

**Internship
at
Medanta-The Medicity, Gurgaon**

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Acknowledgement

There are many individuals in each person's professional life who contribute in enriching the experience by stimulating and influencing intellectual development. A sense of indebtedness to such people comes from within. Ordinarily this feeling is expressed in customary gesture of acknowledgement. Therefore, it seems right to acknowledge my gratitude with sense of venerates to the almighty God and all those people who helped me during the course of project work. Their valuable guidance and wise direction have enabled me to complete my project in a systemic and smooth manner.

The project report on **“A study to assess the appropriate use of antibiotics in a tertiary care hospital”** has been compiled involving the hard work of many. Now is the time to express my heartiest gratitude towards them.

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Last but surely not the least, from the bottom of my heart I wish to thank my family and my friends for being who they are. Without their support and encouragement I could not have attained all that I have so far.

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1. Acronyms/Abbreviations

- BP: Blood Pressure
- CABG: Coronary Artery Bypass Graft
- Cath Lab: Catheterization Laboratory
- DSA Lab: Digital Subtraction Angiography Lab
- ERCP: Endoscopic Retrograde Cholangio Pancreatography
- EUS: Endoscopic Ultra Sound
- GHPL : Global Health Care Private Limited
- Hb : Haemoglobin
- IPD : In- Patient Department
- MLC : Medico-Legal Cases
- OPD: Out-Patient Department
- OT : Operation Theatre
- POCU: Pre Operative Cardiac Unit
- PTCA: Per Cutaneous Transluminal Coronary Angioplasty
- RH +ve : Rhesus Factor Positive
- RH -ve : Rhesus Factor Negative
- RBC : Red Blood Cell
- UG Floor: Upper Ground Floor
- WB: Whole Blood
- RFA: Request For Admission
- TPA: Third Party Administration
- ACR: Admission Control Room

2. Observation Learning

2A. Introduction

The summer training is an integral part of the course curriculum of PGDHM at IIHMR Jaipur. As part of the course, students at the end of their first year are required to undergo training of two months to get an in-depth exposure to the various departments in the organization, as well as take up projects as per the requirements of the organization where the students get training. What is most crucial is to build a base of knowledge about the structure and functioning of the hospital, which can be used to understand and apply concepts in the subsequent study tenure at IIHMR Jaipur.

During my summer at Medanta – The Medicity, Gurgaon, there were numerous learning experiences. These were enhanced due to the projects undertaken at the hospital, which are listed as follows:

- *‘A Study of the Competencies of the Paramedical Staff*
- *A Review of the Manpower Requirements of the Medanta, The Medicity*
- *A Study of the Nursing Manpower Requirements Medanta, The Medicity*

A brief report of the training of two months is presented below with the details of tasks undertaken and lessons learnt during the training.

2B. Organization Profile

Medanta the Medicity, a multi-super-specialty hospital, is one of India’s largest healthcare projects in multi-specialty tertiary care medical treatment, and has been envisioned as an institute that will redefine standards of excellence in healthcare delivery by bringing together the best of infrastructure, technology, training, education and medical intelligentsia. With an investment of over \$350 million, Medanta the Medicity aims to create a world class education and training centre backed by remarkable infrastructure, futuristic technology and the extraordinary vision of the eminent cardiac surgeon, Dr Naresh Trehan – Chairman and Managing director of Global Health Private Limited (GHPL).

Located across 43 acres, Medanta is the new international healthcare destination in the National Capital Region of New Delhi – Gurgaon. Medicity is a 1250 bed medical institute at par with world standards. The objective of the Medicity is to bring in global healthcare delivery standards at affordable prices, while firmly placing India on the international

roadmap as a premier destination for healthcare services, medical research and high-end medical diagnostics.

Specialties covered

Medanta provides integrated primary, secondary and tertiary care services spanning over 29 super specialties and high-end services covering every aspect of human health, housing 10 Institutes, 8 Divisions and 11 Departments.

- Institutes
 - The Medanta Heart Institute.
 - The Medanta Institute of Neurosciences.
 - The Medanta Bone & Joint Institute.
 - The Medanta Kidney & Urology Institute.
 - The Medanta Cancer Institute.
 - The Medanta Institute of Digestive & Hepatobiliary Sciences.
 - The Medanta Institute of Minimally Invasive Surgeries.
 - The Medanta Institute of Transplant & Regenerative Medicine.
 - The Medanta Institute of Critical Care & Anaesthesiology.
 - The Vattikuti Institute of Robotic Surgery.
- Departments
 - Department of Clinical Immunology & Rheumatology.
 - Department of Pathology & Laboratory Medicine.
 - Department of General Surgery.
 - Department of Internal Medicine.
 - Department of Dental Surgery.
 - Department of Physiotherapy & Sleep Medicine.
 - Department of Transfusion Medicine (Blood Bank).
 - Department of Pediatric Gastroenterology, Hepatology & Liver Transplantation.
 - Department of ENT & Head Neck Surgery.
 - Department of Physiotherapy & Rehabilitation.
 - Department of Ophthalmology.
- Divisions
 - Division of Endocrinology & Diabetes.
 - Division of GI & Bariatric Surgery.
 - Division of ENT & Head Neck Surgery.
 - Division of Peripheral Vascular & Endovascular Sciences.
 - Division of Gynaecology & Gynaec-oncology.
 - Medanta Breast Services.
 - Division of Plastic, Aesthetic and Reconstructive Surgery.
 - Division of Radiology & Nuclear Medicine

What is unique about Medanta the Medicity?

- Medanta aims to functionally integrate within one campus and one management, the facilities of medical care, teaching as well as research and development.
- It also offers to explore the possibility of integrating knowledge of traditional and alternative medicine with modern medicine, through means of scientific research.
- Medanta the Medicity is led by Dr Naresh Trehan, one of the leading luminaries in the medical world. Dr Trehan is a recipient of various national and international awards for excellence, including the highest national awards, Padma Shri and Padma Bhushan, in recognition of his distinguished service to the nation.
- Dr. Trehan has also served as the personal surgeon of the President of India since 1991 and was formerly the President of the International Society for Minimally Invasive Cardiac Surgery (ISMIC)
- The Medicity team has attracted some of the most distinguished names in medical and non-medical fields from all over the world.

Infrastructure

Medanta-The Medicity is spread across 43 acres, has 45 operating theatres, 1250 beds and over 350 critical care beds

Education

An initiative is currently underway of building a full-fledged medical college, the objective of which will be to produce highly competent general physicians and specialists who would be socially sensitive and fully committed to the principles of medical ethics. This establishment would also make every attempt to erase the dividing line between clinical and non clinical areas.

Research and Development

The Medicity will have a state-of-the-art research and development centre integrated with the hospital and the teaching establishment. It is planned to be one of the best funded, staffed and managed medical R&D centre in the country. Its Research Advisory Committee will consist of 12 members from amongst the best known names in modern biology, including various areas of medicine.

Traditional Medical practices

An important objective of Medicity is to validate - and integrate with modern medical system – those medical practices in our traditional and complimentary systems of medicine such as Ayurveda, Unani, Siddha, Tibetan and Tribal Systems that are compatible with science.

Vision and Values

‘The Institution is governed under the guiding principles of providing affordable medical services to patient with care, compassion and commitment

Technology

- 256 Slice CT

- Brain Suite, Intra-Operative Imaging Operating Theater
- Da Vinci Robot for Minimal Invasive Surgery
- Artis- Zeego Endovascular Surgical Cath Lab
- 4 Linear Accelerators (provision for IGRT/ IMRT) (Radiation Surgery)
- Tomotherapy
- Integrated Brachytherapy Unit with remote controlled HDR
- 3.0 Tesla MRI
- PET CT
- Gamma Camera
- Digital X-Ray, Fluoroscopy, Bone
- Densitometry
- 3D and 4D Ultra Sound
- Digital Mammography

Affiliations

- Medanta the Medicity has entered into a corporate alliance with 'Duke Medicine' with the objective of providing a platform for high end research practices and clinical trials.
- The Medanta Duke Research Institute (MDRI is a world class early phase clinical research facility at Medanta the Medicity. MDRI guarantees to offer an environment conducive for exploring the technologies of traditional medicines in synchronization with modern medicine aids for research and development in the areas of healthcare and health recovery.
- It is proposed to be a 60-bedded facility built in an area of 27,000 sq. ft. within the premises of Medanta. To unlock its potential, MDRI will be undertaking immediate early phase clinical studies in three countries with diverse populations.
- The results of such a research will be paramount for all subsequent studies that can play a decisive role in changing the face of healthcare across the world.

2C. Data Collection

- With permission from the Senior Vice President of Medanta the Medicity, Mr. Arun Datta, and the Medical Superintendent, Dr. Awadhesh Kumar Dubey, we created a schedule, which we have followed in order to observe and learn the functioning of all the departments of the hospital. This task was made difficult due to the scale of operations being conducted at Medanta the Medicity, as we realized that a significant amount of time would have to be invested in each department in order to glean as much information as possible.
- After permission was secured and a schedule was made to observe the various departments of the hospital, we went and sought appointments from the concerned personnel in the various departments.

- Once these permissions were obtained, we got the details of personnel who would guide us in these departments.

2D. General Findings

I will attempt to present my general findings in the form of process flow sheets, in the order of my visit to the departments.

a) OPD: As has been mentioned earlier in this report, it can be said that each floor of Medanta houses a separate institute of clinical excellence. Each institute has its own OPD area as well as IPD area / day-care area wherever applicable. The general process flow that is followed in all the OPDs is as follows:

Figure 1: OPD Process Flow

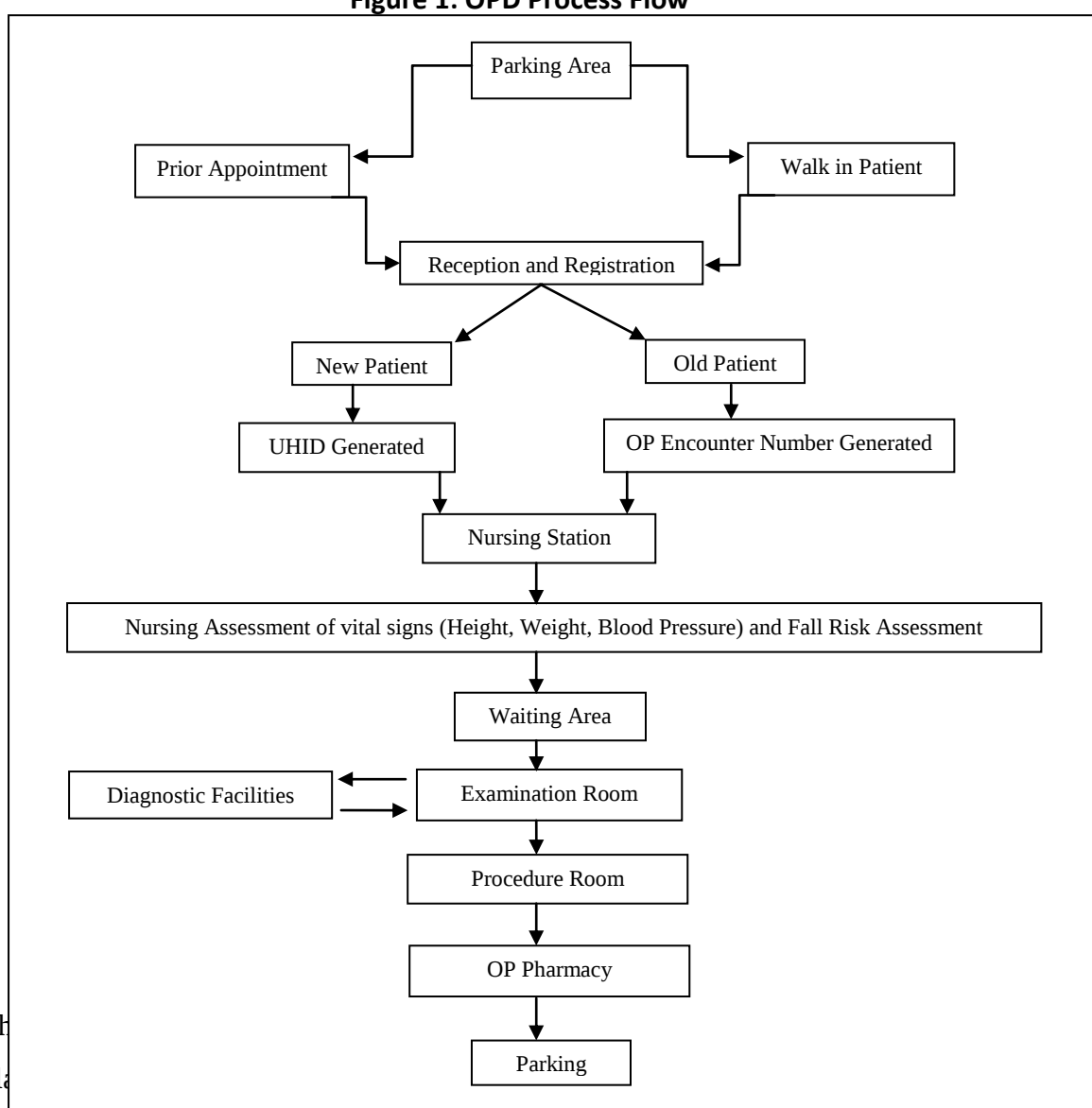
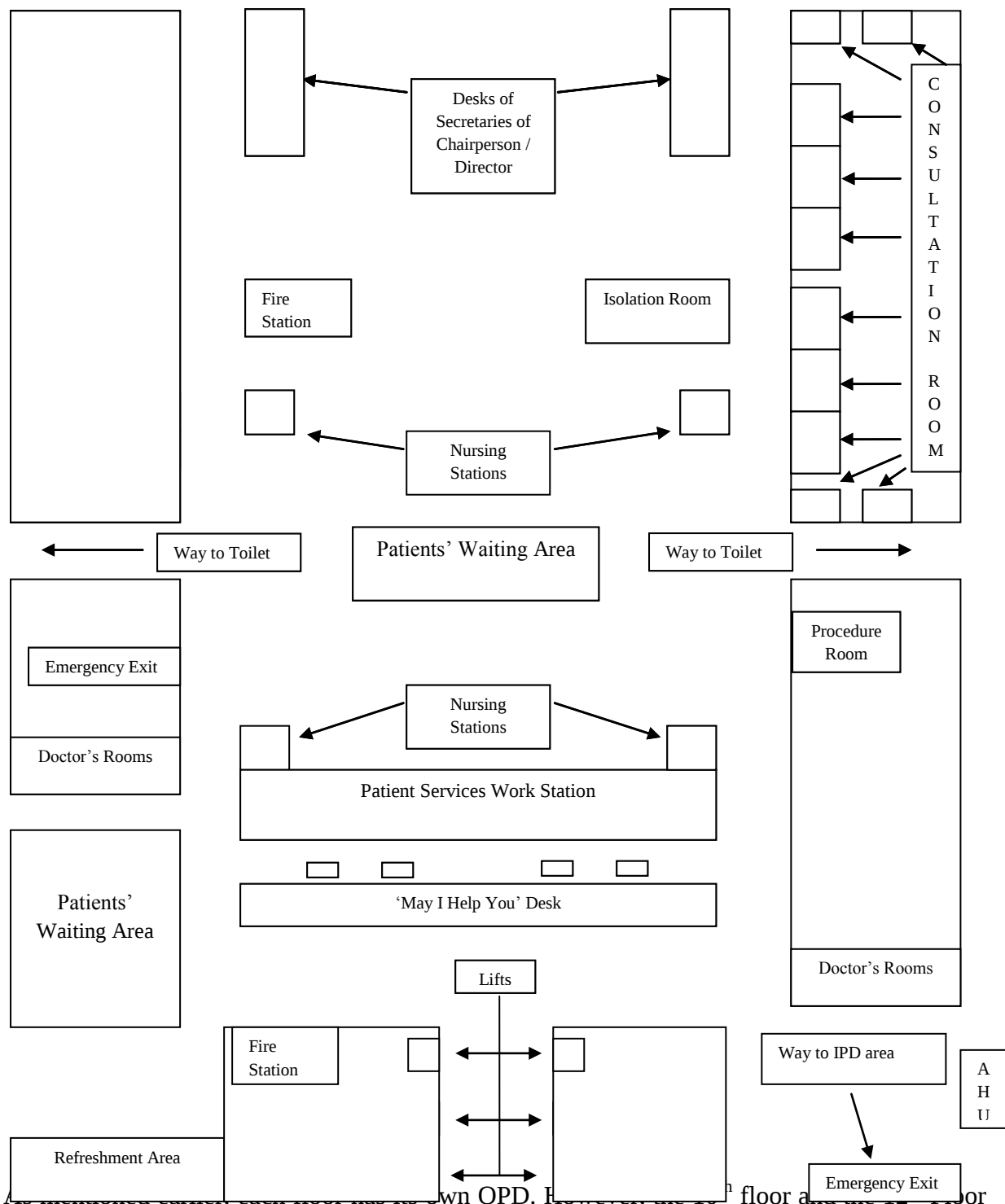


Figure 2: OPD Layout

Chairman's Chamber	Director's Chamber	Associate Director's Chamber	Senior Consultants' Chambers	Chairman's Chamber
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have Day care facilities as well. Every floor 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. The daily volume is of approximately 2000-2500 patients across all the OPDs. Each floor has the capacity to handle 70-100 patients waiting. 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.

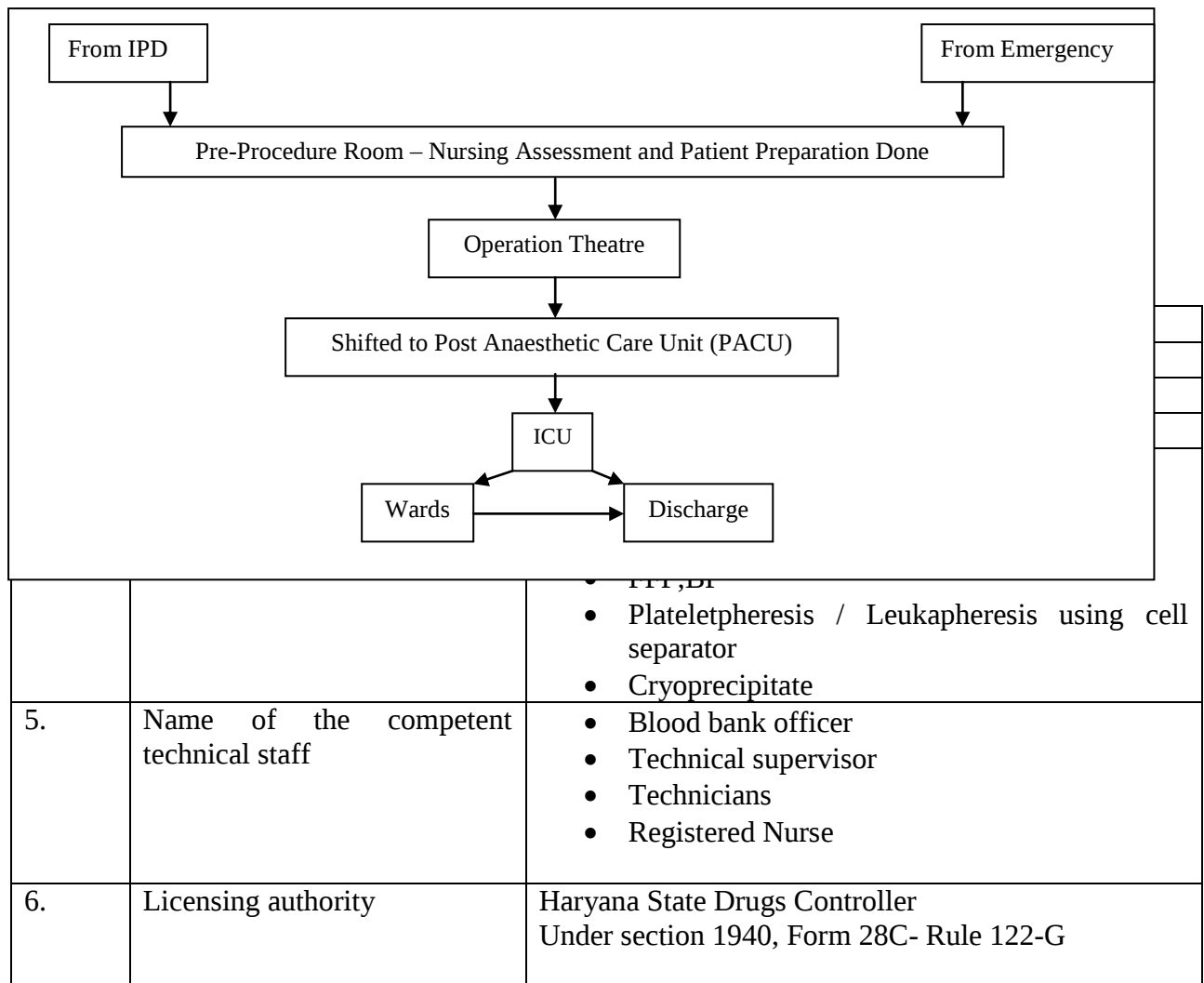
b) Operation Theatre

The OTs of Medanta the Medicity are situated on the 1st floor. There are currently 23 OTs functional. Their break up is as follows:

Sr. No	OT Number	Specialty
1.	1-7	Cardiac OTs
2.	9A, 9B	Ortho OTs
3.	10, 11	Neuro OTs
4.	12 A, 12B	Liver Transplant OTs
5.	14, 15, 16	GI and General OTs
6.	17, 18, 19	Uro OTs
7.	20, 21, 22	ENT, Head and Neck, and Plastic Surgery
8.	Upper Ground Floor OT	Mixed, but majorly for Gynae and Emergency cases

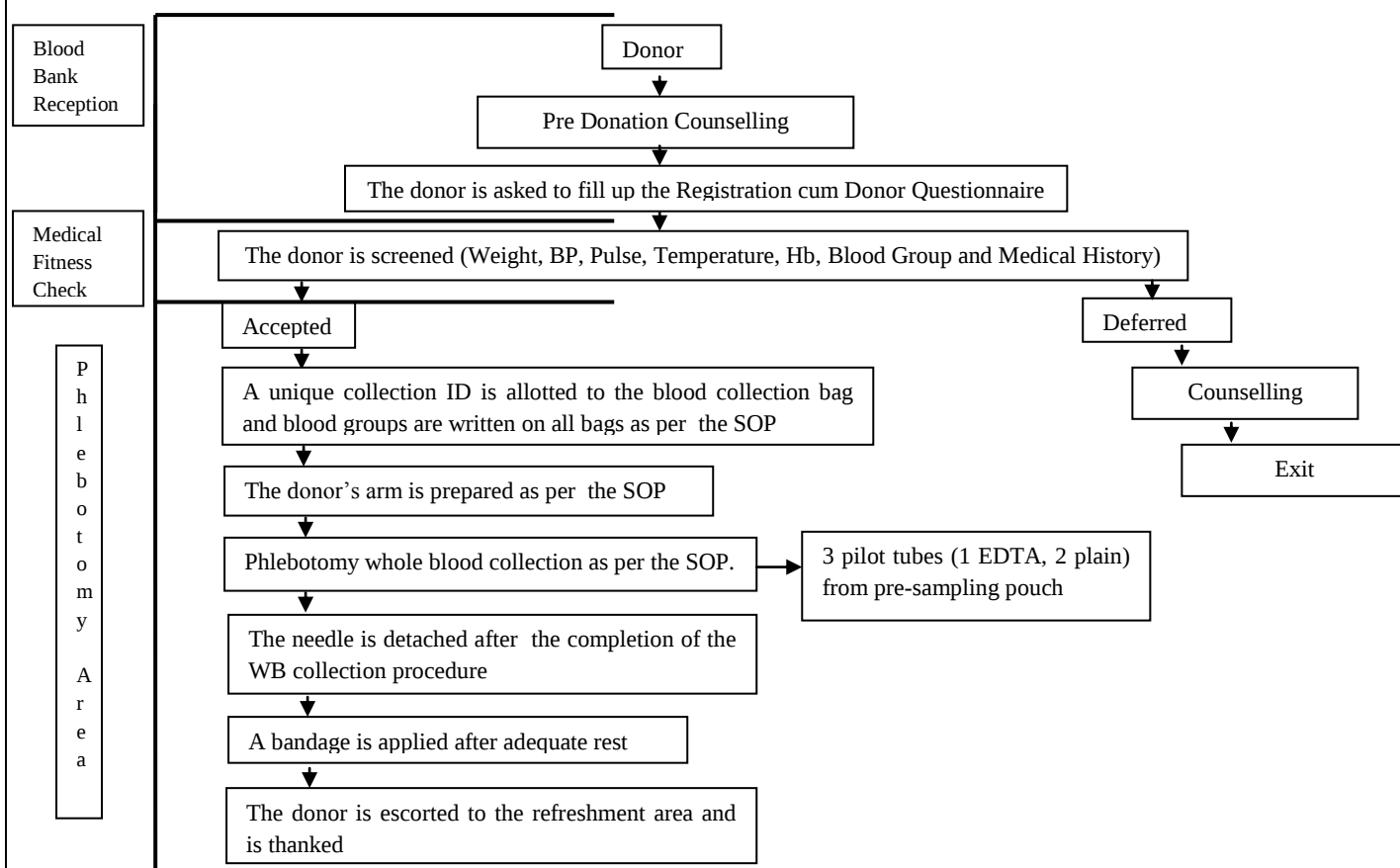
Around 70-80 surgeries are performed daily. The general flow of the patient in the OT is as follows.

Figure 3: Process Flow in OT



The Blood Bank of Medanta the Medicity is situated on the Upper Ground floor. Medanta has a policy of asking patients to arrange for a specific amount of blood before their procedures, so that there is no possibility of a situation arising where there is a shortage of blood during a procedure. The general process flow of whole blood donation in this department has been enumerated below

Figure 4: Process Flow of Blood Donation



Instead of beds, the blood donation area had couches where patients are asked to sit and the incline of reclining can be changed as per need. Blood donation consists of WB donation and Platelet Apheresis donation. After the whole blood is collected, the blood is split into separate components, and is stored in walk-in fridges after proper labelling. The blood bags are labelled according to the following legend:

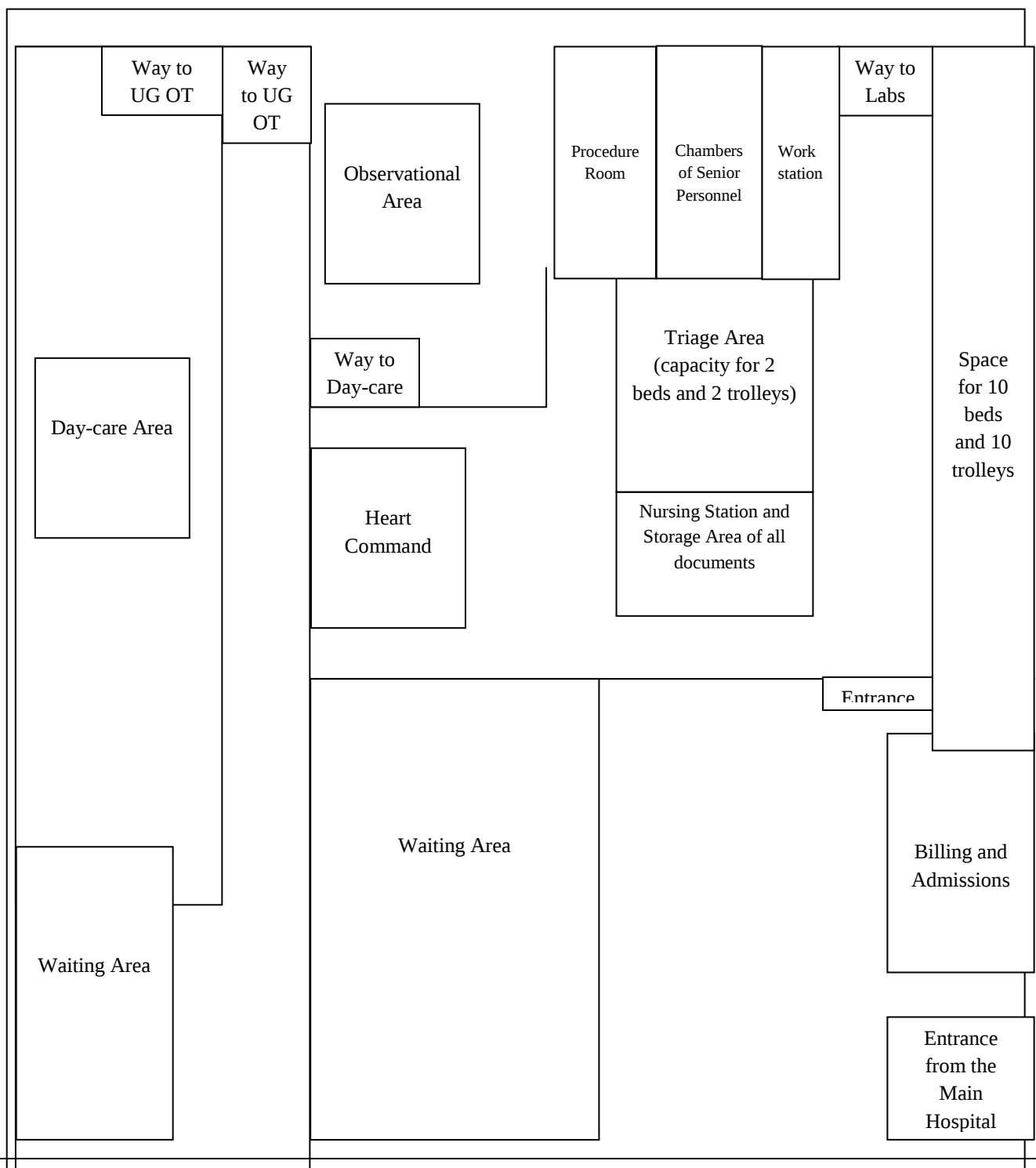
Sr. No	Blood Group	Label Colour
1.	B	Red/ Pink
2.	A	Yellow
3.	O	Blue
4.	AB	White
5.	RH +ve	Black
6.	RH –ve	White

After splitting, the individual components can be stored for differing periods of time. Whole blood can be stored for 35-42 days, platelets can be stored for 5 days in agitators at temperature of 22 degrees Celsius, Fresh Frozen Plasma can be stored for up to 1year at a temperature below -50degrees Celsius and RBC can be stored for 4-6 days.

d) Emergency Department

The Emergency Department of Medanta the Medicity is situated on the Upper Ground floor, and the entrance is from a route different than the main entrance to the hospital. The rough layout of the Emergency Department is shown below.

Figure5: Layout of Emergency Department

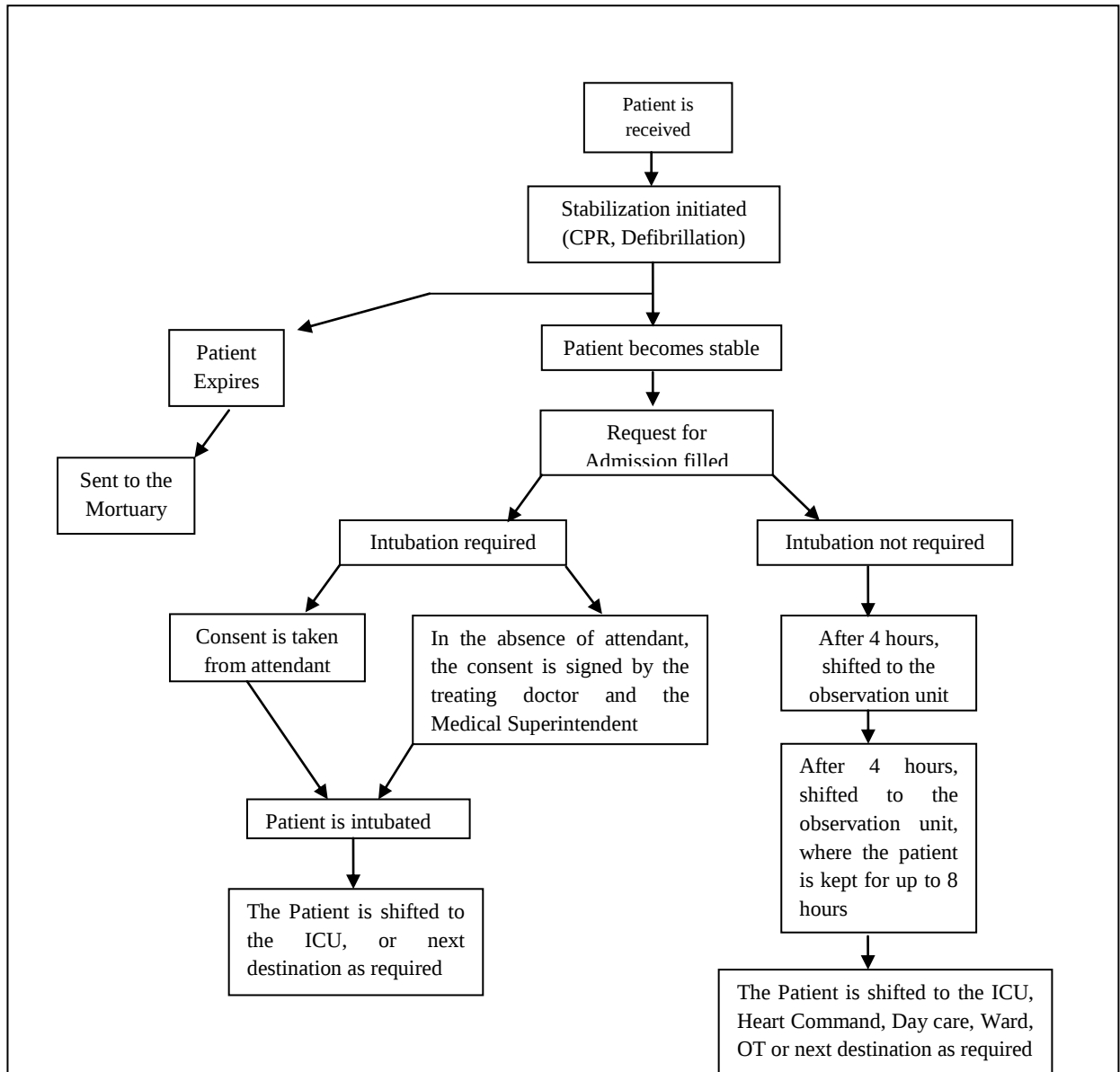


Emergency
Entrance

Emergency Entrance

The flow of information in the Emergency Department is as has been enumerated below

Figure6: Process Flow of Emergency Department



The Emergency Department at Medanta the Medicity receives about 100 cases per day. It is divided into areas as has been enumerated below.

S.No.	Area	Specifications			
		No. of cubicles	No. of beds + trolleys	Mortalities /month	Others
1	Triage	10	10+10	3-9	-
2	Observational area	08	08+08	10-12	-
3	Day care	06	06+02	NIL	Recliners

					- 04
4	Heart command	19	19+00	15-16	-
5	Procedure room	-	01+01	-	-
6	Emergency OT	-	-	Variable	OT's- 2

The patients coming in to the emergency department are triaged according to the Australasian Triage Scale. These patients are then allotted wrist bands for colour identification according to the parameters that have been enumerated below.

COLOR	INDICATION
White Band	Inpatient
Red Band	Allergy
Yellow Band	Diabetes/Kidney disease No I/V prick No measurement of BP
Blue Band	Vulnerable/ High Risk patients

The Emergency Department of Medanta the Medicity offers ambulatory services, the details of which have been enumerated below.

Sr. No	Parameters	Details
1.	Number of Ambulances	8
2.	Types of Ambulances	• Basic life support • Advanced life support • Air Ambulances
3.	Air Ambulance	• Non Scheduled passenger air ambulance • 40-50 patients are brought in by through this method every month
4.	Air Ambulance Staff	• Anesthetist • Cardiologist • Emergency medical officer • Nurse

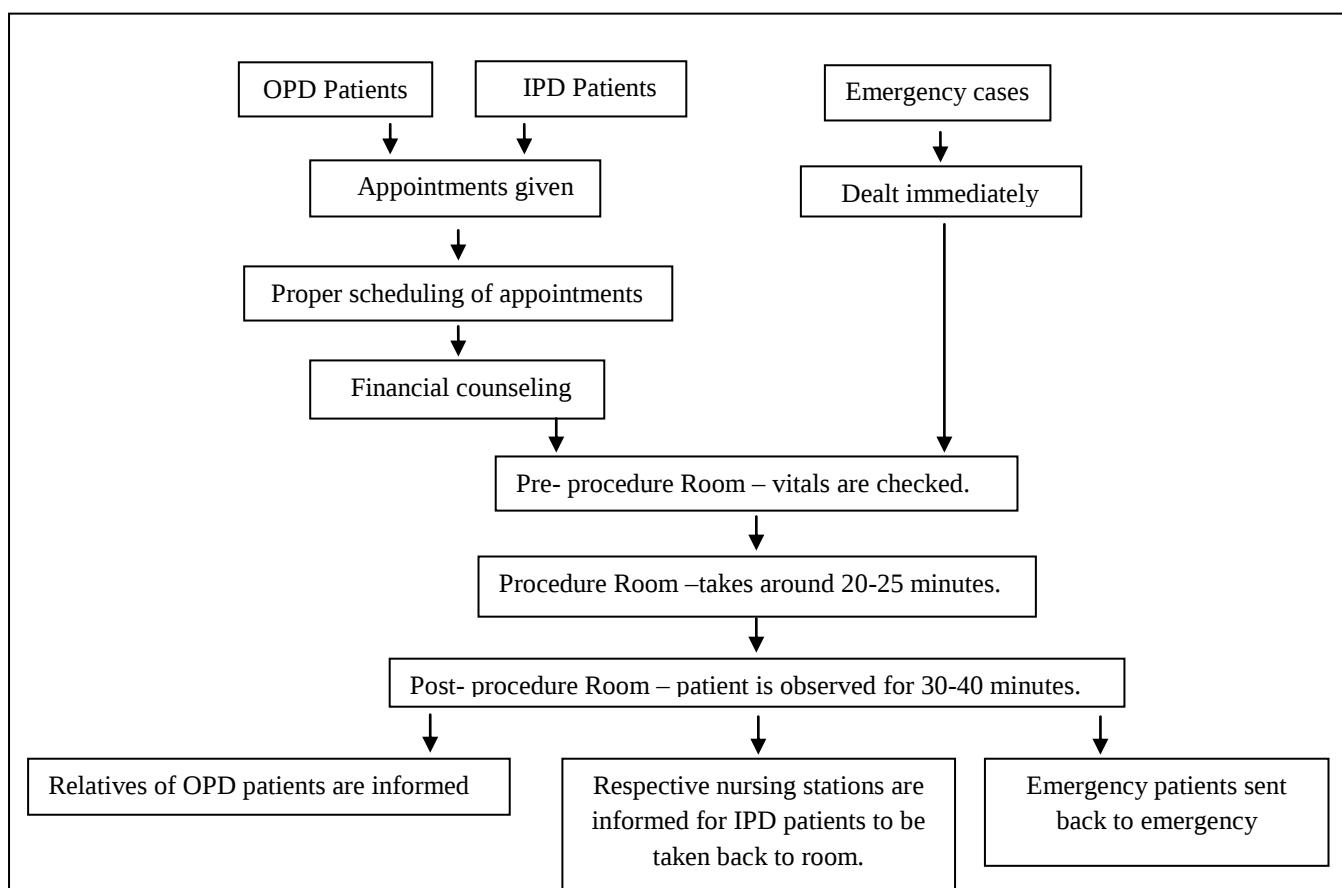
e) Endoscopy

This department is situated on the 11th floor of Medanta the Medicity. On an average, 40-50 procedures are carried out per day, the details of which are as follows:

- 20-25 are endoscopy
- 10-12 are colonoscopy,
- 5-8 are EUS
- 5-8 are ERCP's.

Total time taken for endoscopy inclusive of the patient preparation time is around 45 minutes in which the procedure time of endoscopy is actually just 5 minutes. For EUS, the procedure time is 30-40 minutes and for ERCP the procedure time is 20-30 minutes. The process flow for this department is as follows:

Figure 7: Process Flow of Endoscopy Department



f) Radiology

The Radiology department is situated on the upper ground floor of Medanta the Medicity. The general process flow of the Radiology Department is as has been enumerated below.

g) CSSD

The Central Sterile Supply Department of Medanta the Medicity is situated on the lower ground floor. It is spread over an area of 1250 sq ft and is the biggest CSSD in the Asia Pacific region. This CSSD is capable of catering to all the requirements of the hospital.

The various areas of the CSSD, along with a list of the activities that take place in each department are as have been enumerated below.

Sr. No	Area	Functions
1.	Receiving Area	All the infected instruments are received and their quantity is verified.
		They are washed under water and in ultrasonic cleaners.
		These instruments are then dried with an air gun and subsequently put in a Yorco oven for complete drying.
		All instruments are then put into a washer-disinfection machine. This machine is equipped with double doors in order to facilitate collection directly from the processing area.
2.	Processing Area	This area receives cleaned instruments and in this area, the instruments are separated by the personnel according to the checklists.
		The instruments thus separated are put into trays which are wrapped with a double layer for infection control.
		These trays are then labelled and thrium indicators are put on these trays as a measure of the quality of sterilization.
		The sterilization method is selected according to the instruments in question. The methods of sterilization that may be used are LTSE (low temperature steam formaldehyde) or Plasma Sterilization.
3.	Sterile Area	All the sterilized instruments are collected in the sterile zone through the doors of the sterilization equipment opening in that area.
		These equipments are separated according as per the quantities received from each department and are put on separate racks.
		Low temperature and positive pressure is maintained in this area for infection control.
4.	Issue Area	Instruments are sent to the OT directly from the sterile area through a

		lift in the issue area to prevent any kind of cross contamination.
		All the other instruments are loaded on to covered trolleys and are then sent to the issue areas of specific departments, to be issued as and when required.

h) Dietetics, and Food and Beverages

These offices are situated in the lower ground floor of Medanta the Medicity. These departments are tasked with managing the dietary needs of the patients coming into the hospital. This task is made all the more difficult by the fact that the hospital caters to the needs of over 1200 patients (beds) per day. The enormity of this task can be appreciated by the fact that most five star hotels are able to handle only up to 600 clients per day, and the Food and Beverages Department of this hospital has to be able to serve close to 7000 meals per day.

In order to be able to cater to the delicate yet crucial needs of all the patients coming in to the hospital, most of the Food and Beverage functions are outsourced (the company to which the functions are outsourced shall hence be referred to as the 'Partnering Company'). All heavy equipments in the kitchen are property of GHPL Pvt. Ltd, and the Partnering Company has the responsibility of bringing in only light equipment like cutting knives, etc. All such light equipment are colour coded in order to prevent cross-contamination, so, for example, the equipment used for cutting poultry (coded yellow) will not be used for cutting fish (coded blue).

With respect to ensuring quality of services, GHPL Pvt. Ltd maintains service level agreements with the Partnering Company, and both strive jointly towards maintaining the quality standards. Both GHPL Pvt. Ltd. and the Partnering Company have representatives present on each floor, and these representatives jointly keep a check on any issue that may crop up on a floor.

The Dietetics department is tasked with the specialized function of ensuring that a patient is not presented with a meal that may not be in compliance with the treatment that the patient has come to Medanta for. To be able to deliver on this front, the dietician's role includes checking the diet of all the patients periodically, going on rounds of the patients with the chairpersons, solving patient queries related to diets, planning the diets of the patients and coordinating with the kitchen in order to ensure the provision of the right quality food to the patients.

Finally, these departments also maintain a chart of the amount of food wasted per day (wasted food is discarded) and thus, a strict control is maintained on the inventory of all food items.

i) Marketing

This department is situated on the lower ground floor of Medanta the Medicity. The chief function of this department, as the name suggests, is to market the services of Medanta the Medicity.

Medanta is now at such a stage of its life cycle that it need not indulge in extensive marketing activities. Medanta the Medicity is a brand name recognized internationally, which is evident from its large international patient base. In fact, this brand is so well known that Medanta the Medicity has not even invested in large billboards (to be erected on top of the building) and does not spend too much on Out-Of-Home advertising. This hospital does have a strong presence on Facebook, and is followed on Facebook by many.

This uniqueness of the hospital lies in the services that it offers, and the quality of services offered. This is why most of the marketing that this hospital enjoys is through ‘word of mouth’. The clinical team employed at Medanta the Medicity is among the finest in the Asia Pacific region, and the technology used here is among the finest in the world. All these factors have come together to make Medanta the Medicity the strong brand it is.

A majority of the activities of the marketing department comprise of CSR initiatives. Medanta the Medicity has partnered with a number of charitable organizations and conducts periodic camps in various areas. Medanta has acquired a mobile van titled ‘Sanjeevan’, which is used to carry out camps in distant areas. This van is equipped with all modern diagnostic facilities, and includes equipment for Mammography, X-Ray and other facilities.

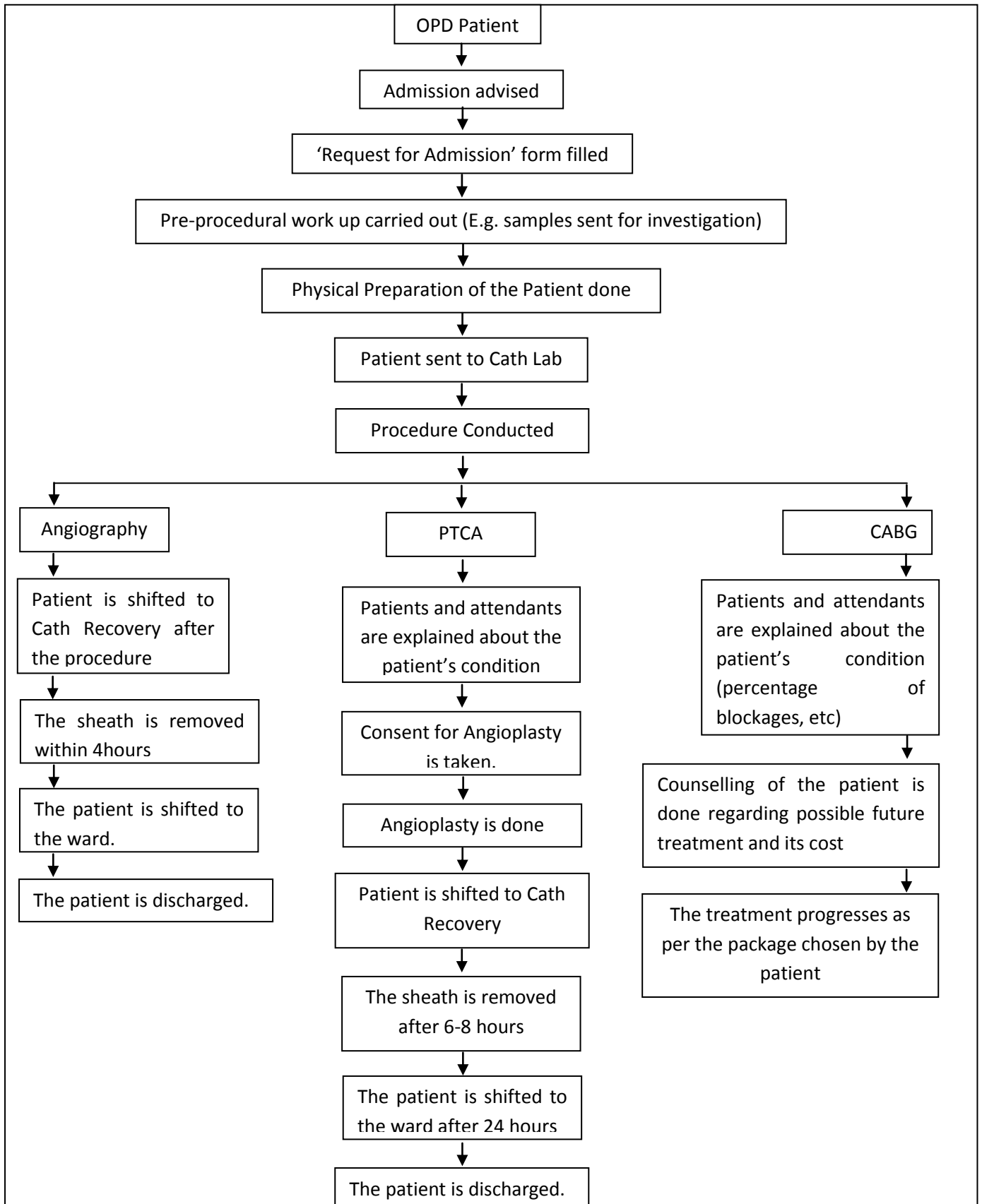
j) Engineering

The Engineering department is situated on the first basement of Medanta the Medicity. This department is responsible for catering to all the electrical needs of the entire hospital. The Engineering department is responsible for centrally providing water, electricity and air to the entire hospital. Eighty percent of the Engineering Department is outsourced, and the staff employed by Medanta the Medicity is tasked with supervising the functions of the outsourced staff and ensuring that quality work is delivered, as these requirements of water, electricity and air are crucial to any enterprise, and especially in hospitals.

The engineering department of Medanta the Medicity has employed 6 generators of 2000kva, to provide electricity back-up to the entire hospital.

k) Cath Lab: The Cardiac Cath Lab is situated on the third floor in the IPD area. There are a total of four Cath Labs and one DSA Lab. The flow of the Cath Lab takes place through the POCU, the Cath Lab and the Cath Lab recovery area as has been enumerated below.

Figure8: Process Flow



l) Radiation Oncology

This department is situated on the lower ground floor. It has an Integrated Brachytherapy Unit (IBU) for intra operative and post operative treatments for cancer related to the cervix and soft tissue sarcomas along with prostate seed implants. The procedure rooms have been made keeping in mind the AERB (Atomic energy regulatory board) standards.

Innovative techniques such as Robotic Radio Surgery with the world's first Cyberknife VSI system; Image Guided Radiotherapy (IGRT) with X-Ray Volume Imaging are some of the super-specialty treatments offered by this department of Medanta the Medicity.

m) Intensive Care Unit

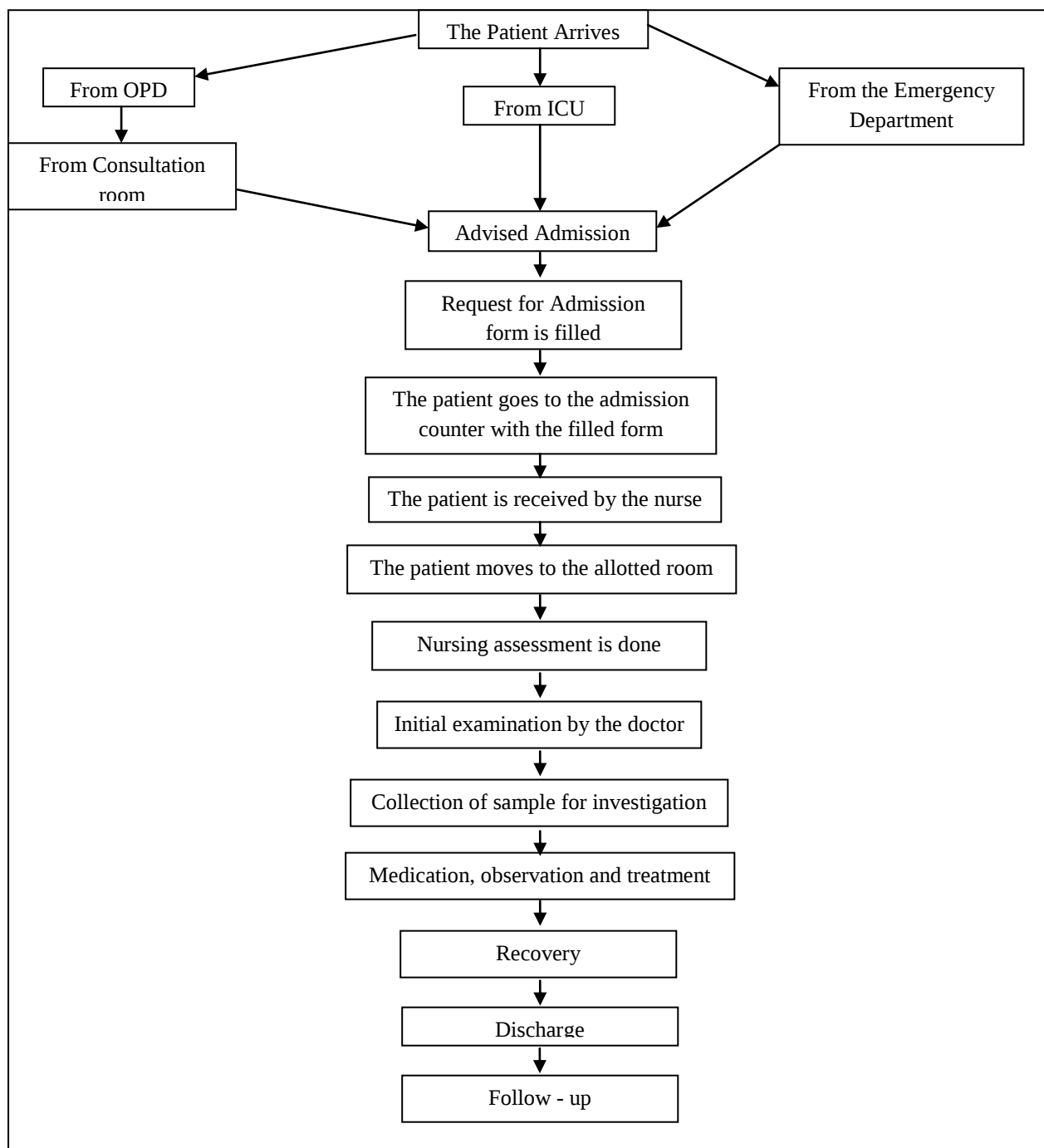
The distribution of the Intensive Care Units of Medanta the Medicity is as has been enumerated below.

ICU Number	Details
ICU 1	22 beds, (16 for Cardiac and 6 for Pediatric)
ICU 2	22 beds, (CTVS)
ICU 3	22 beds, (General 10, Neuro Surgery 10, Dialysis 2)
ICU 4	22 beds, (liver Transplant 8, Gastro + GI 14)
ICU 5	24 beds, (Medical ICU 18, General Paediatrics 6)
Ortho ICU	12 beds
HCC	18 beds
ICCU	22 beds, (CTVS 12, Cardiac 4, Kidney Transplant 6)
Pre and Post Cath Lab	26
HDU	10th floor (10 beds)
	Total Beds = 200 beds

n) In-Patient Department

Each clinical institute of Medanta the Medicity has its own In-Patient Department. Thus, there is an In-Patient Department in each floor of Medanta the Medicity. The general process flow is as has been enumerated below.

Figure 9: Process Flow of IPD



o) Medical Records Department

The Medical Records Department of Medanta the Medicity is situated on the lower ground floor of the hospital. This department is tasked with storing all the physical medical records generated in the hospital. Once a medical record is received by the department, a unique reference number is generated through Microsoft Excel, and the medical record is stored according to this number. MLC records are stored in a yellow file, and the records of expired patients are stored in a red file.

The Medical Records Department maintains the records of each patient file it receives for a period of 5 years. During this period, if a certain file is requested for reference/research purposes by any department of the hospital, the clock of storage is restarted. Apart from these functions, the personnel of the Medical Records Department may also be required to attend to calls from the courts of law, with the files of any patient as and when required.

p) In-Patient Pharmacy

The In-Patient Pharmacy of Medanta the Medicity is situated on the lower ground floor. This department is tasked with handling the responsibility of helping ensure that the correct medication is available with the IPDs of all clinical departments at all times. The medicines procured by the In-Patient Pharmacy are decided by the Pharmacy and Therapeutic Committee of this hospital.

The IPDs of all departments use a system of indenting to procure medication. These indents are sent to the In-Patient Pharmacy as and when required by the IPD. The indents are then ranked according to urgency by the dispensing pharmacist and these medicines are taken out from the stores and the change in quantity of the inventory these medicines is recorded by the pharmacist.

There are 4 types of licenses maintained by this department, obtained from the Excise Office, Gurgaon, with regard to the retail and wholesale of the following:

- Narcotics
- Denatured Spirit
- Morphine
- Fenetanyl (2ml and 10ml)

The In-Patient Pharmacy department maintains 16 days worth inventory of medicines with it for emergencies, and ensures that medicines are returned to vendors 3 months prior to their expiry.

q) Dialysis

The Dialysis unit is situated on the 12th floor. There are 12 dialysis machines and the number of cases done per day is around 55 cases (45 OPD + 10 IPD)

r) Housekeeping

This office of this department is situated on the lower ground floor of Medanta the Medicity, and is tasked with managing the sanitation needs of the patients coming into the hospital. This task is made all the more difficult by the fact that the hospital caters to the needs of over 1200 patients (beds) per day. The enormity of this task can be appreciated by the fact that most five star hotels are able to handle only up to 600 clients per day.

In order to be able to cater to the delicate yet crucial needs of all the patients coming in to the hospital, most of the Housekeeping functions are outsourced (the company to which the functions are outsourced shall hence be referred to as the 'Partnering Company'). All the cleaning material is the property of GHPL Pvt. Ltd. The Stores of Medanta the Medicity issue cleaning material to the personnel on the different floors as per levels decided through an exercise that was conducted, to ensure that such material is not wasted. Any extra requirement requires permission and explanation. This exercise had been conducted to determine the room-wise and floor-wise requirement of cleaning inventory.

With respect to ensuring quality of services, GHPL Pvt. Ltd maintains service level agreements with the Partnering Company, and both strive jointly towards maintaining the quality standards. Both GHPL Pvt. Ltd. and the Partnering Company have representatives present on each floor, and these representatives jointly keep a check on any issue that may crop up on a floor.

s) Medical Gases

This department is situated on the first basement of Medanta the Medicity. This department's chief responsibility is to ensure the timely provision of all the medical gases wherever they may be required. This department is responsible for the inventory control of the following gases:

- Oxygen

- Carbon Dioxide
- Nitrous Oxide
- Vacuum (for suction purposes)
- Medical Air

This department is also responsible for maintaining inventories of the cylinders that may be used during patient transport. The colour coding of these cylinders is as has been enumerated below.

Sr. No	Item	Colour Code Used
1.	Oxygen	White
2.	Nitrous Oxide	Blue
3.	Vacuum	Yellow
4.	Medical Air	Black
5.	Carbon Dioxide	Grey

The cylinders have a black body, but the top of the cylinder of the cylinder is painted according to the above legend. The pipes used for transporting these gases within the hospital also follow the above colour coding.

Other Specific projects:

1. Ideal ICU design from infection control point of view:

This was a good learning for me to see everything for different users from their point of view. The project involved the audit of ICU finding out the problem areas and framing the solution to address those areas.

2. MDRO policy framework:

This project involved the designing a comprehensive document to limit the multi drug resistant organism related infections from being entering into the hospital and if they enter what process flow need to be flowed to limit the spread of organism.

