

**Summer Training at
Bhopal Memorial Hospital and Research Centre
Bhopal
(April - June, 2013)**

OVERVIEW OF VARIOUS DEPARTMENTS IN BMHRC

**By
Neelam Nayak**

**Under the guidance of
Dr. Ashok Kaushik**

**Post Graduate Diploma in Hospital and Health Management
2012-2014**



**Institute of Health Management Research,
Jaipur
2013**

**INSTITUTE OF HEALTH
MANAGEMENT RESEARCH**

1, Prabhu Dayal Marg
Sanganer Airport, JAIPUR - 302 011, INDIA
Tel. : 3924700, 2791431-32
Fax : 91-141-3924738
E-mail : iihmr@iihmr.org
URL : <http://www.iihmr.org>
Gram : HEALTHINST

CERTIFICATE

This is to certify that Ms.NEELAM NAYAK student of Post Graduate Diploma in Hospital and Health Management (PGDHM) from Institute of Health Management Research, Jaipur, Batch 17th has undergone summer training in BHOPAL MEMORIAL HOSPITAL AND RESEARCH CENTRE, Bhopal from April 8th to June 8th 2013.

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

I wish her success in all her future endeavors.



Prof. N. K. Sharma
Assistant Professor
Faculty and Mentor
IIHMR, Jaipur



Dr. Ashok Kaushik
Dean, Academic and Student Affairs
IIHMR, Jaipur



भोपाल स्मारक अस्पताल और अनुसंधान केन्द्र
BHOPAL MEMORIAL HOSPITAL & RESEARCH CENTRE



भारतीय आयुर्विज्ञान अनुसंधान परिषद

INDIAN COUNCIL OF MEDICAL RESEARCH

(DEPARTMENT OF HEALTH RESEARCH)

MINISTRY OF HEALTH & FAMILY WELFARE, GOVERNMENT OF INDIA

Raisen By Pass Road, Bhopal - 462 038 (M.P.)

Phones : +91 755 274 22 12, Fax : +91 755 274 83 09

Website : www.bmhrc.org

08/07/2013

CERTIFICATE

This is to certify that **Ms. Neelam Nayak** student of Post Graduate Program in Hospital Management from Institute of Health Management Research, Jaipur has successfully completed her project entitled **Overview of Various Department in BMHRC** from **08/04/2013** to **08/06/2013**. She was granted leave also during her training period towards her marriage. We wish her success in future.

Brig. (Dr.) K.K. MAUDAR
Director

Brig. (Dr.) K.K. Maudar
DIRECTOR

BHOPAL MEMORIAL HOSPITAL
& RESEARCH CENTRE, BHOPAL

NITIN BHATIA
Sr. Manager Operations

DECLARATION

This is to certify that Project Report entitled “Overview of Various Department in which is submitted by me in partial fulfilment of the requirement for the award of Summer training Program part of Post Graduation Diploma in Hospital management (2012-2014) comprises only my original work and due acknowledgement has been made in the text to all other material used.

Date:

Neelam Nayak

APPROVED BY

Mr. Nitin Bhatia

Senoir Operation Manager

BMHRC

Bhopal

ACKNOWLEDGEMENT

I take this opportunity to express my profound gratitude and deep regards In BMHRC Mr. Nitin Bhatia Sir for his exemplary guidance, monitoring and constant encouragement throughout the course of the training. The blessing, help and guidance given by him time to time shall carry me a long way in the journey of life on which I am about to embark.

I also take this opportunity to express a deep sense of gratitude to all The director, Departmental Head and all the BMHRC staff for the cordial support ,information and guidance which helped me in completing this task through the various stage.

I am obliged to IIHMR Jaipur's Professors ,teaching staff and my Mentor for the valuable information provided by them in their respective fields. I am grateful for their cooperation during ,pre and post period of my assignment.

Lastly, I thank almighty ,my parents, brother, sisters and friends for their constant encouragement without which this assignment would not be possible.

NEELAM NAYAK

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BHOPAL GAS TRAGEDY

The Bhopal Gas Tragedy, 1984 was a catastrophe that had no parallel in the world's industrial history. In the early morning hours of December 3, 1984, a rolling wind carried a poisonous gray cloud from the Union Carbide Plant in Bhopal, Madhya Pradesh (India). Forty tons of toxic gas (Methy-Iso-Cyanate, MIC) was accidentally released from Union Carbide's Bhopal plant, which leaked and spread throughout the city. The result was a nightmare that still has no end, residents awoke to clouds of suffocating gas and began running desperately through the dark streets, victims arrived at hospitals; breathless and blind. The lungs, brain, eyes, muscles as well as gastro-intestinal, neurological, reproductive and immune systems of those who survived were severely affected. When the sun rose the next morning, the magnitude of devastation was clear. Dead bodies of humans and animals blocked the street, leaves turned black and a smell of burning chili peppers lingered in the air. An estimated 10,000 or more people died. About 500,000 more people suffered agonizing injuries with disastrous effects of the massive poisoning. None can say if future generations will not be affected.

BHOPAL MEMORIAL HOSPITAL AND RESEARCH CENTRE

“Caring is a way of life”. This is the motto at Bhopal Memorial [Hospital](#) and Research Centre, a 350-bedded multi-specialty tertiary care centre situated at Bhopal, Madhya Pradesh, which is the centre / heart of India. The institute was started as per the directive of the honorable Supreme Court of India to provide advanced tertiary level super-specialty care to the victims of the Bhopal Gas Tragedy (1984) as well as to extend its services to the public at large.

The [hospital](#) is a referral and tertiary care centre for the thousands of gas tragedy victims who are first seen at the primary care level in the 8 mini units (satellite health centers) spread around in the city, and then referred to the advanced and specialized departments at the [hospital](#).

A sprawling, lush, green campus with a serene atmosphere greets the patients and their families when they reach the [hospital](#). A tribute to the gas victims named “Homage & Hope” provides a soothing and reassuring feeling to the patients and their families.

The state-of-the-art infrastructure of the [hospital](#) building with strategically designed health care facilities literally takes the breath away and yet lends a professionally confident quality to our care. Additional facilities like easily accessible rest homes and cafeterias add to the comfort level of patients and their caretakers.

It takes a lot more than engineering and technology to make up a [hospital](#). A team of diligent and dedicated highly qualified medical professionals, including specialists and super specialists, ably supported by efficient and warm nursing and paramedical staff is the crowing glory of this institution.

Health care is just the first step in our service to the community, and can never be complete without research and spreading knowledge through teaching. The institute has a highly advanced research centre. Teaching facilities include a nursing college and a paramedical institute. DNB courses are offered in some of the super-specialties like Cardio-thoracic Surgery, Gastro-surgery, Anesthesia and Critical Care, and Cardiology. Courses in other specialties will soon be available.

OBJECTIVES

- To provide state-of-the-art super-specialty medical facilities to all registered gas victims and their entitled dependents.
- To carry out basic, clinical and epidemiological research in all disciplines in the hospital.
- To determine long-term effects of Methyl Isocyanate (MIC) on human tissue and to plan treatment modalities based on the findings.
- To utilize the existing infrastructure to train doctors, nurses and paramedical personnel.

METHODOLOGY

The following methods were adopted to study the departments of hospital.

1. Observation
2. Interviewing the staff members of the department.
3. General survey
4. By studying the previous data of the hospital records.

REGISTRATION and OPD

OPD Timings -9 am to 2 pm

LOCATION- Centrally located Screening Clinic in connectivity to various departments , Emergency and road.

Waiting Area - It is well designed and there is ample of sitting arrangement near the registration counters of about 40 seats and also at OPD of different Department.

Registration counter – Two registration counter one for non payment patient and one for payment patient.

CATEGORY OF PATIENTS

S.NO	CATEGORY	CODING	UNIT No.	AREA
1.	Gas Victim	10	MINI UNIT 1	Kainchi Chola
2.		11	MINI UNIT 2	Station Bajaria
3.		12	MINI UNIT 3	Chanbad
4.		13	MINI UNIT 4	Tila Jamalpura
5.		14	MINI UNIT 5	GInnori
6.		15	MINI UNIT 6	Jahingira bad
7.		16	MINI UNIT 7	Karond
8.		17	MINI UNIT 8	Bal vihar
9.	Gas Victim Dependent	30 - 37		
10.	Employees	80	-	-
11.	Employees dependent	81	-	-
12.	Private Patient	90		

SOFTWARE USED – Admission Discharge Transfer (ADT Software) and Billing software.

Gas Victims

The Hospital is specially designed and functional for Gas Victim of Bhopal Gas Tragedy happened on 2 -3 dec 1984 . The people residing near the gas effected area are considered as gas victim and their dependents. The new born from Dec 2 1984 to 31st dec 1985 in that area are also considered as gas victim.

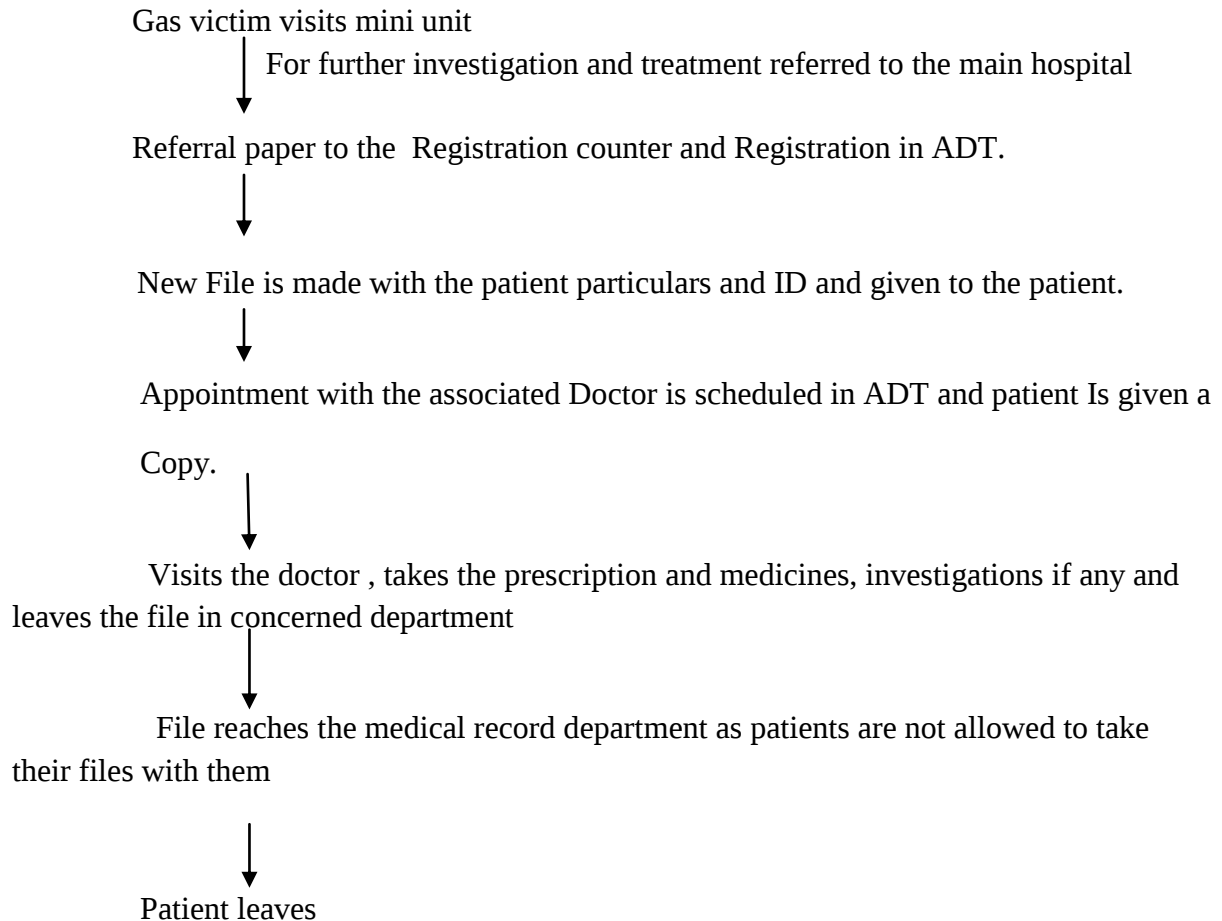
For registering themselves in the hospital and the mini units they require a smart card which has a unique coding according to the mini units they fall.

This **smart card** can only be prepared if they have appropriate document such as **ANTIM AADESH AND PRORETA BHUKTAN AADESH**. And for their dependent – Antim

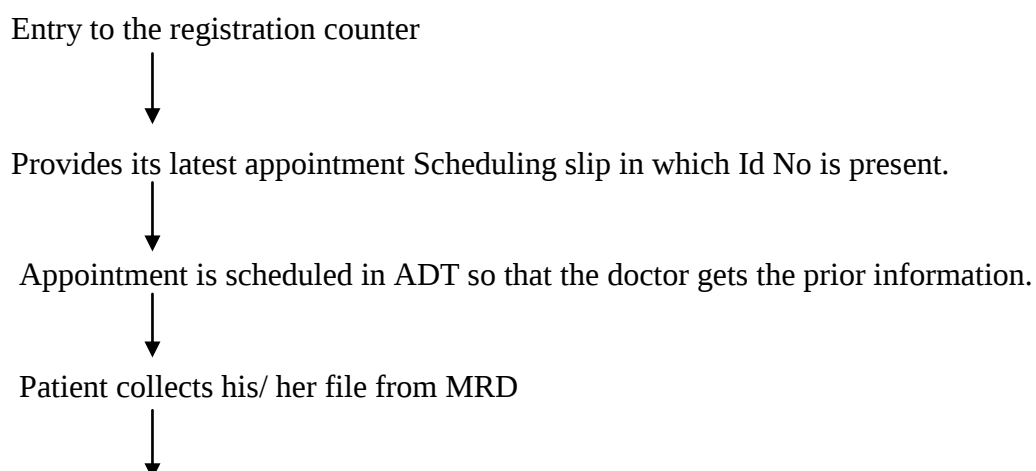
Aadesh and Proreta Bhuktan Aadesh of any of the Guardian. Smart card is used to avail benefit for the victims from the hospital. Approx. No. Of registered patient is 9 lakh.

PROCESS FLOW

- **NEW PATIENT-**



- **REVISIT PATIENT**



Visits the Concerned doctor and department. And if some other problem also exists the doctor refers the patient to the appropriate department and mentions in appointment schedule again the patient comes and schedules its appointment with

- **EMERGENCY PATIENT**

Patients directly go to the emergency department.



Emergency department gives a manual slip with patient's ID to the patient's Attendants and they get it registered in the registration.



At registration the patient is registered as admitted in ADT and a manual Admission form is filled and a yellow card is made as visitor's pass.

- **OPD TO IPD**

If the doctor feels that the patient requires a stay in the hospital, the patient is directly admitted from the OPD to the IPD. And follows the same 2nd and 3rd Step of emergency.

OPD SCHEDULING

Departments	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Anaesthesiology	✓	✓	✓	✓	✓	✓
Cardiology	✓			✓		
CTVS		✓			✓	
Gastro. Medicine			✓			✓
Gastro. Surgery		✓				✓
Neurology	✓		✓		✓	
Neuro. Surgery			✓			✓
Nephrology		✓			✓	
Urology	✓		✓			
Ophthalmology		✓		✓		
Pulmonary	✓			✓		
Psychiatry	✓	✓		✓	✓	

MEDICAL RECORD DEPARTMENT

Medical Records Department is responsible for keeping patient's medical records safely at all times. It plays an important role in health care institutions as being a referral centre for patient's treatment and care. Success or failure of a health care institution somewhat or rather depends on how well the medical records are managed. More than that, Medical Record Department also handles application for medical report and information as well as documentation.

Category of patients

Category	Code	Area
1. Gas Victim		
Mini Unit 1	10	Kaichi chola
Mini Unit 2	11	Station bajaran
Mini Unit 3	12	Chandbar
Mini Unit 4	13	Tila jamalpur
Mini Unit 5	14	Ginnori
Mini Unit 6	15	Jahangirabad
Mini Unit 7	16	Karond
Mini Unit 8	17	Balvihar
2. Gas Victim Dependent	30-37	
3. Private Patient	90	
4. Staff	80	
5. Staff Dependent	81	

Staff

Senior Medical Record Officer

Supervisor

IPD MRD- 3 Computer Operator

OPD MRD -3 Computer Operator

Attendants – 12

WORK FLOW

Gas victim first visits Mini Unit (1 to 8 any) present in different parts of Bhopal for primary treatment.

A unique ID is generated starting from the above mentioned code which is valid for life time.

In case of major problem, they are referred to the main BMHRC hospital and they come to the registration counter.

They come with their ID and on registration their entire information is generated from their they are directed towards the concerned doctor.

Their file is made with basic information and is given to the patient and side by side the MRD comes to know about the patient details via intranet and where they have been sent for treatment.

The patient visits the doctor and go through the investigations prescribed by him/her and leaves the file in OPD

After 3 pm the MRD attendant go and visit each and every OPD and Ward and collects the OPD and IPD file.

There they sort and arrange the file according to the ID in the appropriate place.

Next time the patient comes and register itself in registration and is directed to MRD for collecting its file , by the time the patient reaches MRD its file is given hand to hand as they get to know the patient is coming through intranet system and collects the file.

And thus visit the OPD and leaves the file their and same procedure takes place

Entire information ,reports and everything is maintained in file and the file remains in hospital campus always

The computer operator enter the entire information of the patient as backup in ADT software.

The files are also located through the bar code system (bar code on every file)

From 2000 till up to date the files are present and whenever any patient or their relative comes for LIC, re-embusment or death certificate their file is tracked and given.

MEDICAL RECORDS IN FILES

Admission and discharge slip
Hospital Admission Slip
Temperature chart
Discharge / Death summary
Death certificate
History sheet
Doctors Order sheet
Progress Record
Performa of patient of referral of BMHRC
Nurse progress record
Preoperative order
Preanesthetic order
Pre operative checklist
Consent form
Operation record
Medication record
Reference form
ECG/ cardiology Report
Pathology /lab investigation
Police information form
Other document

Software used- ADMISSION DISCHARGE TRANSFER (ADT)

MRD IPD

Mid Night census is received from 14 wards daily in the morning with following particulars;

Date_____ Day_____ Ward_____

Admission details ID Name Sex Age Bedno.

Discharge details ID

Transfer

LAMA

Death

On the basis of this summary a **daily basis report** is prepared

Admission Discharge Transfer LAMA Death

Male	Female	Total
------	--------	-------

Bed occupancy is calculated monthly basis

Bed occupancy is calculated yearly basis

Report is signed by senior medical officer

Then by Operational head

Sent to the Director

Details of OPD , IPD , MLC and Death Files From 2001 till Jan 2010

Series	OPD files in rack	IPD files in rack	Total	Year	Total Death Files
10000000	6557	4394	10951	2001	
11000000	6232	4955	11687	2002	77
12000000	6588	4583	11171	2003	330
13000000	8384	4390	12774	2004	394
14000000	12423	7549	19972	2005	511
15000000	9416	7475	16891	2006	518
16000000	7431	4721	12152	2007	555
17000000	2984	4556	7540	2008	655
30000000	775	329	1104	2009	656
80000000	429	2004	2433	2010	617
81000000	806	524	1330	2011	586
90000000	40176	21509	61685	2012	629
Total	103201	66489	169690		5528

WARDS

WARDS	BED CAPACITY
1. Cardiology	30
2. Critical care Unit	10
3. Cardio Thoracic Vascular surgery	30
4. Cardio Thoracic Vascular ICU	6
5. Gastro Intestine Medicine	30
6. Gastro Intestine	30
7. Nephrology	11
8. ICU	15
9. Neuro Medicine	30
10. Neuro surgery	28
11. Ophthalmology	35
12. Private	24
13. Pulmonary	30
14. Urology	28
15. Emergency	5

Visited ward and ICU in BMHRC – CTVS

CTVS Ward

Area In the Ward

Reception

Doctors Room

Nurses Room

Nursing Station

Dressing room

Minor OT

Store room

Toilet

STAFF

Nursing Superintendent

Supervisor

Nursing Staff – 5

Ward boy – 5

Admission in Ward – From OPD, Emergency, ICU.

Doctors Round – Round the clock

Shifts:-

8am to 2 pm morning shift

2 pm to 8 pm evening shift

8pm to 8 am night shift

Cleaning – 3 shifts cleaning

Volume – 10 patients weekly approx.

Visiting hours -5pm to 6:30 pm

EQUIPMENTS

Defibrillator /monitor/recorder

Pulse Oximeter

Atlas monitor

VEDA monitor

Syring Pump (medex)

Digital Infusion Pump (CURE-MATE)

C-PAP System

Patient Monitor

Patient Monitor

Cardiac monitor mult. Func. Device

Air mattress pump

Suction machine

Needle Destroyer

Weight machine

CTVS ICU

Intensive care units (ICU), also called critical care or intensive therapy departments, are sections within a hospital that look after patients whose conditions are life-threatening and need constant, close monitoring and support from equipment and medication to keep normal body functions going. They have higher levels of staffing, specialist monitoring and treatment equipment only available in these areas and the staff are highly trained in caring for the most severely ill patients.

Beds- 6 (open)

STAFF

Nursing Supervisor -1

Nursing Staff – 12

RECORD OF THE PATIENT

Admission and Discharge Register

Following Particulars

Age	sex	ID no.	Address	Date of admission	Operated case	Time in	Time out
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Doctor's Round

Morning – 9am

HOD round – 11 am

EQUIPMENTS

Defibrillator /monitor/recorder (Condemned)

Ventillator for ICU,ICCU.

Ventillator invasive

Ventilator invasive

Compressor compact

Blood Gas analyser with electrolyte Unit

BED Side Monitors for ICU/ICCU

Modular monitor AS/3

Light transport monitor for invasive pressure

C-PAP System

Chest Vibrator

Single invasive pressure module(P/3)

Single invasive pressure module(P/3)

Ultrasonic Nebulizer

Ultrasonic Nebulizer

Syringe infusion pump (B.Braun)

Syringe infusion pump (B.Braun)

Syringe infusion pump (B.Braun)

Syringe infusion pump (B.Braun)

Chest Vibrator (Condemned)

Syringe infusion pump (B.Braun) (Condemned & handed over to store)

OPERATION THEATRE

Operating theater (or **theatre**) is a non-sterile, tiered theatre or amphitheatre in which students and other spectators could watch surgeons perform surgery. Within the Commonwealth nations, the term is used synonymously with **operating room (OR)** or **operating suite**, the modern facility within a hospital where surgical operations are carried out in a sterile environment.

Number of operation theatre in BMHRC

GASTRO. OT – 3

UROLOGY OT – 2

CARDIACLOGY OT – 3

OPHTHALMOLOGY OT – 3

NEUROLOGY OT – 2

Visited OT- GASTRO. OT

AREAS IN OT

1. Changing room (4)
 - For male staff
 - For female staff
 - For Doctors
 - For Attendant
2. Doctor's Lounge
3. Patient Corridor
4. Store Room
5. Sterilization room
6. Scrub room
7. Pre Operative area
8. Post Operative area
9. ASWL lithotripsy area
10. OT 1
11. OT 2

EQUIPMENTS

Anaesthesia Pendant System for OT's
Laparo – choledocho – Fiberscope steerable
HOPKING II Straight Forward Telescope 10mm 0 deg.
HOPKING II Straight Forward Telescope 10mm 30 deg.
Xenon/halogen universal light source
Light guide with condenser system
Endoscope video monitor 14”
Insufflation unit
Suction & irrigation unit
Autocon – 200 high frequency surgery unit
Imaging cart (trolley)
Surgical Instruments set for laparoscopy & Colecystectomy
Cusa knife sonaca 300
Argon beam Coagulator
Fully stainless steel aseptic automatic scrub station
Fully stainless steel aseptic automatic scrub station
Head Light
Operation Table(Hydraulic)
Electrosurgical Unit
Defibrillator /monitor/recorder
Flexible choledocoscope with adaptor
OT Combination Ceiling Light
Light Source
Mobile Light
Surgeons Pendant for OT's

STAFF

Nursing Supervisor

Technician Supervisor

Technicians- 4

Nursing Staff - 3

Attendant – 2

WORK FLOW

Patient from the ward or from OPD comes for operation as per the prior scheduling by the doctor

Pre- Operation Recovery all the investigations are carried out and Anaesthesia is given to the patient

OT gets ready for operation prior and history of the patient is discussed among the doctors.

Patient on the OT table and handover of the patient

Precheckup list is checked

Operation takes place

Post operation Recovery

Patient is shifted to the ward.

Temperature of OT- 18 – 20 degree Celsius

Fumigation – Daily evening Bacilicyl suspension spray

Cleaning – Prior every operation

Filters – HEPA

No. Of Operation – 5 approx

Sterilization – In sterilization machine present in OT and in evening 4 pm sent to CSSD for sterilization.

Biopsies – Routinely sent to histopathology lab and frozen section for cancer detection.

EMERGENCY

An **emergency department (ED)**, also known as **accident emergency (A&E)**, **emergency room (ER)**, or **casualty department**, is a medical treatment facility specializing in acute care of patients who present without prior appointment, either by their own means or by ambulance. The emergency department is usually found in a hospital or other primary care centre.

Due to the unplanned nature of patient attendance, the department must provide initial treatment for a broad spectrum of illnesses and injuries, some of which may be life-threatening and require immediate attention. In some countries, emergency departments have become important entry points for those without other means of access to medical care.

STAFF

Nursing Staff -5

Supervisor -1

Attendant -4

Cleaning Staff – 2

EQUIPMENTS

Pulse Oximeter

Cardiac monitor mult. Func. Device

Defibrillator

Mobile OT light (Transfer from MU)

Nebulizer

Needle Destroyer

Suction machine

Foot Padle Suction machine

Weighing machine

Pulse Oximeter (Transfer to Bio-medical)

Suction machine (Condemned)

WORK FLOW

Patient in serious condition in Emergency

Vital Test of the patient by the nursing staff.

Check up by the Doctor.

If condition is normal then the patient is given the required medicine and then discharged and if condition of the patient still deteriorate then the concerned doctor is called from the specialized department.

If the problem still exists then the patient is admitted in the concerned department.

Registration of the patient.

Investigations and test.

BED CAPACITY – 5

Staying hours in emergency - 4 -5 hrs

CENTRAL STERILE AND SUPPLY DEPARTMENT

Central sterile and supply department is situated near the Operation Theatre so as for faster access .It is functional 24 hrs and one technical staff is present throughout the night. The Central Sterile Supply Department (CSSD) is a specialised area responsible for the collection, decontamination, assembling, packing, sterilisation, storing and distribution of sterile goods and equipment to patient care areas. Some of the service provided include:

- sterilisation reprocessing service for the operating suites.
- sterilisation reprocessing service for external agencies
- thermal decontamination for products not able to be sterilised.
- coordination of instrument repairs for the operating suite.

The various parts of CSSD is mainly divided into 1.STERILIZED ZONE

2. NON-STERILIZED ZONE.

The sterilization performed there are chemical sterilization and Physical sterilization.

PHYSICAL STERILIZATION

1. Hot air oven
2. Infrared radiation
3. Radiation
4. Foreign Heat
5. Incinerator

CHEMICAL STERILIZATION

1. ETO (Ethylene Oxide)
2. Plasma

The sterilization area is either U shaped aor Z shaped to avoid contact between sterilized and unsterilized item. The CSSD is further divided into :-

1. Trolley wash room
2. Changing Room
3. Receiving counter
4. Basin
5. Store Room
6. Cotton gauge tray area
7. Gloves disposal area
8. Wash Room

9. Sterilization Area
10. ETO store room
11. Delivering counter

STAFFING PATTERN

The department is headed by ANESTHESIA HOD.

Supervisor (1)

Technical worker (6) Casual worker (2)

EQUIPMENTS

- **PLASMA MACHINE / STERAD MACHINE**

In the plasma rubber goods are mainly sterilized and it gives a effective sterilization in a shorter duration of time and is very much used thes days because of its technical advancement. Hydrogen Peroxide gas is used for sterilization. The sterilization takes place in two cycles – Long Cycle of 72 min and Short Cycle of 55 min. The processing takes place as when the items are received firstly packaging packaging takes place in plasma packaging material on which indicators are present which changes its colour after reaching specific temperature to ensure sterilization is proper and the item is placed and following process takes place

1. Vacuum
2. Injection
3. Diffusion
4. Plasma
5. Vent

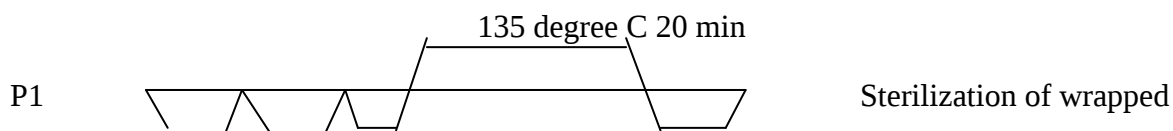
- **ETO MACHINE**

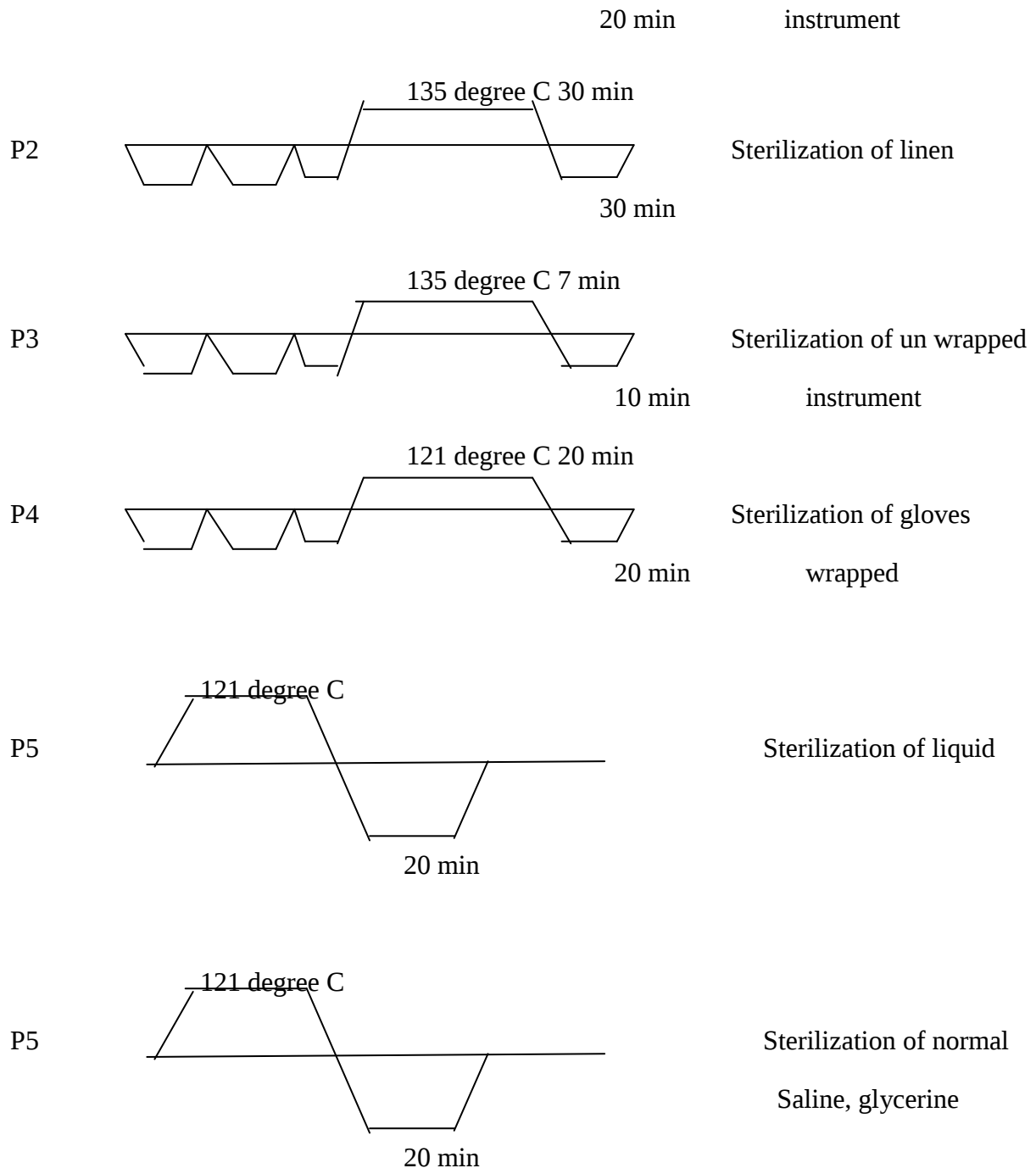
Ethylene oxide gas is used for sterilization as it has greater penetration power. The sterilization is very much effective in sterilization as the time period per sterilization is 8 – 12 hrs. It has capacity of 227 litres hence large amount of items are sterilized in one go hence it is used in weekly basis.

- **AUTOCLAVE- (four)**

Autoclave ues high temperature steam and high pressure for sterilization. There are four autoclave machine in the hospital two works under 121degree and two at 134 degree celcius.

There are six programs and for different items different programs ar used as explained under





- **DRYER MACHINE**

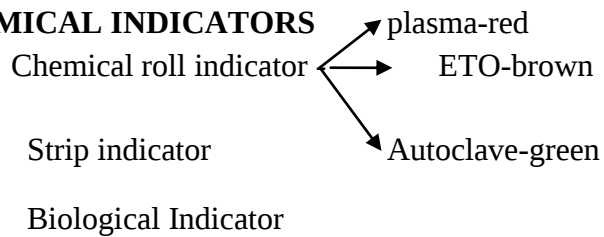
For drying tubes etc used in surgery . It works at 73 – 90 degree celcius.

- **INCUBATOR MACHINE**

- **SEALING MACHINE**

Items which are to be sterilized are first packed in chemical packaging material on which indicators for sterilization are present and then they are sealed in the machine for plasma 100 degree Celsius and for ETO- 130 degree Celcius. And then it is sterilized and now it is safe to use upto six months.

CHEMICAL INDICATORS



RECORD MAINTAINANCE

Delivering Register

Receiving register

EQUIPMENTS

Disinfection Chamber

Trolley wash unit

Rotosealer

Nikko Octa cutter

Drier cabinet

E.O. Sterilizer/Aerator

Air Compressor (with E.O. m/c)

Fabwell high pressure high vacuum rectangular sterilizer

Rotosealer heat sealing machine (Rotosealer) as per specification and technical data

STERRAD PLASMA 100S Sterilizer.

Horizontal High Pressure high vacume Sterilizer

Gauge cutting machine as per specification

Stand cum cutter for medical grade paper

Foot Opt Heat Sealing Machine

ETO rapid incubator (1294)

Steam rapid incubator (1292)

Drying Cabinet

Gauge cutting machine

ETO sterilizer (Getinge)

BLOOD BANK

A **blood bank** is a cache or bank of blood or blood components, gathered as a result of blood donation or collection, stored and preserved for later use in blood transfusion. The term "blood bank" typically refers to a division of a hospital where the storage of blood product occurs and where proper testing is performed (to reduce the risk of transfusion related adverse events). However, it sometimes refers to a collection centre

OBJECTIVE

1. Sufficient blood to the patient.
2. Suitable blood to the patient
3. Safe blood to the patient.

The different sections of blood bank are as follows and they are well separated from each other.

1. Donor Screening and Examination
2. Reception and Refreshment room
3. Medical Social Worker
4. Blood Collection
5. Blood Bank Serology
6. Transfusion Transmission Disease lab
7. Washing Area
8. Aphaeresis Unit

STAFFING PATTERN

DEPARTMENT OF TRANSFUSSION MEDICINE

Associate Professor (1)

Blood Bank Supervisor (1)

Technician (7)

Blood Bank Staff nurse (1)

Medical Social Worker(2)

Lab Attendant (1)

PROCESSING FLOW

Patient is admitted in the hospital and in case blood is required as here Exchange Donation takes place.

Then Grouping of patient takes place according to their blood group their friends or relatives need to give blood in order to fetch blood from the blood bank

Now the role of medical social Worker comes who motivates the near and dear one of the patient to donate blood in exchange of their blood requirement as it is their policy.

After that the patient is interviewed with the help of a questionnaire to know the mandatory information before donation.

Refreshment

Then the primary screening takes place as its haemoglobin and blood pressure is checked as the donor is suitable for donation .

Consent Form is signed by the donor.

Collection of blood takes place by trained technical Staff and is properly stored .

The collected blood samples are stocked for future use

Separation takes place on the basis of its components so as to avoid wastage of each and every component of blood.

Screening takes place and different test are applied such as ELISA, VDRL, and for malaria and if any sample is found positive it is discarded and the negative ones are stored and maintained.

Requisition of a particular blood component

Cross matching, forward matching and reverse matching is performed

Issuing takes place.

RECORD REGISTERS

Patient Registration Register

Cross Matching register

Donor grouping register

Patient grouping register

Issue register and booklet

Reaction form

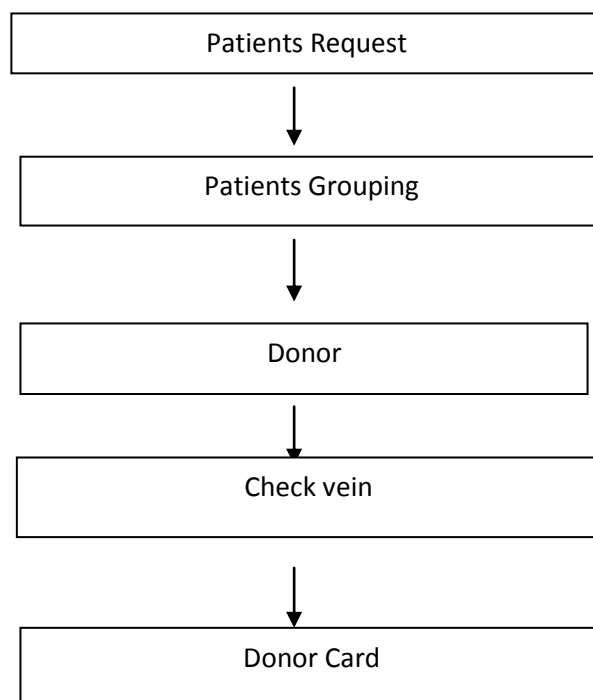
Stock register on daily and monthly basis

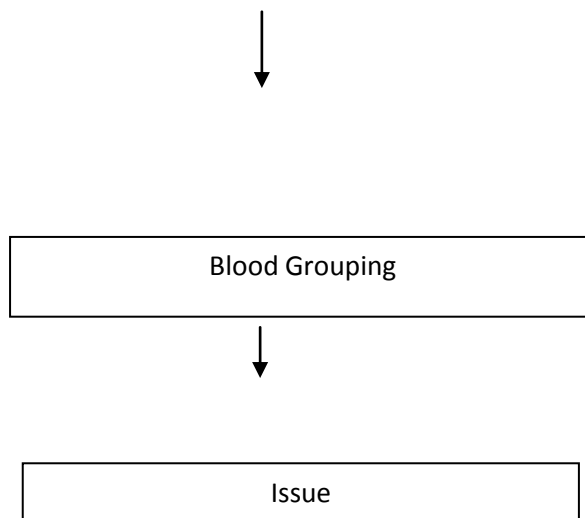
Master record register.

COMPONENTS

COMPONENTS	MAINTAINANCE TEMPERATURE	LIFE SPAN/CYCLE
PRBC	4-8 degree C	In CPDA(anticoagulant)- 35 days In SAGM(preservative)- 42 days
FFP	-30 to -40 degree C	1 year
PLATELETS	22 degree C	5 days

SDP PROTOCOL (Single Donor Platelet)





EQUIPMENTS

Blood Bank Refrigerator with LVC
Blood Collection Scale
Blood Bag Tube Sealer
Portable Tube Sealer
Weighing scale for Blood bags
Donor Coach
Blood Cell Separator
Oxygen Cylinder and Mask
Yorco Needle Destroyer
Plate late Incubator with Agitator
Blood bank Refrigerated Centrifuge
Deep Freezer
Plasma Freezers
Plasma Shock Freezer
Yorco Refrigerated Water Bath (Cryo)
Plasma Expressor
Cell Washer
Micro Processed Centrifuge
Plasma Thawing Machine
Incubator Co2
Cell Washer (Condemned)
Yorco Water Distillation plant
Yorco Water Bath
Microscope Binocular
Jencon General Purpose Centrifuge
Auto Haemoglobinometer
Automated Non-Isotopic Immunoassay System(Elisa Reader)
UPS 1 KVA ONLINE(tecna minilizer)
Jencon Centrifuge
Yorco VDRL Rotator

Dry Heat Blood warmer
QBC Centrifuge including paralense microscope and reference II
hematology
ID Centrifuge 6 S machine
Refrigerated Centrifuge (Double Bucket)
Incubator Co2
Elisa Reader with computer & printer
Elisa washer
Blood Donor Couch
Tube sealer electrical operated
Tube Sealer battery operated
Plasma expressor automated (Intelligent)
Plasma expressor automated (Intelligent)
Compo scale
Donor Chair Foldable
Blood volume counting monitor
Stirrer cyclomixer
Stericlean Horizontal laminar Flow
Servo stabilizer
Autoclave Yorco
Weighing balance
Weighing machine
Thalesemia project
Electrophoresis and densitometer
Haemoglobin Testing System
UPS 1 KVA ONLINE Libert (variant)
NACO Supply
Hematology analyzer Cell counter automatic
Platelet agitator with incubator
Laminar flow bench
Refrigerated centrifuge machine
Deep Freezer (-80 Degree)
Servo stabilizer
Deep Freezer (-40 Degree)
Servo stabilizer

PATHOLOGY

A **medical laboratory** or **clinical laboratory** is a laboratory where tests are done on clinical specimens in order to get information about the health of a patient as pertaining to the diagnosis, treatment, and prevention of disease.

STAFFING PATTERN

Consultant -2

Sr. Resident -1

Jr. Resident- 1

Supervisor-2

Secretary HOD- 1

Computer Operator – 1

Technician -15

Attendant- 4

WORK FLOW

Entry of the patient to the registration counter

Segregation of patient as gas victim , staff and their dependent and payment patient.

Information fed in Lab Information System Software and order is placed according to the patient and prior payment is collected from the private patient .And a requisition slip is given and are directed towards the Sample collection room in case of Outpatient

In the sample room order is rechecked and slip is prepared of the required test.

Sample is collected such as blood, urine, sputum, stool etc.

Sample is transferred to the Centralised pathology

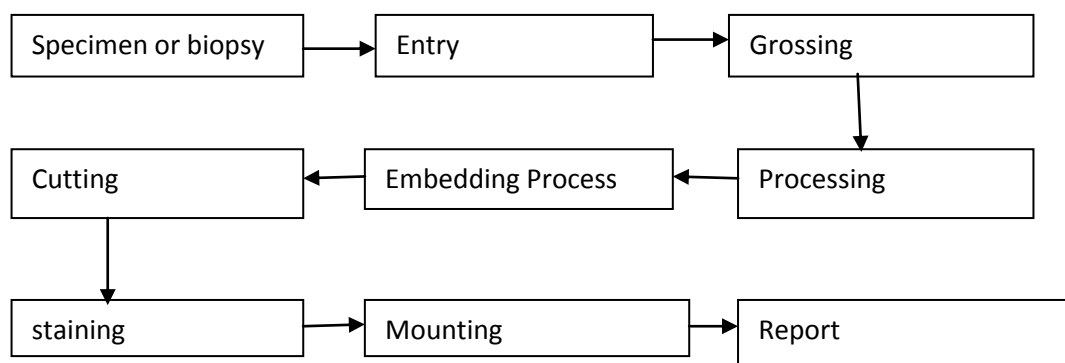
Reports are given to the patient.

NOTE:- Sample is collected from the wards in case of IPD patient by the nursing staff in the nursing station and sent to the pathology and order is placed by the Doctor in LIs and Reports are also given in LIS.

PATHOLOGY

Pathology is divided into four sections

1. Biochemistry – Biochemical test takes place on the serum of the blood which is anticoagulant free with the help of Biochemistry analyser and their the temperature is maintained 18 degree C for long lasting use of machine.
2. Haematology – Complete haemograph of the blood takes place and report is given on various parameters of blood and Haematology Analyzer is used
3. Clinical Pathology – Urine and Stool is tested such as macroscopic examination, chemical examination and microscopic examination.
4. Histo Pathology and Cytology- From Operation Theatre , OPD and other wards tissue, fluid etc are collected and tested in following manner



RECORD MAINTAINANCE

OPD Register

IPD Register

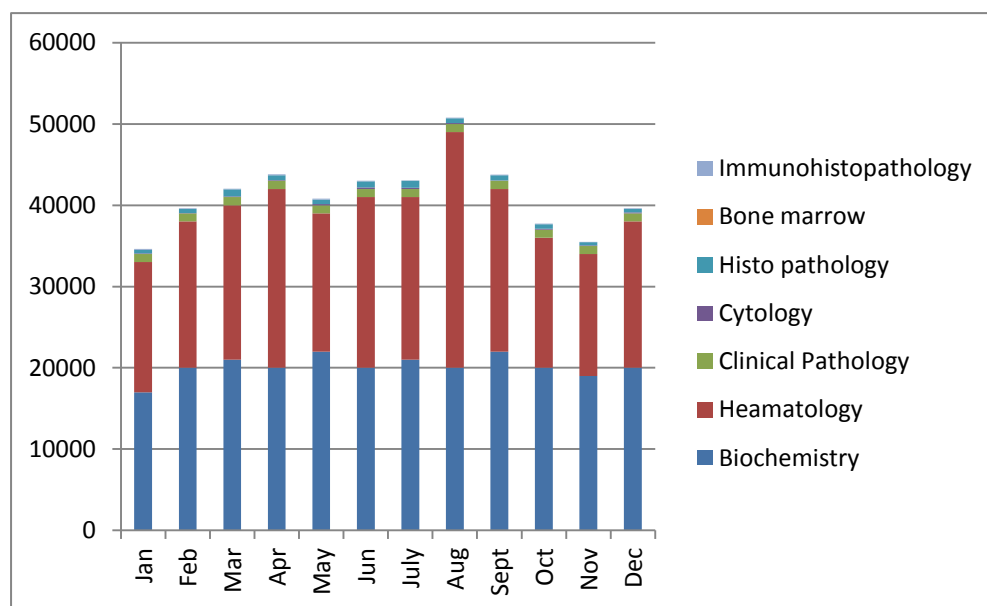
Sample Collection Register

Report Delivery Register

COLLECTION TUBES

Colour	Test type	Anticoagulant present
Violet	Haematology	EDTA
Grey	Sugar test	Na ₂ EDTA
Blue	Coagulation profile	Buff. Sodium citrate
Red	Plain serum	Nil

Total investigations in the year 2012



Equipments

Random access Auto analyzer
 Yorco Water Bath
 Jencon General Purpose Centrifuge (Heraeus)
 Micro Processed Centrifuge (Heraeus)
 Jencon Centrifuge (Heraeus)
 Bayer Ra 50 Chemistry Analyzer
 Yorco ESR Stand
 Yorco Bunsen Burner C' LPG Line Unit
 Yorco Hot Air Oven (A1)
 Refrigerator
 Yorco Needle Destroyer
 Haematology Analyzer (Condemned)
 AcT8 cell counter
 Coagulation Analyzer
 Microscope Binocular
 Phase Contrast Microscope

Microscope Binocular
Microscope Binocular (Beacon)
Jencons Dilutor & Dispenser
Freezing Microtome
Tissue Processor
Automatic Knife Sharpener
Rotary Microtome
Digital Analytical Balance
Yorco Hot Plate
Sodium / Potassium / Chloride Analyzer (ERBA)
Sodium / Potassium / Analyzer (ERBA)
Semi auto analyzer (Merck)
Haematology Analyzer (Sysmax)
Flame Photometer (Systronic) with Printer
Microwave oven (LG)
Photo Electric Colorimeter with flow Cuvette
Remi Centrifuge
Yorco Incubator Stainless Steel
Yorco water bath rectangular
Yorco Slide Warming table
Tissue Flootation Bath
Systronics Electrophoresis System With densitometer
Hot Plate Round
Deionised plant for Hitachi(Ion-Exchanged)
Urilux Urinalyser (Roche)
Needle destroyer (VADI)
Microscope Monocular (Olympus)
Microslide cabinet
Yorco stirrer
CVT Bhurji attached with Binocular microscope
CVT Bhurji attached with RA – 50 Analyzer
CVT RXL attached with Tissue processor
UPS Libert attached with Coagulation Analyzer
Libert UPS attached with Chemistry analyzer microlab
Libert UPS attached with Chemistry analyzer microlab
Libert UPS attached with Hitachi 902
Libert 3KVA UPS attached with Haematoanalyzer
Servo voltage stabilizer attached with Hot Air Oven
UPS attached with Coagulometer
UPS 3KVA attached with Cryostat
UPS online 2KVA with sysmax
Hemoster coagulometer (Tulip) (Rental)
Hemoster coagulometer (Tulip) (Rental)
Photo Electric Colorimeter with flow Cuvette (Condemned)
Bayer Electrolyte Analyzer (Condemned)
Digital PH Meter Elico (Condemned)
Yorco Deionizer (Condemned)
Yorco Slide Warming table (Condemned)
Hot Plate Round (Condemned)
Deionised plant for Hitachi(Ion-Exchanged) (Condemned)

Yorco Wax Embedding Bath (Condemned)
Logistat Stabilizer attached with Freezing microtome (Condemned)
Servo voltage stabilizer attached with Cryostat (Condemned)

MICROBIOLOGY

The microbiology department provides a comprehensive clinical and laboratory service for the diagnosis, treatment, management and prevention of infectious diseases.

Microbiology receives almost any clinical specimen, including swabs, feces, urine, blood, sputum, cerebrospinal fluid, synovial fluid, as well as possible infected tissue. The work here is mainly concerned with cultures, to look for suspected pathogens which, if found, are further identified based on biochemical tests. Also, sensitivity testing is carried out to determine whether the pathogen is sensitive or resistant to a suggested medicine. Results are reported with the identified organism(s) and the type and amount of drug(s) that should be prescribed for the patient.

STAFFING PATTERN IN DEPARTMENT OF MICROBIOLOGY

Consultant-1

Sr.Resident-0

Supervisor-1

Technician-4

Attendent-2

EQUIPMENTS

Automated Blood culture System (Fluorescent)

Bactec Automated Mycobacteria TB System

Automated Blood culture System

Mini API system

Gen Probe System

Yorco Laminar Flow Bench

Microscope Binocular

Yorco Bunsen Burner C' LPG Line Unit

Refrigerator

Digital Analytical Balance

Yorco Water Bath

Yorco Hot Air Oven (A1)

Sterile Hood

Jencon Co2 Incubator

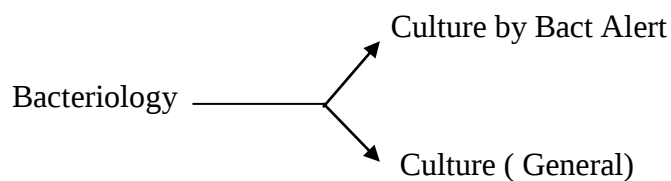
Yorco BOD Incubator

Jencon General Purpose Centrifuge (Heraeus)
Elisa Reader with printer
Elisa Washer
Elisa Reader with PC
Elisa Washer
Binocular Microscope
Analytical Balance with printer
Centrifuge machine (Remi)
Centrifuge machine (Remi)
Microscope Binocular (Olympus)
Microscope Binocular (Nikon)
pH meter (free supply)
VDRL Rotator
Yorco Autoclave (transfer from MU through stores)
Class II-Bio-safety cabinet
Incubator (Small)
Inspissator.
Microscope Monocular
Mixer cum Grinder
Cyclo mixer
Vertical Autoclave (transfer from MU3 through stores)
Turbidimeter (Tulip) (**Rental**)
Yorco Autoclave (**Condemned**)

RECORD MAINTAINANCE

1. IPD sample register
2. Serology By card register
3. IPD ELISA Serology
4. OPD despatch register
5. Equipment maintenance register
6. Primary Culture register
7. Media register

TEST PERFORMED IN MICROBIOLOGY UNDER DIFFERENT HEADS



Mycobacteriology

Microscopic examination

Mycological Investigation

Serology

Routine ELISA

Rapid Immunoassays

Special ELISA

AREAS IN MICROBIOLOGY DEPARTMENT

Experiment Room

Media Preparation Room

Equipment Room

Immunology Room

Molecular lab

Amplification room

Hybridization room

Store room

PROCESS FLOW

Sample collection is same as carried for pathology, mostly specimen is received from IPD and few from OPD in BACT Alert Bottles they are of two types

Orange bottles – anaerobic culture

Green Bottles – aerobic culture

After receiving its entry in the register with required information such as name ,ID, specimen etc

Placed in 3D BACT alert for a week

If positive sub cultured and if negative it is disgarded.

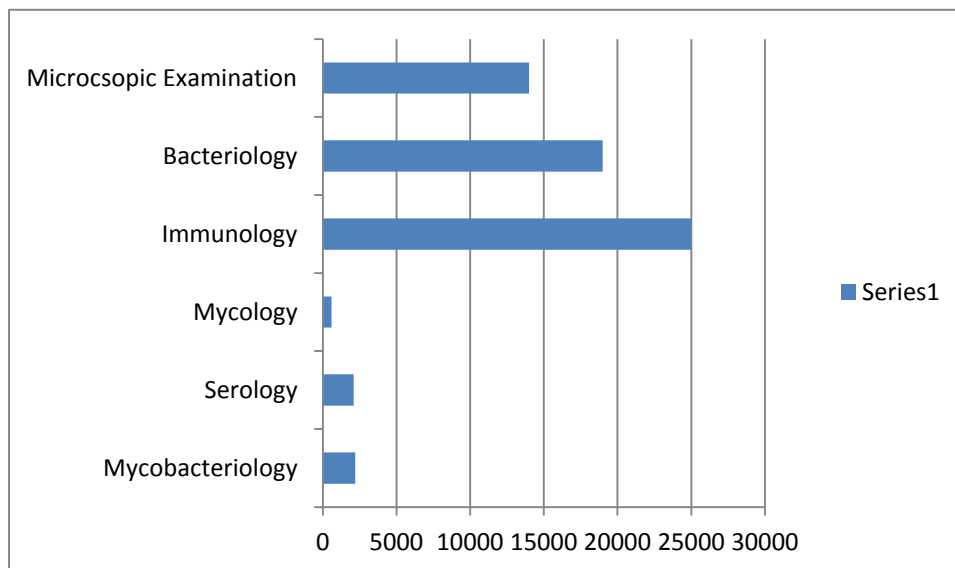
After sub culture it is incubated for 48 hrs and 37 degree C

Sensitivity is tested

Antibiotic test

Finally report is despatched in LIS for IPD patient and from collection room For OPD manually.

TOTAL INVESTIGATIONS CARRIED OUT IN 2012



EQUIPMENTS

Automated Blood culture System (Fluorescent)
BancTec Automated Mycobacterium TB System
Automated Blood culture System
Mini API system
Gen Probe System
Yorco Laminar Flow Bench
Microscope Binocular
Yorco Bunsen Burner C' LPG Line Unit
Refrigerator
Digital Analytical Balance
Yorco Water Bath
Yorco Hot Air Oven (A1)
Sterile Hood
Jencon Co2 Incubator
Yorco BOD Incubator
Jencon General Purpose Centrifuge (Heraeus)
Elisa Reader with printer
Elisa Washer

Elisa Reader with PC
Elisa Washer
Binocular Microscope
Analytical Balance with printer
Centrifuge machine (Remi)
Centrifuge machine (Remi)
Microscope Binocular (Olympus)
Microscope Binocular (Nikon)
pH meter (free supply)
VDRL Rotator
Yorco Autoclave (transfer from MU through stores)
Class II-Bio-safety cabinet
Incubator (Small)
Inspissator.
Microscope Monocular
Mixer cum Grinder
Cyclo mixer
Vertical Autoclave (transfer from MU3 through stores)
Turbidimeter (Tulip) (Rental)
Yorco Autoclave (Condemned)

RADIOLOGY

Radiology is an important diagnosis facility for the practice of modern medicine along with pathology services , it provides essential diagnosis backup and is an integral part of the hospital.

TYPES OF RADIOLOGICAL SERVICES

X-Ray

MRI (Magnetic Resonance Imaging)

CT Scan

USG (Ultra Sonography)

DSA (Digital Subtraction Angiography's)

Functions Of Radiology

To provide radiological services to patients

Provision of services to clinics and other OPDs ,teaching and research.

HIERARCHY

Senior Resident

Secretary

Supervisor (8)

Technician (8)

Asst. Technician (3)

Staff Nurse (2)

Computer Operator (3)

WORK FLOW

Patient comes from OPD, Ward or Emergency

Registration of radiology

There patients get registered and get appointment for investigation

At the time of appointmen patient get investigation form from concerned diagnosis department like X ray , CT Scan and MRI.

Investigation takes place of the patient

Reports are separated like X-Ray, USG etc sent to the reception for distribution

X-RAY

X- ray are three types

Low ma – 20-60 ma

Medium ma – 100-200 ma

High ma – 500- 1000 ma

Time Requirement – 2 min

Report distribution – 5 min

CT-SCAN

Computerised Topography Scan

64 slices CT scan Machine

Time Requirement for CT scan- Head – 5 min

Abdomen – 15 min

Chest – 20 min

Angio – 25 min

Reports – Next Day

No. Of investigation – 25 cases per day

MRI

Magnetic Resonance Imaging

Time Requirement for MRI – 10 -30 min

No. Of investigations - 8-9 patients per day and approx 10 studies per day.

Reports – Within 2 days.

Cardiology Lab

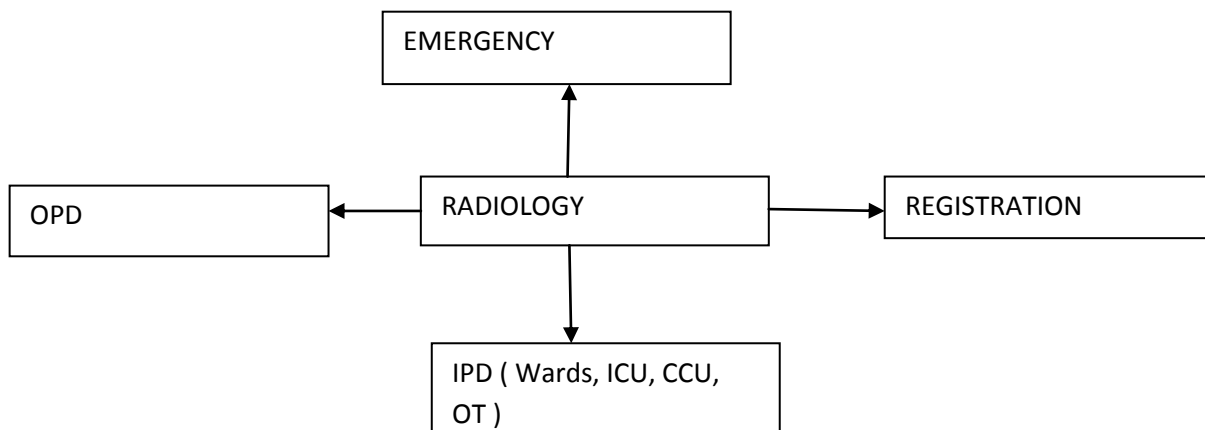
Investigations

- ECHO
- ECG
- TMT

Maximum Investigations - Monday , Tuesday, Thursday and Friday OPD

Investigation	Time Taken	No. Of investigation
ECG	2 min	100 per day
ECHO	5- 10 min	50 per day
TMT	10 – 12 min	20-25 per day

COORDINATION



EQUIPMENTS

MRI Unit (1 Tesla)
UPS 80 KVA for MRI
65KW X-Ray Machine With IITV System
500mA X-Ray Unit with Bucky Table
Whole Body high Resolution Ultra Sound Equipment
Whole Body Ultrasound
C-Arm Image Intensifier
Universal Diagnostic System with DSA
Pressure injector Angiomat for DSA
UPS 6 KVA for DSA(Libert)
USG 3D Colour Doppler Machine
Ultrasound machine
UPS 2 KVA Online with Ultrasound Logiq 5 Pro (APC)
Dry View Camera
UPS 3KVA for Dry View Camera (Libert)
64 Slice CT scanner
Automatic film processor
Pulse Oximeter
X- Ray machine portable
X- Ray machine portable
Cardiac monitor mult. Func. Device
Cardiac monitor mult. Func. Device
Cardiac monitor mult. Func. Device
Sony thermal printer Black & white
Mobile X-Ray Machine
Kodak Laser imager for MRI (Condemned)
Automatic Film Processor (Condemned)
Automatic Film Processor (Condemned)
Automatic Film Processor With X-ray (Condemned)

STORE

Hospital store is a place where all the required material are stored and there they issue to all user department of hospital , it is supportive service of hospital and it play an important role in material management.

TYPES OF STORE

Hospital store can be divided into

- Centralised
- Decentralised
- Non- consumable store
- Consumable store

BMHRC – Centralised store

STAFF

Store Officer – 1

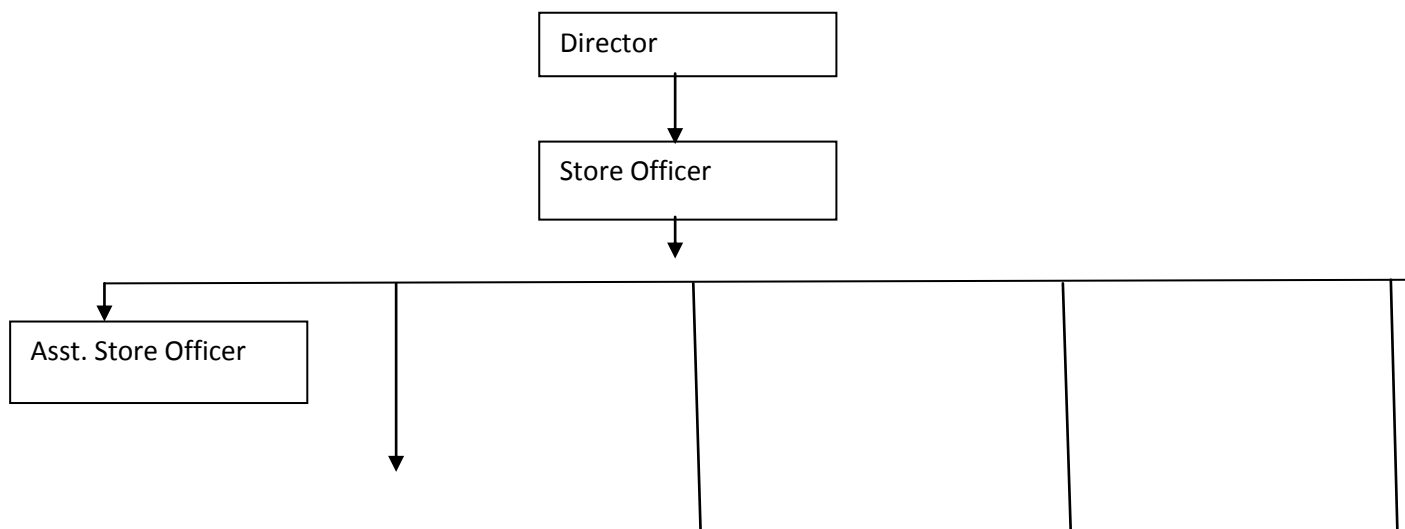
Asst. Store Officer – 1

Store in charge – 2 Pharmacist – 5

Store Keeper – 2

Computer Operator - 3

HIERARCHY



store incharge

Pharmacist

Store Keeper

Computer Operator

PROCESSING OF WORK

(1) PURCHASE REQUISITION (PR)

The MRM i.e. Maximum reorder minimum levels of all storable items are set in the material management module of the SAP (System Application Program) . When ever a item reaches the re-order level the system automatically creates a planned order of those item that have reached the ROL level. Every morning the first task undergone in the respective store is to check the list of item reaching ROL. The store officer then decides , after proper screening of the earlier purchase requisition , purchase order and the present stock and discussion, that the planned order to convert into purchase requisition. The store incharge also decides whether the quantity to be ordered is to be delivered in a staggered . The purchase requisition is firstly signed by the respective store incharge then by the store officer, then by the secretary purchase committee and finally by the chairman purchase committee , which then go to the vendor.

(2) Receiving

As the vendor receives the purchase order from the hospital the vendor delivers, the material listed on the due date mentioned. The material is delivered at the store. The material are received from the vendor in the quarantine store and kept carefully so as to avoid mixing of accepted and rejected stock.

(3) Verification

After receiving the material on subject to verification depending on which store it is to be finally stored that is **Drug store, Clinical store** and **General store** .

Verification on following factors

- ✓ Material as per description
- ✓ Whether the item is of same company or brand as ordered
- ✓ Whether the Maximum retail price is more than the rate
- ✓ Batch No., expiry date , quantity is verified.

(4) Rejection

After the verification of the material, if it fails on any of the expect, the material is liable for rejection.

(5) Goods Receipt (GR)

After proper verification , both quantitatively and qualitatively, GR is done .The GR of only those item is done that is accepted while verification.

(6) Storage

After GR the material is to be stored in the respective store. Before the storage the item is checked whether the item is high value, medium value or low value. If it is a high value item then it is kept in lock and key in Cupboard. If the material storage condition mentioned is 2 degree Celsius to 5 degree Celsius then it is stored in refrigerator. On the cupboards the list dispatching names of the drugs kept inside are clearly put up in order to avoid any sort of confusion .

(7) Issuing

Material are issued to the sub store on indents only and indents are of two types

Manual indent

Auto indent

All the restricted items , narcotics, spirit and all those items which are not included in the list of sub store indenting by the sub store, are issued on manual indents while all those item which are included in auto indent it is issued online.

(8) Checking of Reorder level

This is done only in case of auto indenting where MRM level of all the material is set. If the item has reached to the the reorder level then only it is issued from the store. While in case of manual indenting, the manual indent is sent by the user department containing item's name , quantity required written and duly signed by the HOD. Auto indenting is not done in materials grouped under restricted items , narcotics and spirit whether issued on auto indent or manual indent the material is issued on first in, first out (FIFO) basis

(9) Transfer Posting

A important step before physically issuing the items . The items to be issued on the day to a particular sub store are posted on the systems i.e. on material management module after posting the items they are taken out from the shelves to be physically given to the sub store.

(10)Arranging the materials

Items are taken out from the shelves and arranged properly in respective department racks each department is assigned a rack in the drug, clinical and general store. Where the issued material is arranged department wise so as to avoid any confusion.

(11) Cross – Checking

Before issuing the items , the item name, batch name , batch number and quantity are checked by the store in charge.

(12) Gate pass

Whenever a material is issued to any sub store the security guard posted outside the store checks the copy of indent . The next day the copies are matched with the copies in store to check the same no.

AUDITS

Internal audit – The internal auditors are appointed by the organization and they report the findings to the concerned authorities to keep check on any kind of discrepancies.

External audit – It is called from outside the hospital organization to conduct audit annually. They check whether the physical stock in the store match with the records.

EQUIPMENTS

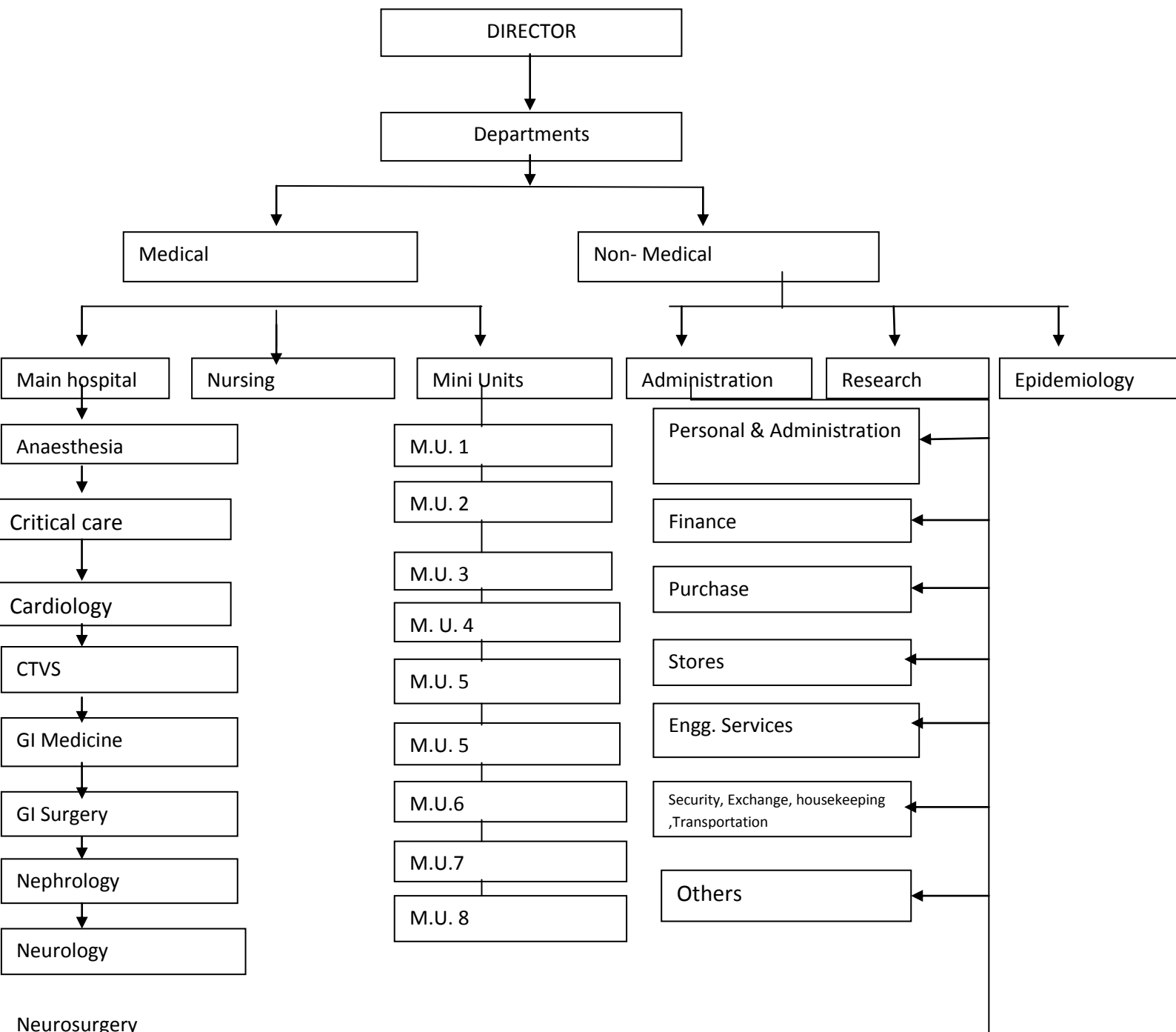
S.no	Equipments	Drug Store	Clinical Store	General Store	Total Equipments
1	Refrigerator	7	5	-	12
2	Cupboard	16	18	13	47
3	Racks	3	43	36	109
4	Weighing machine	-	-	1	1
5	Trolley	-	2	-	2

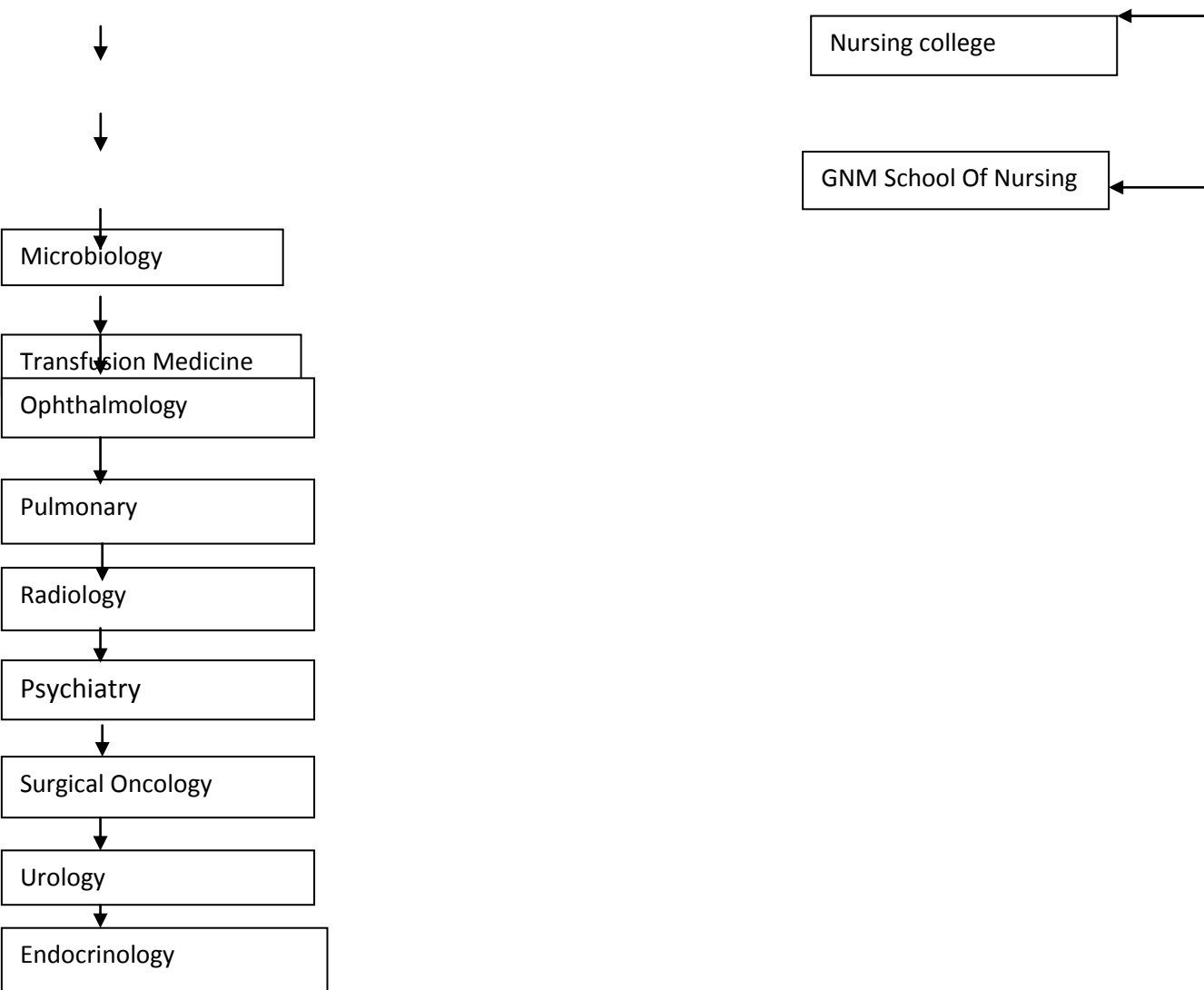
RECORD KEEPING

- GR Record
- Bill Record
- Policy form Record
- Indent Record
- Gate pass Record
- Local Purchase Record
- Non Available Record
- Vendor Information record
- Mini Unit Record
- Inventory Control Record

ADMINISTRATION AND PERSONNEL DEPARTMENT

ORGANISATIONAL HEIRARCHY





NO. OF EMPLOYEES- 687 (Including DNB Student- 12)

CATEGORY OF EMPLOYEES – 76

SOFTWARE USED – SARAL

PAY Roll

Entry Pay in the revised pay structure for direct recruit as followed

PB – 01 (Rs. 5200 - 20,200)

GRADE PAY	PAY IN THE PAY BAN	TOTAL
1800	5200	7000
1900	5830	7730
2000	6460	8460
2400	7510	9910
2800	8560	11360

PB – 02 (Rs 9300 – 34800)

GRADE PAY	PAY IN THE PAY BAN	TOTAL
4200	9300	13500
4600	12540	17140
4800	13350	18150

PB – 03 (Rs 15600 – 39100)

GRADE PAY	PAY IN THE PAY BAN	TOTAL
5400	15600	2100
6600	18750	25350
7600	21900	29500

PB – 04 (Rs 37400 – 67000)

GRADE PAY	PAY IN THE PAY BAN	TOTAL
8700	37400	46100
8900	40200	49100
10000	43000	53000
12000	47100	59100

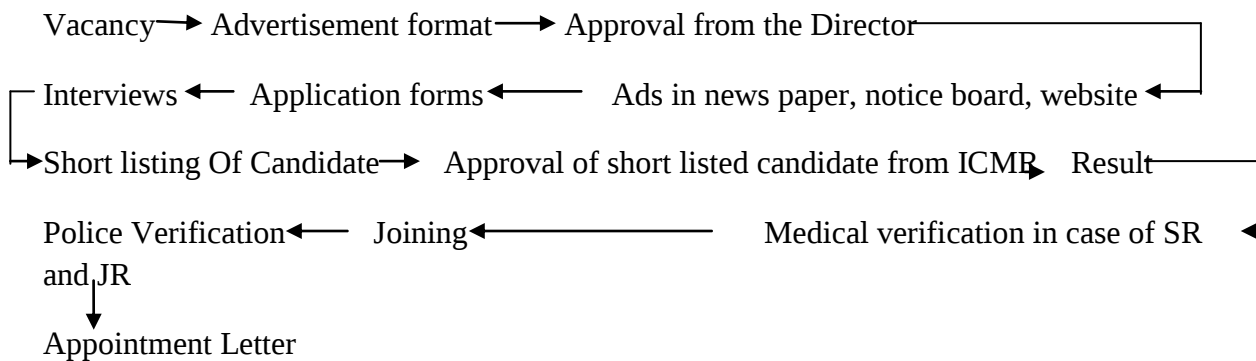
POSITIONS AND PAYBANS

POSTS	PAY BAN
Director	4
Professor	4
Associate Professor	3
Assistant Professor	3
Deputy Director finance	3
Deputy Director Engineering Services	3
Sr. Manager Operations (Medical Stores)	3
Sr. Manager Engineering services	3
Principal (Nursing College)	3
Senior Medical Officer	3
Nursing superintendent	3
Administrative Officer	2
Security Officer	3
Vice Principal (Nursing College)	3

Senior Resident	3
Casualty Medical Officer	3
Medical Officer	3
Vice Principal (GNM Nursing college)	3
Stores Officer	2
Accounts officer	2
Public relation officer	2
Bio Medical Engineer	2
Engineer – Civil	2
Engineer – Electrical	2
Medical Record Officer	2
Chief Librarian	2
Computer Engineer	2
Junior Resident	3
Deputy nursing Superintendent	3
Clinical Neuropsychologist	3
Clinical Psychologist	3
Lecturer Nursing College	2
Senior research Associate	3
Tutor Nursing College	3
Tutor/ Clinical Assistant GNM School	2
Cath Lab supervisor	2
Per fusionist grade II	2
Nursing Supervisor	2
Physiotherapy Supervisor	2
Occupational Therapist	2
Psychiatry Social worker	2
Junior Research Associate	2
Supervisor (Medical)	2
Supervisor (Non- Medical)	2
Assistant Accounts Officer	2
Assistant Purchase Officer	2
Assistant Administrative Officer	2
Assistant Stores Officer	2
Assistant Biomedical Engineer	2
Senior Pharmacist	2
Assistant Librarian	2
Medical service Coordinator	2
Club Care Taker	2
Warden	2
Staff Nurse Grade II	2
Dietician	2
Psychiatric technician	2
Physiotherapy technician	2
Medical Social Worker	2
Personal Secretary	2
Technician	1
Pharmacist	1

Cashier Cum Accountant	1
Technician (Non- Medical)	1
Store In charge	1
Computer operator	1
Personal Assistant	1
Store Keeper	1
Driver	1
Tailor	1
Operator	1
Lineman	1
Attendant (medical)	1
Cook	1
Attendant (Non Medical)	1

RECRUITMENT PROCEDURE



BREAKUP OF THE SALARY

Basic salary
 House Rent Allowance
 Dearness Allowance
 DA(TA)
 Earning total
 Provident Fund
 Professional Tax
 BMHEA fees
 Deduction total
 Net Amount

EMPLOYEES SALARY

The SARAL software used by the administration department helps in generation of salary to BMHRC employees every last date of the month.

The background details and other information related to the employees is maintained both manually as well as in SARAL as every employee is given with a ID No. For easy processing

.

After reducing various deductions and paid leave (If any) from the salary then the finance department is responsible for salaries of the employees.

VARIOUS LEAVES

LEAVES	Numbers
Earned Leaves	30 Days
Casual leave	8 Days
Medical leave	10 Days
Restricted Holiday	2 Days
National Conference (For faculty)	Once a year
International Conference (For faculty)	Once a year
For female employees Maternity leave Child care leave	6 mnths 730 days (any time upto the completion of 18 th birthday)
For male employees Paternity leave	15 days
Special Leave (faculty)	5 days
Vacations (Professor / Associate Professor)	

STAFF IN ADMINISTRATION AND PERSONNEL DEPARTMENT

Administrative Officer (1)

Asst. Administrative Officer (1)

Personal Assistant (1)

Computer Operator (3)

INFORMATION TECHNOLOGY/ ELECTRONIC DATA PROCESSING DEPARTMENT

The Electronic Data Processing Department is outsourced from ITSc TECHNOLOGIES Pvt. Ltd. Bhopal. Electronic data interchange (EDI) allows faster, more efficient, and cost-effective claim submission for providers. EDI, performed in accordance with nationally recognized standards, supports the health care industry's efforts to reduce administrative costs

STAFF PATTERN

Manager Operation (2)

Hardware Engineer(3)

Software Engineer(3)

SERVERS

- Hospital Information System - Patients record, admission , transfer, discharge, data retrieval,etc
- Material Management Software- Inventory management, Purchase, Vendor, Quotation, Stock etc.
- Cardio Information system- Information and data related to Cardiac department, surgeries etc.
- DOMAIN- Intra circle connections of PC of the employees of BMHRC.
- ZIMBRA - Local mail Services within the hospital work without net connection.
- SERAL - Employees data ,PF , Salary , leave information and is directly connected to the HR Department.
- Disaster - A backup source of the entire data .Present in the Ex. Location in situation of crisis such as earthquake, fire, flood etc.

DATA BACKUP

Back UP Tapes- On daily and weekly basis data tapes are maintained and kept in a safe fire and other crisis proof cupboard and access is restricted only to EDP authority.

Disaster Server- Is present in the Nursing College BMHRC in case of any crisis.

Power Supply- Three Power supply for the entire Hospital that is two from MPEB's different locations from Sukhi sewania and Lalghati and Thirdly, generator (6-8 hr electricity backup in case of power cut. And if everything fails a communication point has UPS (4-5 hrs power backup) for supply of electricity to the servers for their regular functioning.

MODULE

Hospital Information System- It was implemented on 2000 in the hospital and Go line was in the year 2001 that time it was handled by Siemens upto 2006 after that ITSC till date .

SUB- MODULE

1. Admission Discharge Transfer
2. Billing
3. Nursing
4. Consultation
5. Lab Information System
6. Medical Record Department
7. Order Communication
8. OT Module
9. Blood Bank
10. Service centre Manager
11. Master And Security Module

LAUNDRY

Laundry is a place in hospital where the entire clothes of the hospital is washed and dried . This is performed to maintain to provide hygienic and safe environment in the hospital and to avoid nosocomial infection in the hospital as hospital related infection kills more than the road accidents.

STAFF

Supervisor – 1

Operator – 2

Attendants – 6

SHIFTS

6am to 2 pm - Ward Clothes

1 pm to 9 pm – O.T. clothes

WORK FLOW

Attendants go to wards and OT and collect clothes

These clothes are brought to the laundry

White clothes are separated from coloured clothes for washing purpose

Clothes are washed in washers

After washing they are kept in hydro extractor, in which most of the water is expelled out

Now they are kept in steam heated driers where they get dried

Clothes are then rearranged according to their wards

These are then pressed either by manual iron or by using the flat bed iron

These clothes are then re-issued to their respective ward for reuse

EQUIPMENTS

Equipments	Capacity	Quantity
Washing machine	25 Kg and 50 Kg	3
Hydro extractor	25 Kg	3
Steam heated Driers	25 kg	3
Ironing machine		
Manual iron	-	2
Flat bed iron		3

CHEMICALS USED

Sac 100S - Laundry Detergent

Sac – 300 - Alkaline Booster

Sac – 700 - Emulsifier

Sodium Hypo chloride - Disinfectant and Bleaching

Freshener

Water Consumption – 10000 lit / day

Steam Consumption – 2.5 – 3 ton / day

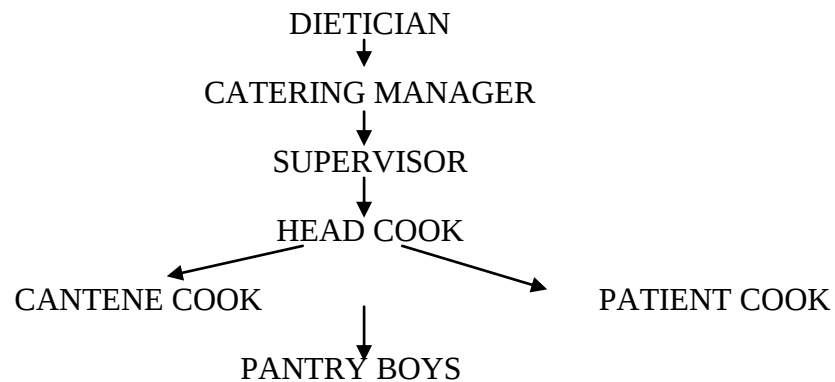
DIETERY

TYPES OF DIET

1. Normal Diet
2. CRF Diet for kidney patient
3. Diabetes Mellitus Diet
4. Low fat Diet
5. High Protein diet
6. High Carbohydrate diet
7. Soft Diet
8. Liquid Diet

KITCHEN – OUTSOURSED

HIERARCHY



TIMINGS

First Shift – 6am to 2 pm

Second Shift – 2pm to 8 pm

Breakfast – 7am to 8 am

Lunch – 12 pm to 1 pm

Evening Tea – 3 pm

Dinner -7pm to 8 pm

KITCHEN

The kitchen is divided into following areas on the basis of usage.

- Pantry area
- Cooking Area
- Trolley Parking
- Trolley wash Area
- Cold room and deep freezer
- Bakery Area
- Vegetable Preparation Area

MENU (Cyclic menu)

NORMAL DIET

Lunch and Dinner – 4 chapatti , Dal , Green leafy vegetable , Gourd family vegetable , Rice , Curd

Breakfast – Poha / Idli / Dalia / Bread

Evening tea – Tea and Biscuit

SOFT DIET

Khichdi , Dalia , Curd , Boil egg , Bread Milk

CHARGES – 180 per day

BILLING DEPARTMENT

Billing department is located on ground floor. All the transactions for treatment and investigation facilities' are handled by this department. The department is equipped with latest communication equipment to take care of the interaction with various departments, lab, blood bank etc .The list of hospital is empanelled for cashless services is available with the account department.

Types of visit - Out Patient Visit
In Patient Visit

Staffing pattern – Deputy Director Finance (1)
Accounts Officer (1)
Asst. Accounts Officer (1)
Computer Operator (4)

Types of ward and charges-

Wards	Charges
General Ward	Doctor visit- 300 Ward charge – 400
Private Ward	Doctor Visit- 300 Ward Charge – 1300
C.C.U. Ward	Ward charge – 1200 Doctor visit - 500
I.C.U. Ward	Without ventilator – 2000 per day With ventilator – 3500 per day
CTVS ICU Ward	Without ventilator – 2000 per day With ventilator – 3500 per day

EMPANELLED ORGANIZATIONS

1. Airport
2. BHEL
3. CM Fund
4. Central jail
5. Central Govt. Health Scheme
6. CPRI
7. ECHS
8. ESI
9. GAIL
10. IAS Wife Association
11. Indian Airlines
12. M.P. Health (MBHUY)
13. MP Health services
14. Power Grid
15. Railway
16. RBI
17. SBI
18. NABARD
19. NFL

Monthly basis the empanelled cooperates receive their bill of their concern employees and they deposit that amount on their employees behalf. At the time of admission the patient need to show the referral letter from their respective hospitals and thus are eligible for further treatment without paying at that point of time from the pocket.

BILLING PROCEDURE

Billing takes place on daily basis in the BILLING MODULE of HIS software .

After registration the private patient pays advance according to the estimate given by the doctor.

And on daily basis according to the orders placed by the doctor and lab the bills keeps on adding.

At the time of discharge final bill is generated by the billing department after adding addition services and charges as per the patients consumption such as Lab investigations, Radiology, Material, Pharmacy and others.

The three copies of bill is signed by the doctor , asst accounts officer , billing incharge. And one copy is handed over the patient for payment and two copies are kept as record in the billing department.

On bill payment discharge papers is processed and the patient is allowed to leave.

BILLING AND DISCHARGE

NON PAYING Patients

Bills of the patient is generated in the BILLING software and it is under the billing department but the non- payment patients are given 100 % discount and their bill is closed and at the time of discharge they get a copy of discharge paper which consist of various information as concerned Doctor, Investigation, Diagnosis, Health Status Etc and the patient is allowed to leave

PAYING PATIENT (BHEL , CGHS,etc)Bills of the patient is generated in the BILLING software and it is under the billing department but the non- payment patients are given 100 % discount and BHEL retired patient 80% discount and their bill is sent to their organisation for payment.

PAYING PATIENT (PVT)

For OPD – After registration they need to pay Registration fees – Rs 100 (Life time)

Consultation fees - RS 300

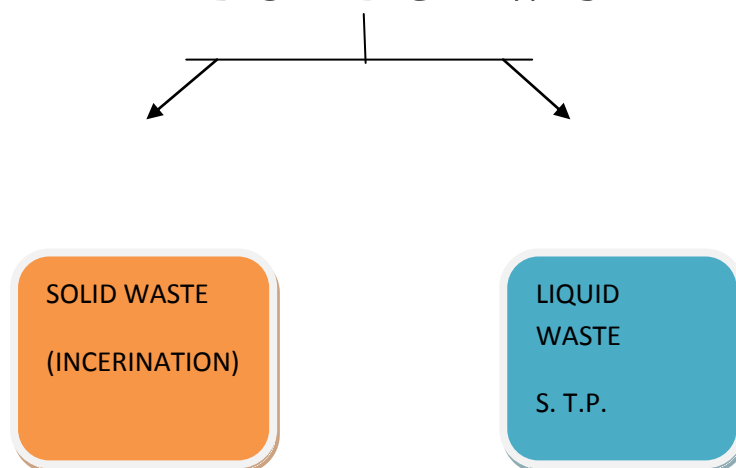
(Valid for 15 days with one visit free)

For IPD- After Registration they need to submitte 5000/- advance in the billing department billing takes place as according the ward charge, ordered investigation , medicine and other requirement full filled by the hospital.

The bill automatically get generated in billing software as advance , investigation charges, ward charges, consultation charges, operation ordered ,surgery ordered, no. Of days in the hospital, medicine charges , amount submitted and finally net amount

The 5000/- is adjusted accordingly and if their is any refunding it is given back and if it exceeds then collected from the patient's attended and a payment slip's copy is generated and send to the ward after that only then discharge paper is given to the patient and allowed to leave.

BIOMEDICAL WASTE



SEWAGE TREATMENT PLANT IN BMHRC

Sewage treatment generally involves three stages, called primary, secondary and tertiary treatment.

- Primary treatment consists of temporarily holding the sewage in a quiescent basin where heavy solids can settle to the bottom while oil, grease and lighter solids float to the surface. The settled and floating materials are removed and the remaining liquid may be discharged or subjected to secondary treatment.
- Secondary treatment removes dissolved and suspended biological matter. Secondary treatment is typically performed by **indigenous**, water-borne micro-organisms in a

managed habitat. Secondary treatment may require a separation process to remove the micro-organisms from the treated water prior to discharge or tertiary treatment.

- Tertiary treatment is sometimes defined as anything more than primary and secondary treatment in order to allow rejection into a highly sensitive or fragile ecosystem (estuaries, low-flow rivers, coral reefs,...). Treated water is sometimes disinfected chemically or physically (for example, by lagoons) prior to discharge into a [water body](#). or it can be used for the [irrigation](#) of a golf course, green way or park. If it is sufficiently clean, it can also be used for [groundwater_recharge](#) or agricultural purposes.

WORK FLOW

Water from sewage comes to sewage treatment plant.



The tanks are used to settle sludge while grease and oils rise to the surface and are skimmed off.



To be effective, the [biota](#) require both [oxygen](#) and food to live.

The [bacteria](#) and [protozoa](#) consume biodegradable soluble organic contaminants (e.g. [sugars](#), fats, organic short-chain [carbon](#) molecules, etc.) and bind much of the less soluble fractions into [floc](#). Secondary treatment systems are classified as *fixed-film* or *suspended-growth* systems. This takes place in the aeration tank.



Sludge formation takes place in the sludge tank...water from sludge tank moves to other tank and then the sludge is sent to a different tank.



The sludge is aerated again and again so that more water can be removed and the sludge which contains microbes, soil ,suspended particles etc is deposited on a soil bed for the process of fertilization which is being used in horticulture of the hospital .



Then the filtered water is chlorinated so as to disinfect the sewage water



Lamella clarifier for further purification.

Storage tank



Activated carbon filter tank to remove the residual toxin.



Multigraded sand filter to remove the suspended matter.

Now the water is free from odour and other suspended particle and is safe for using it for horticulture so the entire water is efficiently used without any wastage and even the greenery is also maintained..

Daily 3,50,000 litres water is treated and it is functional 24*7 and even supported by generators for electricity supplies incase of power cut.

Chemicals used are chlorine, sodium hypochlorite, alum.

Staff- Supervisor (1)

Attendants (5)

INCINERATION

Hial oil/ gas fuel double chamber auto electrically controlled incineration for disposal of combustibile garbage/biomedical waste as per central pollution control board guidelines/norms completes with dilution chamber, control panel, fuel system and fuel stock.

1. PRIMARY CHAMBER
2. SECONDARY CHAMBER
3. DILUTION CHAMBER
4. CONTROL AND MONITORING SYSTEM
5. SAFETY DEVICES
6. BURNER
7. POWER REQUIREMENT
8. FUEL CONSUMPTION- Primary chamber (3 to 3.5 US Gallon)
Secondary Chamber (3 to 4 US Gallon)
9. TIME REQUIREMENT
10. TEMPERATURE
11. FUEL PIPE SYSTEM
12. DUST EXTRACTION SYSTEM
13. LOADING ARRANGEMENT
14. FUEL TANK- Primary Chamber (500 litre)
Secondary Chamber(200 litre)

WORK FLOW

In the morning solid disposable waste from different departments is collected for the treatment and weighted and noted down carefully,

It is segregated into different categories as those to be incinerated and other plastic material that needs autoclaving.

The waste is then deposited into incineration 's primary chamber and their the temperature and time is set as each cycle requires 30-45 min.

The emitted gas from primary chamber then enters the secondary chamber (850 degree c) where the temperature is greater than primary chamber (1050 degree c) so the infectious agents are destroyed and then emitted out of the chimney ,now the gas is free of causative agent.

After cooling the incineration ash is collected in the ash chamber and the it is removed and decomposed into fully covered ash pit.

The plastic waste such as syringes, bottles, gloves ,etc to avoid reuse is then autoclaved at 121 degree Celsius in autoclave for 45 min/cycle and it is sterilized to avoid infection.

The sterilised material is put in a shuddering machine and is chopped in very small pieces and then it is packed and sold out .

MACHINES

Incineration – 3

Autoclave- 1

Shuddering Machine- 1

STAFF

Supervisor (1)

Worker (2-permanent and 5-on contract basis)

Workload- Daily 100 kg approx. Solid Waste is treated.

DATE	CATEGORY 1	CATEGORY 3	CATEGORY 6	TOTAL
1-4-13	.4	NIL	126.2	126.6
2-4-13	NIL	4.1	98.6	102.7
3-4-13	NIL	NIL	76.2	76.2
4-4-13	NIL	3.0	104.5	107.5
5-4-13	NIL	NIL	97.6	97.5
6-4-13	NIL	3.2	106.0	109.2
7-4-13	NIL	NIL	129.1	129.1
8-4-13	NIL	1.5	72.3	74.5

WASTE SEGREGATION

Container colour	Waste type
Yellow	Sharps
Red	Infectious Material/Blood/ Body fluid
Blue	Plastics / Disposable
Black	Office Waste

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