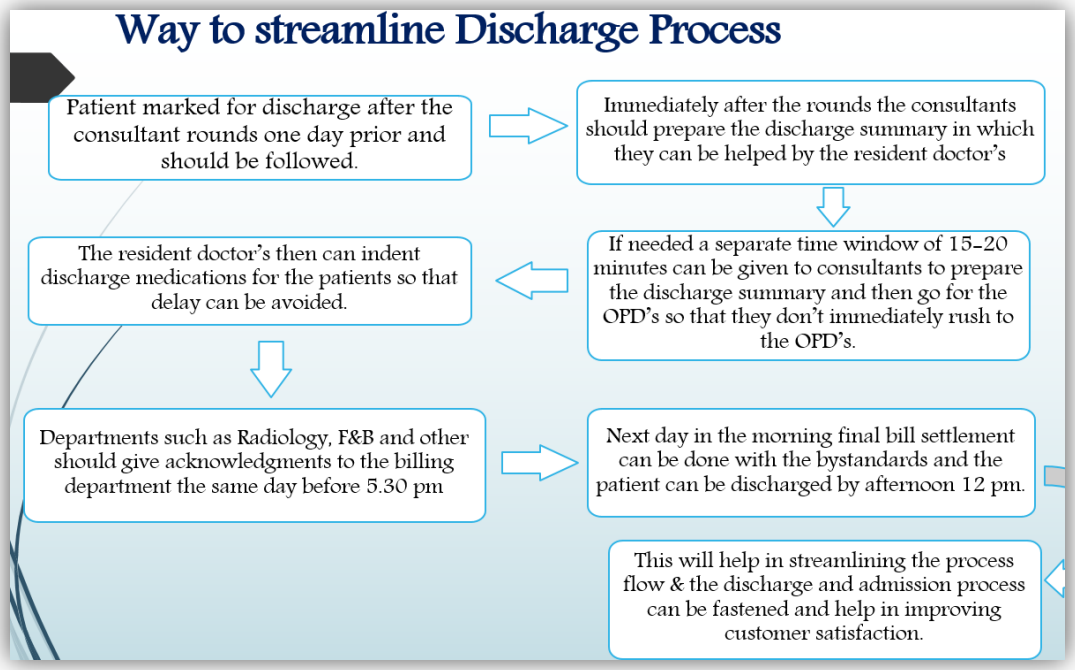
- Shortage of beds as occupancy is high.
- Delay in medications from Pharmacy and nurses complain that the pharmacy people don't even answer their intercoms.
- Delay from F&B sometimes but is managed by constant calling.
- The nurses don't use A-care Beds as they complain that the beds doesn't hold IV stands but as communicated by the coordinator's there is no such concern.
- The ICU's require Orthopaedics Chairs for patient undergoing Gastro Surgeries and Liver Transplant Patient's.
- Major Engineering issues regarding the ventilation but it is planned to be corrected by this week's end.

**Suggestions**

- The process of Pharmacy and F&B needs to be streamlined.
- Improvement projects to increase patient satisfaction.
- Departments like Engineering & others should take extra pain and resolve the issues as patients life is on the line.

## Pharmacy

- The pharmacist received the indents and packets are made for the concerned departments.
- The professionals come from different wards and ICU's to collect the medicine and consumables.
- The departments indent medicines for more than a week which are returned later adding to the load and wastage of resources.
- The ROWA Vmax i.e. Robo Drug Dispensing system is not utilized due to its issue in integration with the HIS which if used can be very effective in reducing the TAT.




**What could be done to streamline Pharmacy Dispensing Process?**

- The resident doctors can indent the medicine on daily basis so that there is no over indentation of the medications and the consumables.

- The pneumatic shoot system should be used frequently which as of now they are not using to dispense the medications which could help reduce wastage of time and manpower.
- A slot system can be followed for dispensing of medicines e.g. 9-9.30 am, 9.30pm-10pm for different wards.
- The medicines which are indented in the morning can be delivered in the afternoon and likewise in evening.
- This may help in streamlining the process and prevent any delays from the pharmacy site.

## Housekeeping

- Cleaning hours of Housekeeping
    - Morning - 6:00 am – 10:30 am ( 20 minutes per room in IP areas)
    - Evening - 3:30 pm - 7:00 pm (10 minutes per room in IP areas)
- The professional staff changes the Bedsheets, Linen and Towel in the occupied rooms.
- The Housekeeping department cleans the bathroom and floor and changes the soap and toiletries.
- The staff works in 2 shifts –
    - Morning: 8:00 am – 5:00 pm
    - Evening: 5:00 pm to 8:00 am ( 4-5 hours break given in between i.e. 11pm to 4am)
- The shift changes every week for the staff.
- Housekeeping is outsourced by Company named S&C.
- Total Housekeeping staff is 194 in number and with every 6 staff there is 1 reliever.
- Buffer stock is maintained by the S&C Company for the unplanned leaves of the staff.
- To check for Discharged patient the Housekeeping Supervisor coordinates with the Floor Coordinators.
- The Housekeeping staff takes 20 minutes to ready the room for next patient once a patient is discharged from one room.
- The staff allocated to each floor is 4 during daytime and 2 during the night time.

- The staff once recruited are trained initially and made to work with the experienced staff.
- The corridors are cleaned after every 1 hour.
- The Purchase Indent should be cleared and stocked within 15 days which is not happening right now
- (6 months since Mop Refill is ordered but not delivered)
- 4 Wagon Housekeeping trolley are used for cleaning.
- Cleaning in done twice in a day by 3 Ride on Machines, 2 Scrubbing Machines & 2 Buffing Machines. Thorough cleaning is done on Saturdays once in a week and in b/w mopping is done.
- Colour coded mops are used according to different areas.
- The different chemicals used are Taski( R1,R2,R3,R4,R5,R6), Noble, Coblet, Virex ( Disinfectant) & 3M Chemicals.
- The TAT maintained by the housekeeping staff for reaching to an area when required is 3 minutes.
- Every washroom has to be checked by the housekeeping staff every one hour.
- Soiled utility room is used by the housekeeping staff for keeping the materials.
- Mortuary is cleaned twice in a day (Morning and evening)
- Minor HAZMAT kit is available at all nursing stations while Major HAZMAT kit is available at Housekeeping desk.
- OT's are cleaned regularly but scrubbing by Virex is done on Sunday when planned surgical cases are less.
- In Emergency department one special dedicated person is allocated for cleaning the equipment's apart from normal housekeeping staff.

**Concerns**

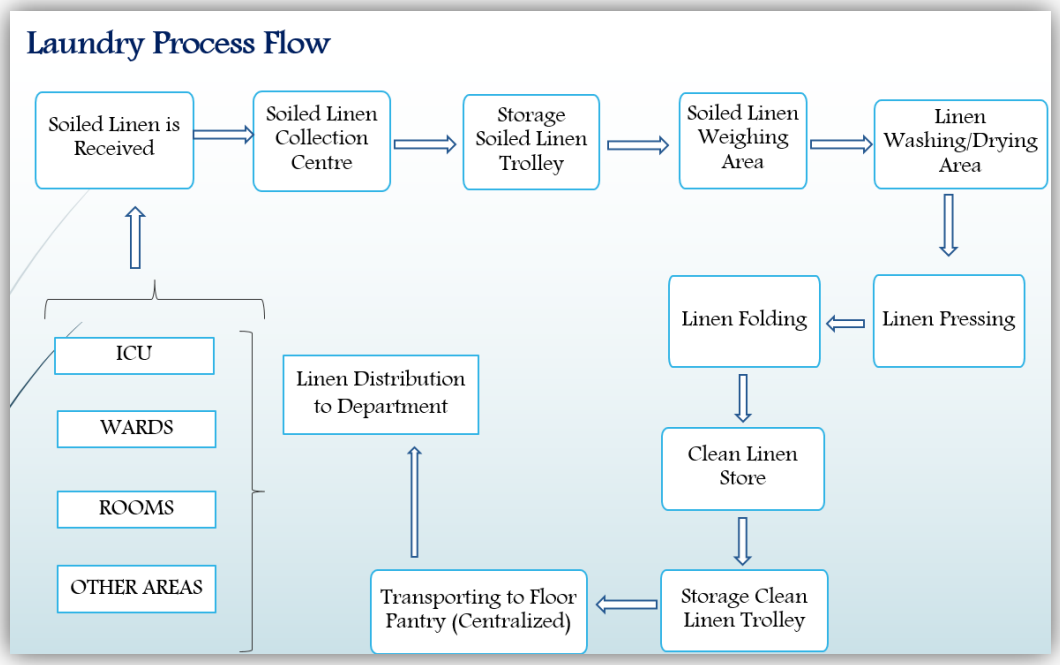
- There is no data regarding the physical checkout of patient after the discharge. The system shows the patient is discharged as the billing is done but the physical checkout doesn't happens in that real time and so the time varies for preparing room for the next patient.

**Suggestions**

- HIS should be updated so that the physical checkout time is recorded so that the next patient admission is planned accordingly and waiting time would be communicated to the patient.

## Biomedical Waste

- The housekeeping staff brings the biomedical waste from different areas of the hospital to the Biomedical waste Room every hour.
- The Biomedical waste is then weighed.
- The waste is recorded with a Badge number mentioning the area of the hospital from where the waste has been collected.
- This information is passed to the housekeeping desk.
- The biomedical waste is taken by an outsourced company IMAGE.
- The IMAGE Company generates one Barcode Number for the hospital which provides the details for the total waste generated by the hospital.
- The IMAGE company charges Rs. 5.85/- for every bed.
- General waste segregation is done so that it doesn't contains any biomedical waste as it is a criminal offence.




**Key Points**

- The Laundry staff is outsourced i.e. 21 in number
- The timings of the staff are 8:00 am – 11:00 pm
- In house Materials, Chemicals, Linen & Machines are used.
- Linen per-stock is maintained for individual rooms i.e. 1:16
- Requirements of Single room: Ward:
    - 3 Sheets (2+1) 2 Bedsheets
    - 2 Pillows (1+1) 1 Pillow
    - 1 Bath Towel
- Total Linen cost per room accounts for 9.74/- (activity based costing which includes electricity, water, Manpower, Wood, Chemicals, Briquette, and Boiler Operator)
- 1 Cycle of Washing takes 45 minutes.
- 1 Cycle of Drying takes 15 minutes.
- Pressing and Folding: 2 Bedsheets in 1 minute.
- According to Hospital SOP the bedsheets are changed once in a Day.
- Stock maintained according to number of beds + 5% Variation.
- Running Bedsheets: 4000

  1250 for Beds

  1250 Pantry

1000 in Laundry

- 1 Bedsheet can be used till 70 cycles of Washing and then can be used to make pillow covers and some can be used for discarded Linens that can be used by the Biomedical Department.
- Pillows are Tumple Dried and covered by a Pillow Protector.
- The soiled linen is received in laundry area in yellow bags.
- Temperature maintained for washing linen

- Soiled Linen (70-80 degree Celsius)

- Infected Linen (80-90 degree Celsius)

- In total there are 4 machines i.e. 1 machine of 15 kg capacity, 3 machines of 60 kgs out of which 1 machine is dedicated to washing of infected linen.
- In total there are 3 dryers out of which 1 has a capacity of 15 kg and other 2 of 60 kgs.
- Steam press is use for ironing uniform + patient dress
- Calendric Machine is used to iron bedsheets.
- Currently the steam pressure provided is 5-6 kg/pressure whereas requirement is of 7 kg pressure.
- The boiler uses wood rather than diesel which would be a big cost factor.
- Cost of 1 tonne wood is Rs 3500/- and the machine is run for 17 hours so in one day total wood requirement is 1070 kg whereas for running one hour by diesel Rs 2000/- would be the cost.

**Concerns**

- Currently the pre-cleaning area is not utilized in the Laundry.
- The machine breakdown if from past 2 months but no maintenance is done till date affecting the process and so the remaining machines are over run to compensate for the same.

## Food and Beverage's

- The F&B Department provides
    - Kitchen – Cooking food
    - Service – Delivery
    - Stewarding – Hygiene Sanitation & Training
- There is a diversified menu prepared for the patients that runs cyclic, which is approved by the dietician.
- The different types of diet provided by the F&B are –
    - Normal Diet
    - Renal Diet
    - Diabetic Diet
- The F&B supervisors daily between 3:00 pm & 3:30pm everyday goes to all In-patients and takes order for next 5 meals till next day lunch for the patients as well as the bystandards which is verified by the dietician.
- The billing is automatically updated in the system once the dietician oks the diet in the HIS for the same day.
- Bystandards billing is done separately and added to the final bill settlement. The bystandards are informed about the food bill after every 3-4 days.
- The food has to be prepared one hour prior before delivery.
- The TAT for beverage orders is 30 minutes and 45 minutes for the meals but delayed if the order is made during patient food delivery hours.
- Training is given to the staff on regular basis for maintaining the quality standards e.g. Diversif Johnson people come for training.
- The store in the F&B is stocked according to the requirement.
- All the pulses, rice, coffee, tea etc. are maintained for a week.
- The vegetables are received on a daily basis. The vegetables are organic.
- A daily request is made by the kitchen to the store for the raw materials which is recorded in X-cel and records are maintained.
- The vegetables first received are washed with Sanitizing Tablets-Suma Tab and then are stored in the Freezer at 5 degree Celsius.
- The non-veg items are stored in the Freezer at -18 degree Celsius.

- Once the food is prepared it is tasted by the dietician and when approved then only it can be sent to the respective floors.
- Once the F&B receives the order sheet they segregate the patients for different diets and serve food accordingly i.e. renal or diabetic or normal diet.
- The food is dispensed to different floors for the patients with the order sheet for that particular floor which is taken through HIS prescribed by the Dietician.

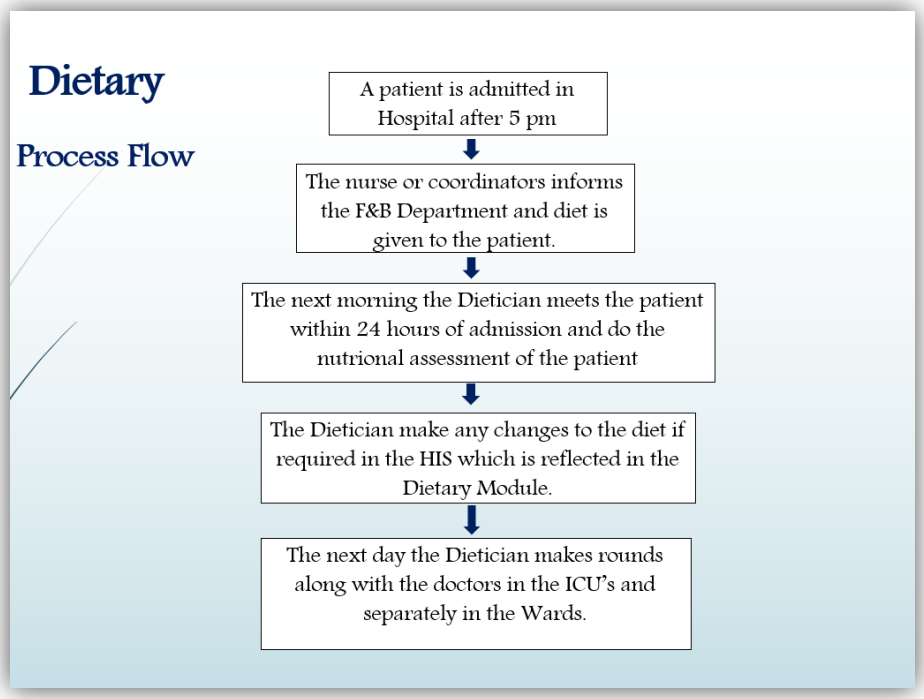
**Concerns & Suggestions**

- If the patient has gone for the procedure it will not be reflected in the HIS and the same is not informed to the F&B department which leads to issue for both for the patient and the F&B Department.
- No retained rooms are reflected in the HIS system so the F&B department in not aware if the bystandards are staying or not and so cannot take order for the same.
- The patient frequently complains for the taste of food, we can accept that the patients are under medications so the taste buds are not functioning but the frequent complaints from the by standards the issue of concerns.
- Complains regarding cold food and colour of the plates are addressed and will be solved once the hot trolleys and new plates comes in.
- New room facilities are in process in the Annex Building that will solve the by standard order problem and retained room problem will be solved.

## Dietary

- The dietician takes one time consultation charge for all patients but a consultation charge is taken every time from ICU patients whenever their diet is changed.
- The ICU patients are given feed by the nurses as prescribed by the dietician and charged accordingly to ml of feed given which is reflected in the final bill of the patient separately.
- The feed billing is done by the Dietician
- There are 2 sets of Dietician –
    - Clinical – 6 in No ( 8:oo am to 5:30 pm)
    - Kitchen –3 in No ( 7:oo am to 8:30 pm)

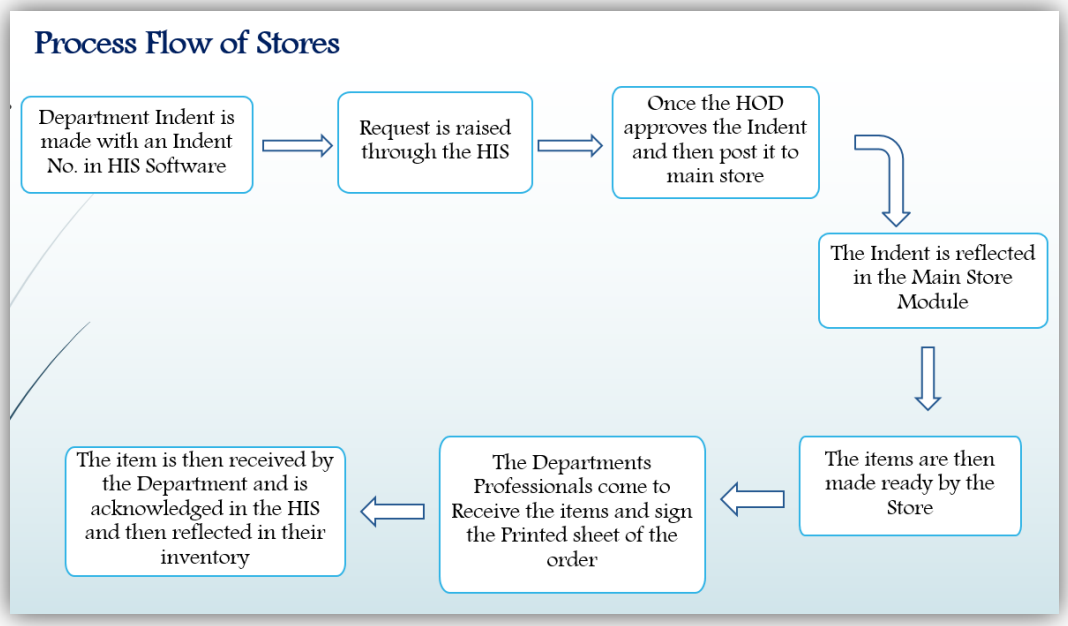
- The diet chart copy is sent to the F&B as well as to the Nursing Staff of the respective Floors.




**Concerns**

- No monitoring is done if the by standards feed the patients other food.
- Lack of coordination between the nursing staff and F&B as the Dietician is not informed once the patient gets admitted.
- Diet order if mentioned e.g. High Protein Diet so egg white is recommended which is sent from the F&B but not delivered to the patient and is missed as it is not on the same tray.
- Dietician complains that timing is written on the order list for the patients but missed by the F&B as they do not match the order with the order list timings.

## Stores




## Key Points

- Inventory is planned taking a 3 months moving average
- The inventory is maintained for 15 days by the departments as well as the store.
- The usual indent happens twice in a month.
- All the items procured in the department are recorded and maintained in the Stock ledger in the system.
- The items are classified as
- Fast Moving (Inventory stock of 30 days is maintained)
- Non Moving (Inventory stock of 15 days is maintained)
- Sub stores are in OT's, Lab, Cath lab, IP areas
- The store enters the invoice details in the Oracle software in GRE (Goods Receive Note)
- Copy of the GRN with the original bill invoice is submitted to the finance department.

- In case of any non-moving item return the head can mail about the same to the store manager so further action to return can be processed.
- A particular day is allocated to each department for dispensing items from the store.
- The lead time for local purchase is 3 days and for any outstation it is 7 days.

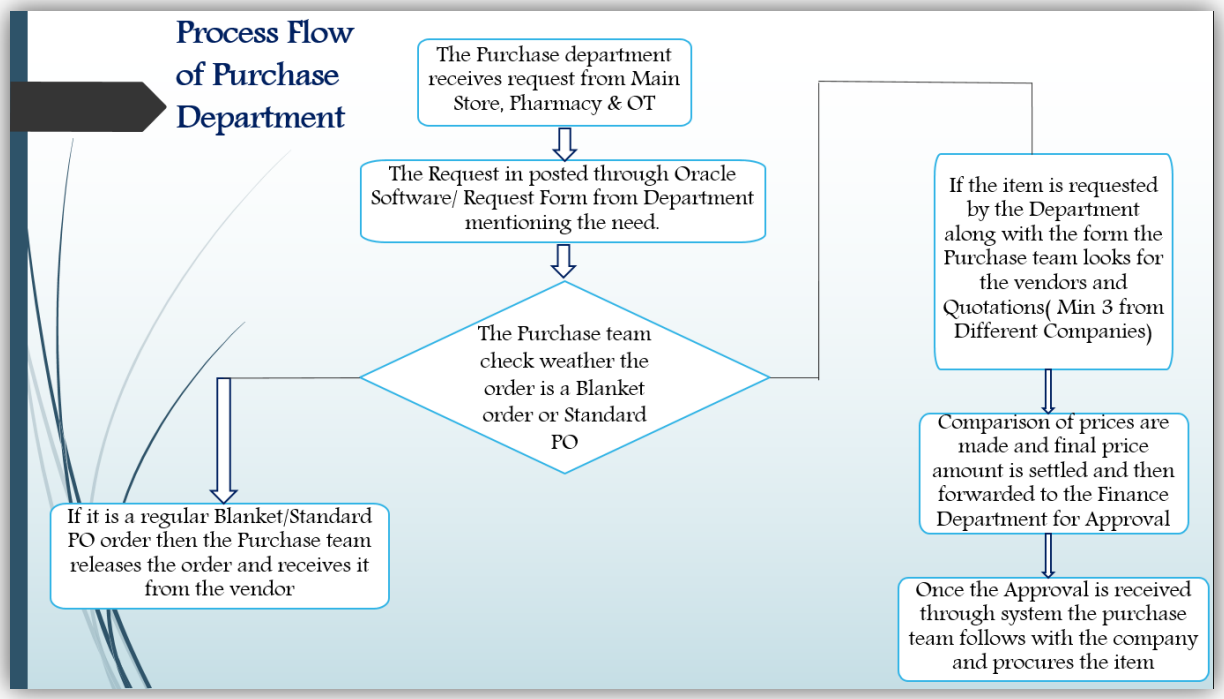
## Concerns

- Re-order level is not processed from the Oracle as it will be automatically updating for next cycle to the purchase department once it is runned without letting any changes to happen. E.g. Items required may not be required next month so it will not make the changes and run cycle same as the previous order and practically it is not possible to check every item. If the inventory can be segregated into subunit wise this system could work as we can easily identify the items.
- Space allocated is not enough to stock the inventory.
- Staff doesn't make frequent use of the system & prefers doing things manually as they feel chances of error are more.
- Identifying and returning stock from all departments is a big task.
- Physical variations come in the stock bcz the lot no mentioned may be different from the stock available in the system.
- The nurse coordinators doesn't acknowledges the inventory once they receive it and daily stock entry is not maintained which leads to variation in system numbers and physical items.

**Suggestions**

- For engineering items subunit can be created nobody is utilizing the current engineering facility room
- More professional staff is required in the main store.

## Purchase Department




## Key Points

- There are blanket agreements made with the company under which the company will provide the items for the contract period under unchanged prices.
- The purchase team ask 3 quotations from 3 companies before procuring any item and making comparisons to choose out the best option.
- The purchase team negotiates the price with the company for the procurement of the item.
- The Purchase team takes the samples from the vendors before giving it to the store for sample checking.
- The payment is credited to the company is after 60 days

**Concerns**

- No reports are generated from the Oracle software.
- The re-order level cycle is a problem as it doesn't allows any changes.

## Biomedical

### Key Points

- BMD staff is working manually & waiting for the software updation & its integration with the HIS.
- The BMD team maintains record of request form's that are signed by the user end before submitting it to the purchase department for procuring new equipment's.
- The BMD receives complaints through call and through software i.e. for raising tickets
- The BMD team responds to the calls rather than waiting rather than waiting for ticket in software(provided by the IT)
- The TAT for addressing the issues to the Critical areas is 15 minutes and Non-Critical is 45 minutes.
- AMC/CMC are done during the purchase & negotiated with the company.
- There is one dedicated staff in OT and 2 interns are in the field.
- The BMD is maintain the records on the x-cel Sheet for the Preventive Maintenance.
- The time of the calibration and downtime is monitored through this x-cel sheet format only.

**Concerns**

- No software integration so difficulty in maintaining records and preventive maintenance.
- Sometimes the delay is from the Purchase department for the procurement in the equipment's.

**Suggestions**

- Currently the IT team is working on the software for the BMD and integration with the HIS.

## Security

- Key Points
- The main duty of the security is to provide security to the – Patient's, Staff & the resources of the Hospital and the Staff.
- The security staff responds to the calls from all areas of the hospital in case of any emergency and staff is deployed in the field for the smooth functioning of the hospital.
- In case of trespasses, notices are generated
  Signed and issued to the Trespasser.
  A copy is sent to the Police.
  A copy is maintained in the Hospital Records.
- A DMFT (Door metal floor detector) is for checking the vehicles for checking any suspicious threats.
- Recordings of the hospital are kept generally for a month and in case of any incidence the record is saved permanently and maintained in the records of the hospital.
- The security check the staff for any kinds of frisking.
- A gate pass is generated in case the hospital resources are taken out which is signed by the senior Manager, HOD and countersigned by the security Manager.
- The staff is outsourced from 2 agencies i.e. 4 Star and Private I
- Minimum of 65 staff is there for the process workflow.
- The property is monitored by 225 cameras and a daily report of the security is send through mail.
- Every evening at 7 'o' clock security people go to all rooms & ask the extra bystandards to leave as per the hospital policy for the visiting hours.

- The parking space is sufficient to park 500 cars & daily flow of vehicles is around 700.

**Concerns**

- Complaints are received from nearby locations for the disposal of head caps and gloves.
- Sometimes the security staff has to be strict with the staff for checking.
- More staff required to manage the facility.

**Suggestions**

- The staff should be encouraged to support the security personnel in checking and monitoring.

## Fire & Safety

**Key Points**

- All the departments are given training are covered in 4 months schedule.
- The safety officer checks the fire extinguishers on monthly basis.
- The sprinkler gauze are monitored monthly.
- As per the standards a bulb bust should be done to monitor the functioning of the sprinkler.
- Daily round is maintained by the safety officer and check for the dire exit points.
- Check the alarm site's and coordinates with all departments for any kind of emergency.
- The safety officer has to take care of all the environmental safety protocols but cant do it on daily basis as shortage of staff.
- The safety officer take cares of all the licensing required and has to communicate it to the State Kerala.

**Concerns & Suggestions**

- There is only one staff for the fire and safety so he is not able to complete the daily rounds for checking all the facilities.

## Engineering

**Key Points**

- The engineering team takes care of 5 things.
- The equipment's are

  33 KV supply

  DG plant Area (CUP)
- Full load Transformers – 1600 KVA 8*3
- Full load DG – 1450 KVA *2 + 1010 KVA
- The power supply is break up into Raw Power, Emergency Power, UPS, and Stabilizers.

**HVAC & Water Dispersion System**

- It takes care of all the Preventive & Breakdown.
- 2 Firepower tank (2.75 lakh capacity)
- 2 Raw Water Tank (1.79 – 2.30 lakh capacity)
- Tower 2 is using RO water (20,000)
- RO water is supplied to

  CSSD

  Nursing Station

  Sterilized

  OT Scrub Sink
- Chiller Capacity

  3 Chiller Plants

  3 Cooling Towers
- On Average 20 tankers are used for water supply i.e. 24k capacity.
- Total number of AHU's are 106
- In OT's 11 AHU"S and 3 Treated fresh air.
- Every 6 months Hepa Filters are used.
- The process flow for supply of water in the Hospital.
- Medical RO Plant is used for Dialysis Purpose.
- BMS (Building Management System) controls the AHU.
- The engineering takes care of all the Interiors, furniture & gardens.

- Total water consumption per month is 4.8 lakhs.
- Total monthly electricity consumption per month is 29,000 – 30,000 units.
- In total we have 16 lifts out of which 13 are operational.
- The complaints are received by the engineering department through a help desk no i.ee 822 or a ticket can be raised through HIS.

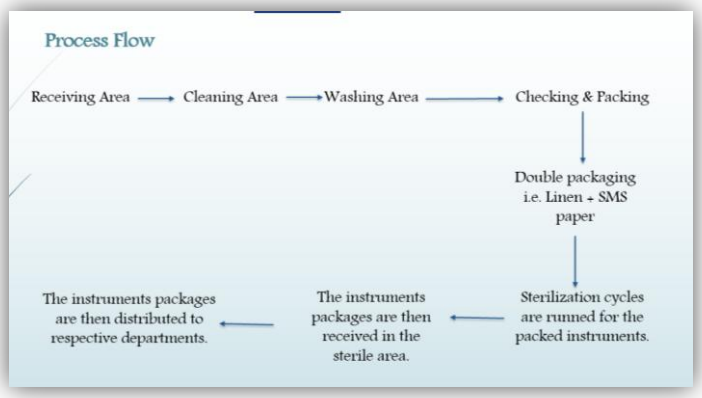
**Medical Gases**

- A separate facility is available from where all the gases are inlet into the hospital system.
- A scavenger system is for NO which is released in the terrace mixed with atmospheric air.

**Concerns**

- There is no dedicated store for engineering
- Major delay for rectifying issues are because there is no stock maintenance
- The stock are procured when the department receives any complaint
- Sometimes equipment's are indented but are not received even after the timeline.
- Mails are sent regarding these Indents and escalated but no replies could be seen.
- A dedicated engineering staff in the store who has a technical knowledge about the equipment's and their spare parts.
- A minimum stock should be maintained for the engineering so that the process flow is smooth.

## CSSD



**Key Points**

- ETO + Plasma Sterilization instruments have 1 year packaging warranty.
- The quality indicators in CSSD are
    - SUD Monitoring
    - Biological Indicators
    - PCD

      Total no of Loads
    - Machine breakdown Up time
- All the instruments are checked properly throughout the process and in case of any deficiency the instruments are replaced.
- Internal pack control for all the sets.
- External pack control labels with batch number/date of sterilization and date of expiry will be attested for all the packs along with pack content checklist.
- All the surgical instruments are monitored for sterilization with biological indicator.
- Distribution of items is on the basis of first in an first out.
- The TAT for the sterilization in general is 3.5 hours and in emergency cases it is 1 hour.

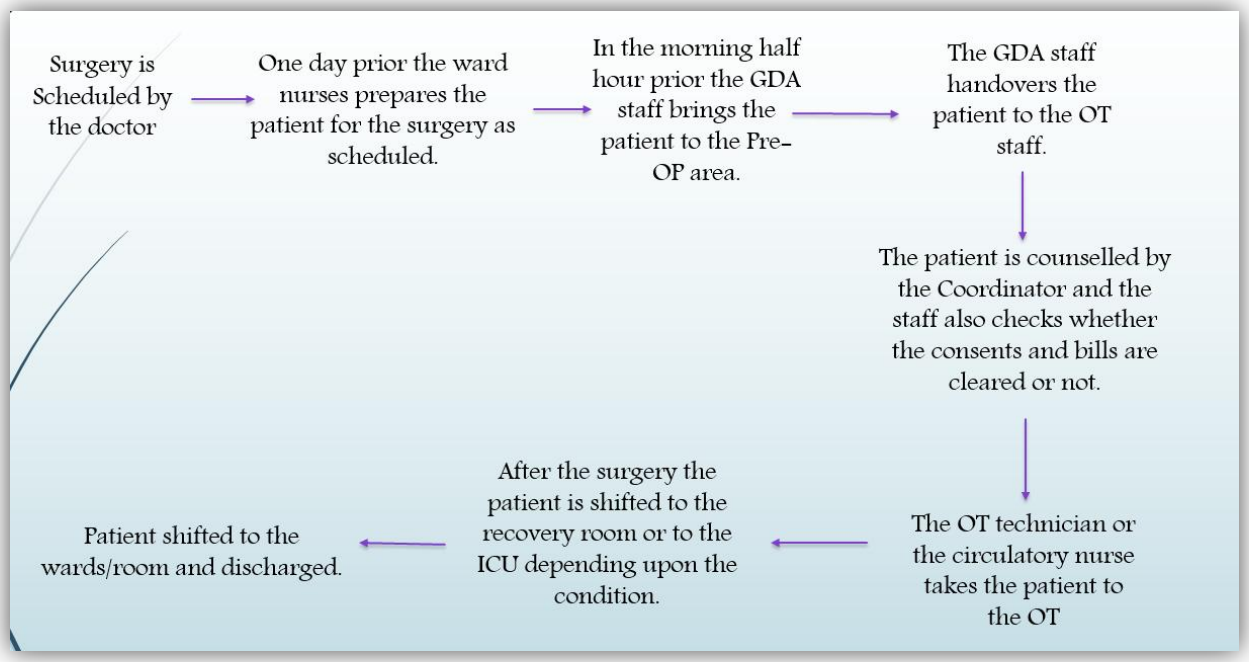
**Concerns**

- The CSSD has only 2 senior technicians & rest all are helpers & in case one doesn't turn out there is chaos in managing the cycles.
- The double packaging is done which leads to extra linen per package and that amounts to huge cost.
- Certain equipment's which can be reused can be pre-cleaned by the staff in respective departments.

**Suggestions**

- More manpower can be allocated to the CSSD and this will fasten the process more.
- Double packaging of the instruments can be avoided as studies suggest it doesn't hamper the sterilization process.

## Operation Theatres




**Key Points**

- 11 OT's on total out of which 10 OT's are dedicated to some specialties & 1 is kept for emergency purposes.
- The circulatory nurse in the OT takes a note of everything and makes the entry in the HIS Later.
- 2 consents are taken from the patient i.e. anesthetic Consent & Surgeons Consent i.e. valid for 24 hours in presence of the Patient relatives and witness (nurse) & the surgeon.
- Separate dedicated nurse is there to take care of Narcotics stock following the double lock key mechanism and the remaining ampules are disposed in running water in presence of the Head Nurse & witness.
- The OT has a separate dedicated store room and has direct access to the CSSD through the lifts and has pre washing area also.
- In case of emergency cases during the night On Call doctors are there.

**Concerns**

- The circulatory nurse doesn't gets enough time b/w surgeries to make note of all in the HIS.
- There are increased no of door openings in the OT's that can be avoided.
- For every 2 OT's there is one technician and have to switch in between cases to reach at both places.
- Time out is not followed in daily routines.
- The door openings are very high which can also be a source of infection.
- Billing of narcotics if done by the nurse and the consumables bill is also generated by the staff,.
- Nurses are not having a preformed X-cel sheet to record the OT data.
- OT staff is facing co-ordination problems with other departments e.g. Patients coming to the Pre-OP area with ornaments and sometimes patient is using the washroom.
- Delay in First patient has a cascading effect to all surgeries.

**Suggestions**

- Co-ordination with other staff and make them accountable for the delay.
- Reduce the Door opening and follow strict hand washing compliance.
- An X-cel sheet class during the ASAP & AMAP Trainings.
- Proper Scheduling of all cases and try to finish the cases in time so that everything is on time.