

**Summer Training at
Paras Hospital, Gurgaon, Haryana
(April - June, 2013)**

- 1. A Time Motion Study on Inpatient Discharge Process.**
- 2. Comparative Analysis of Various Methods of Dietary Costing.**
- 3. An Analysis of Non-Compliance Areas of Inpatient Medical Records.**

**By
Gagan Dhawan**

**Under the guidance of
Dr. Neetu Purohit**

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



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

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Certificate

This to certify that Dr. Gagan Dhawan, student of Post Graduate Diploma in Hospital and Health Management (PGDHM) from Institute of Health Management Research, Jaipur, Batch 17th has successfully undergone her summer training in Paras Hospitals, Gurgaon, Haryana, and has done projects on:

- A Time Motion Study on Inpatient Discharge Process
- Comparative Analysis of Various Methods of Dietary Costing
- An Analysis of Non-compliance Areas of Inpatient Medical Records

The candidate has successfully carried out the mentioned studies assigned during her summer training from 08 April 2013 – 08 June 2013 and her approach towards the study was sincere, scientific and analytical.

We wish her success in all her future endeavors.



Dr. Neetu Purohit

Associate Professor
IHMR, Jaipur



Dr. Ashok Kaushik

Dean Academics and Student Affairs,
IHMR, Jaipur

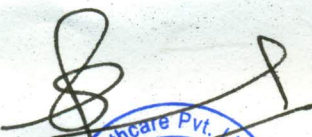
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June 8, 2013

WHOMSOEVER IT MAY CONCERN

This is to certify that **Dr. Gagan Dhawan**, has successfully completed her Summer Internship in this organization from **08th April 2013 to 08th June 2013**.

During her training period she was found to be sincere, dedicated and efficient in her work.

We wish her all the best for a bright future.


Parimal Sehrawat
Manager HR



ACKNOWLEDGEMENT

I, Dr. Gagan Dhawan, a student of PGDHM 17th Batch at IIHMR Jaipur, would like to sincerely express my heartfelt gratitude to:

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Contents

1.1 Overview of the hospital.....	5
1.2 Accreditations & Awards of the Hospital.....	5
1.3 Vision & Mission.....	6
1.4 Quality policy.....	6
1.5 Floor Directory of the Hospital.....	7
1.6 Services at Paras Hospitals Gurgaon.....	8
1.7 Details about departments visited.....	9
1.8 A Time Motion study on Inpatient Discharge process	
1.8.A Introduction.....	34
1.8.B Review of Literature.....	35
1.8.C Rationale.....	36
1.8.D Objectives.....	36
1.8.F Research Methodology.....	36
1.8.G Data Analysis and Interpretation.....	37
1.9 An Analysis of Non-compliance areas of Inpatient Discharge Process	
1.9.A An Overview of The Medical Records Department.....	41
1.9.B Objectives of the Study.....	44
1.9.C Methodology.....	44
1.9.D Data Analysis And Findings.....	45
1.9.E Suggestions.....	47
1.10 Comparative Analysis of Various Methods Of Dietary Costing	
1.10.A An Overview to The Food and Beverage Department	49
1.10.B Objective of the study.....	50
1.10.C,D,E Findings of the study.....	52
1.10.F Conclusion.....	53
1.11 References	54

Acronyms-Abbreviations

- ❖ CT - Computed Tomography
- ❖ ECG - Electro cardiograph
- ❖ ECHO - Echocardiogram
- ❖ F&B- Food and Beverages Department
- ❖ FRRO- Foreign Registration Regional Office
- ❖ GDAs- General/ ground Duty Assistants
- ❖ HR- Human Resource
- ❖ HSEB- Haryana State Electricity Board
- ❖ HCF- Health Care facilitator
- ❖ ICU -Intensive Care Unit
- ❖ IPD- In-Patient Department
- ❖ MLC- Medico legal Case
- ❖ MRD- Medical Record Department
- ❖ MRI- Magnetic resonance Imaging
- ❖ NABH- National accreditation board for hospitals & health care providers.
- ❖ NABL- National accreditation board for testing and calibration laboratories.
- ❖ OPD- Out-patient Department
- ❖ PGDHM- Post Graduate Diploma in Hospital Management
- ❖ PHC- Preventive Health Check
- ❖ PWT – Patient Waiting Time
- ❖ TMT - Tread Mill Test
- ❖ TAT- Turnaround time
- ❖ TPA- Third Party Administrator
- ❖ USG - Ultra Sonography
- ❖ UPS- Uninterrupted Power Supply

1.1 Overview of the Hospital

Paras Hospitals Gurgaon is a NABH accredited 250 bedded super-specialty hospital. It was the first hospital in Gurgaon Region to get NABH accreditation. Since its inception it has aimed to be a preferred healthcare provider for all. Its expertise in advanced medical and surgical treatments has helped thousands of patients receive world class quality treatment at affordable costs. Paras is equipped with one of the leading neurosciences centers in the region which boasts of all facilities needed for research and surgery in the field of neurosciences. Besides this it has 55 specialty departments which include medicine, minimal invasive surgery, gynecology, oncology, ophthalmology, dermatology, cosmetic surgery, plastic surgery etc. In its mission to provide affordable healthcare services to all people, it has taken a step ahead to start to major projects in state of Bihar, Paras HMRI hospital, Patna has a capacity of 350 beds, while Paras Global hospital Darbhanga has capacity of 100 beds. The multidisciplinary facilities provided by Paras hospital at its Patna and Darbhanga hospitals make it one of the largest healthcare providers in Bihar. Paras hospital is also renowned globally for its specialized international patient services. Patients from all across the globe visit Paras frequently for health checkups. Customized treatment and surgery plans are designed to benefit international patients.

1.2 Accreditations:



National Accreditation Board for Hospital and Healthcare Providers (NABH) Accreditation

Paras is the first multispecialty hospital in Gurgaon to receive this accreditation. Primarily focusing on patient care, safety, continuous quality improvement and innovation, NABH (accredited by ISQua, International Society for Quality in Health Care) has been set up to bring the world's best healthcare quality standards to India. This accreditation is testimony to the fact that Paras Care Pathways are protocol driven, reflect global practices and ensure that patients consistently receive quality care.

National Accreditation Board for Testing and Calibration Laboratories (NABL) Accreditation



Paras Diagnostics is accredited by NABL, India's leading accreditation body for pathology services. This reiterates Paras Diagnostics' position as a premier provider of pathology services in India. With a team of highly experienced and efficient staff, it provides services strictly adhering to international quality standards. Its well-organized sample management practices and state-of-the-art automated equipments ensure that patients receive quick and accurate results.

1.3.A. VISION:

1. To become preferred healthcare provider for all.
2. Partnership in caring and curing
3. Providing excellent medical care to our patients through our faith in values, integrity, respect, team work and innovation to achieve complete patient satisfaction.

1.3.B. MISSION:

- The mission of Paras hospitals is to provide competitive, innovative and accessible medical care to the patients.
- To facilitate improving health of the patients by providing quality services through our professionals that is affordable and delivered:
 1. Compassionately
 2. Appropriately
 3. Responsibly
 4. Efficiently
- To exhibit stewardship and creativity in the management of all available resources for patient care.
- To ensure the delivery of our services enabling patients, families, guests, healthcare professional our associates to make the best use of our facilities and environment consistent with our philosophy and commitment of the patient care, health education and strategic initiatives.
- To provide excellent family center health care to the entire family and children in an environment that meets or exceeds the expectations of those we serve.

1.4 Quality Policy:

- 1) We at Paras hospitals believe in partnership with communities we serve.

- 2) We will fulfill our purpose of providing quality health care services by
 - a) providing uniform patient treatment and care, use of evidence based medicine and excellence in clinical outcomes
 - b) Knowledge enhancement of our staff, clinicians and patients.
 - c) Delivering superior customer services and complying with statutory regulations

1.5 Floor Directory

Ground Floor

- Atrium(Reception)
- Phlebotomy(Sample Collection)
- OPD-Pharmacy
- International Patient Lounge
- Diagnostics(Imaging)
- Blood Bank
- Emergency
- Dialysis Unit
- Endoscopy
- Visitors Cafeteria
- Day Care

First Floor

- Operation Theatre Complex
- Recovery Area
- Cath Labs
- Surgical ICU
- CCU
- Cardiac ICU

Second Floor

- Service floor

Third Floor

- Twin Sharing Rooms
- Economy Rooms(Four Sharing)
- Mother and Child Care Unit
- NICU

- Waiting area

Fourth Floor

- PICU
- International Suites
- Wards

Upper Basement (-1)

- H.R Department
- Staff Cafeteria
- Laboratory Services
- Billing and TPA department
- Marketing Department
- Corporate office
- Accounts Department
- Food & Beverages Department
- Nutrition & Dietetics

Lower Basement (-2)

- CSSD
- IPD Pharmacy
- Housekeeping Department
- Biomedical Engineering Department
- Material store
- Purchasing Department
- MRD
- Engineering Department
- Parking area

1.6 Services At Paras Hospital

- Anesthesiology
- Cardiac Sciences
- Dental Surgery
- Dermatology
- Dietetics & Nutrition
- Emergency & Trauma Centre
- Endocrinology
- ENT

- Gastroenterology
- Geriatrics
- Gynecology
- Hematology
- Head & Neck Onco-surgery
- Internal Medicine
- Laparoscopic, Gastrointestinal & Bariatric Surgery
- Mother & Child
- Neuro Sciences
- Neuro, Vascular And Non Vascular Interventional Radiology
- Obstetrics
- Ophthalmology
- Orthopedics & Joint Replacement
- Pediatrics
- Physiotherapy & Rehabilitation
- Plastic & Reconstructive Surgery
- Preventive Health Check-ups
- Psychiatry & Psychology
- Pulmonary & Critical Care
- Radiology
- Renal Sciences & Urology
- Rheumatology

1.7 Details About Departments Visited

1.7.A. DIALYSIS

Equipment:

There are total six dialysis machines in hospital. Five are in dialysis room and one on ICU floor.

Out of six, four are of 'fresneus' company and two are of 'B-Bron' company.

Daily routine:

Dialysis is done in three shifts morning, noon and evening (i.e. 8am, 12noon and 4pm)

There are 2-4 patients per shift, which are served on prior appointment basis.

Time taken:

Depending upon Doctor's recommendation, dialysis takes 4-6hours

Frequency:

Patients with kidney failure require dialysis twice to thrice a week. Patients with residual kidney function may require is every 15days.

Manpower:

Dr PN Gupta (HOD)

Staff nurse-4

Technicians-2

Wardboy-1

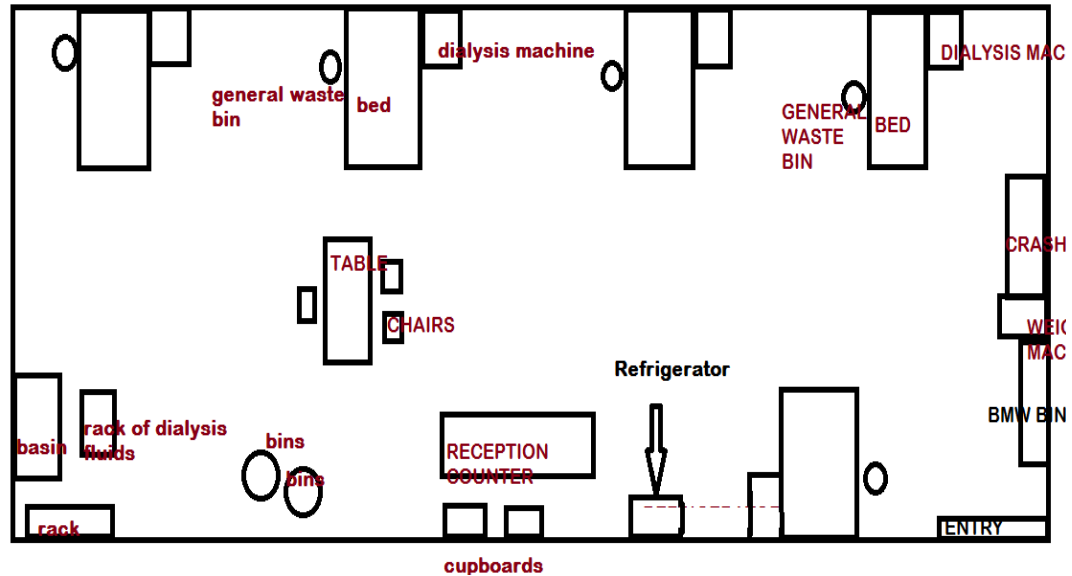
(Staff works in 2 shifts i.e. 8am-4pm and 12noon-8pm).

- **Process**

- Registration of the patient.
- Scheduling of the dialysis procedure is done and patient is given appointment in one of the shifts (8am,12noon and 4pm).
- Consent form is taken and details are entered in HIS.
- Blood tests done before the dialysis to rule out possible infections (HIV, Hepatitis) and complete blood count is done.

- Biomedical waste Management protocol is followed and infection control policies are followed.
- For reuse of Dialyzer (for same patient only) -wash with RO, fill 10% Formalin Heparin- 5000 IU(1 ml+19 ml water)—20 ml
10 ml bolus- 2.5 IU--- 2 ml given four hourly
- **Complications:** if patient is allergic to Heparin than **Fragmine** is preferred (3000 I.U.)
- **Prices:** Each dialysis session per patient would cost about Rs. 2600.

Rough Sketch of Dialysis Department



1.7.B. CENTRAL STERILE STORE DEPARTMENT

- **Location :** Basement (-2)
- **Manpower:** 1-Incharge,4-Technicians,Night shift- 1 Technician
- **Layout:** Small Hallway which leads to the door of dirty zone .It is the point of receiving of soiled instruments from the OPD and IPD personnel.

Zones:

- 1.Dirty Zone
2. Clean Zone
3. Sterilized zone

- **Timings:** Issue timing-8:30am -10:30am,ETO issue timing-8:00pm to 7:00pm

• Protocol followed

- **1. Pre-washing:** All instruments are prewashed at their respective depts. before they are sent to CSSD.
- **2.Dirty Zone :**Instruments are received, checked, sorted according to checklist

Equipments present

Name of the equipment	Function	Du

Ultra sonic cleaner	It cleans the instruments in 5 stages at 82 degrees i.e. prewash, washing, enzymatic, rinsing and drying.	1 hr : 8-9 cycle per d
Large ultrasonic washer with air gun	Used for large and delicate instruments respectively. After cleaning of instruments with rapid cleanser in the ultrasonic bath they are rinsed in running water.	15-20 minu

➤ 3.Clean Zone

After washing, the instruments are carried to the clean zone. The packing of instruments is done in this zone in linen.

Equipments Present

Name of the equipment	Functioning	Duratic
Autoclave	Used for instruments in bulk (121 to 134 degree Celsius and 32 psi	30 min

ETO (Ethylene Oxide) zone

Equipments present

Name of the equipment	Functioning	Duratic
ETO unit	Used for instruments which are sensitive to high temperatures like cautery, plastic objects etc. These are sterilised at 50 degree Celsius using ethylene oxide gas in a 100ml cartridge	4hr steriliz 5min vaccun min time, i hrs ae times.
Packing unit(manual)	For sealing of instruments packed in medical grade paper.	1 to minute

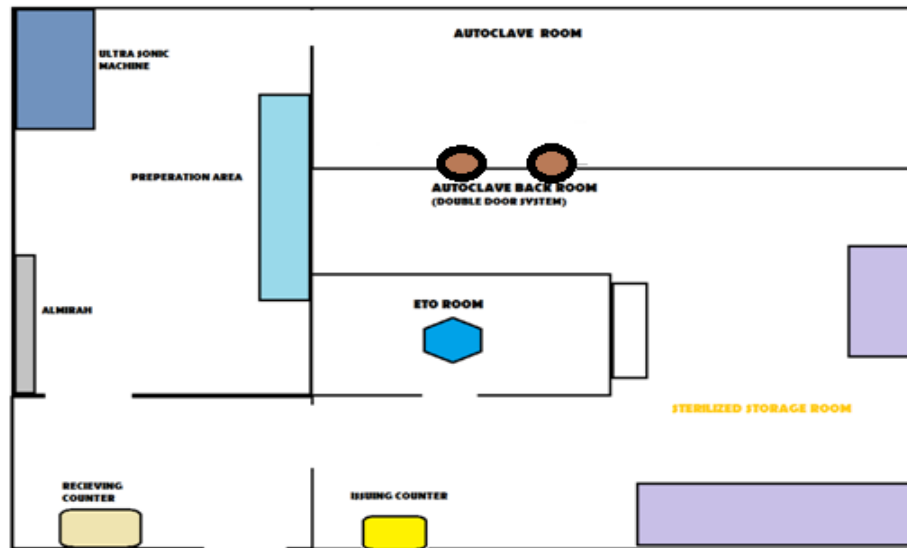
➤ 4.Sterilized zone

All the sterilized instruments are kept in this zone and from here, are sent to OT and ICU. Some instruments are kept in loan format as backup for emergency. It is a positive pressure room and has a temp of 22 -25 degree Celsius.

Cleaning of the Dept: Fumigation- weekly early morning (Monday)

Quality indicators use: Chemical and biological indicator tests, Strip test, Autoclave tape, Swab culture test, Bowie Dick indicator.

Rough sketch of CSSD



1.7.C. BIOMEDICAL ENGINEERING DEPARTMENT

- **Location** : Basement(-2)
- **Layout** : Single room
- **Manpower** : Technical head-1

Engineers-2 (shift Timings-8:00-5:30pm and 12:00-8:00pm)

Trainees-2

- **Responsibilities**

- ❖ Deal with the new requirements of different departments. The concerned department sends request for new equipment to the Bio engineering department (BED). BED forwards it to the purchase dept. The purchase dept. calls the meeting of vendor,

purchase dept personnel and biomedical engineering dept. person. The vendors give a demonstration on equipment usage to the users (doctors, nurses etc.) and feedback is taken from them. According to the feedback and the quotations of the vendor the equipment is bought.

❖ Maintenance

AMC: Annual Maintenance Contract including only the labor cost and is 1 % of the total cost of the product

CMC: Company Maintenance Contract including the labor cost and the cost of the spare parts.

PMS: Preventive Maintenance Services are done quarterly depending on the type of the equipment.

❖ Training

Training of the staff is done in 10 days of 2hrs classes regarding the working and usage of the equipment.

❖ Complaints: 8-10/day

- Mainly from ICU and OT
- For some equipments AMC and CMC not necessary e.g. Colposcopy
- For USG - **PNDT** approval is necessary
- For X-ray, C.T – **AERB** approval and licensing is mandatory (Atomic energy radiations regulatory board)
- Oncology setup require AERB approval

1.7.D. BLOOD BANK

- **Location** : Basement (-1)

➤ **Donor Registration and screening area**

In this area the donor is registered and his height, weight, Hemoglobin level are measured and general physical examination is carried out .It includes two rooms, one for the consultants and the other for Hb testing and a separate registration counter.

➤ **Various zones of blood bank:**

- Whole blood donation area
- Aphaeresis room
- Refreshment room
- Waiting area
- TTI (transfusion transmitted infection) testing room
- Serology room for blood group testing
- Issue counter

- Sterilization room for discarding blood
- Storage section
- Component separation room
- Record section

- **Equipments**

Room	Equipment room
Blood collection room apheresis room	2 couches 2 couches with attached component separating unit of Fennel Baxter.
TTI	1 Elisa testing machines (for HBcAg, HIV, HCV, HbsAg, Malaria.
Serology room	Incubator Water bath Blood group testing unit
Sterilisation area	Autoclave for sterilising infected blood before discarding
Storage section	2 Quarantine freezers 2 Deep freezers Platelet agitator Cold storage
Component separation room	Component box Laminar flow Plasma extractor Sealer Weighing machine

- Temperature of 22 degrees is maintained in blood bank.

Manpower: HOD (laboratory and blood bank)-1

Blood bank incharge-1

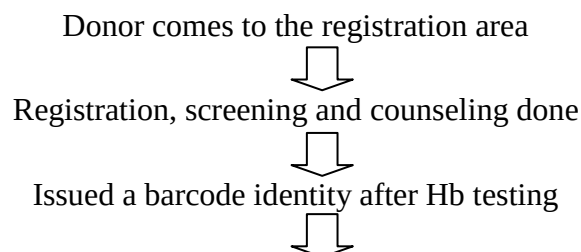
Chief medical officer-1

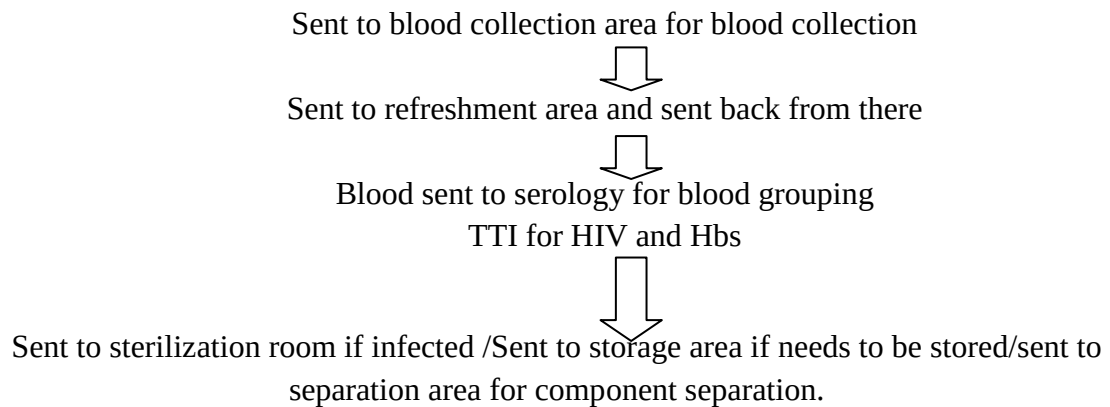
Senior technician-1

Technician- 8

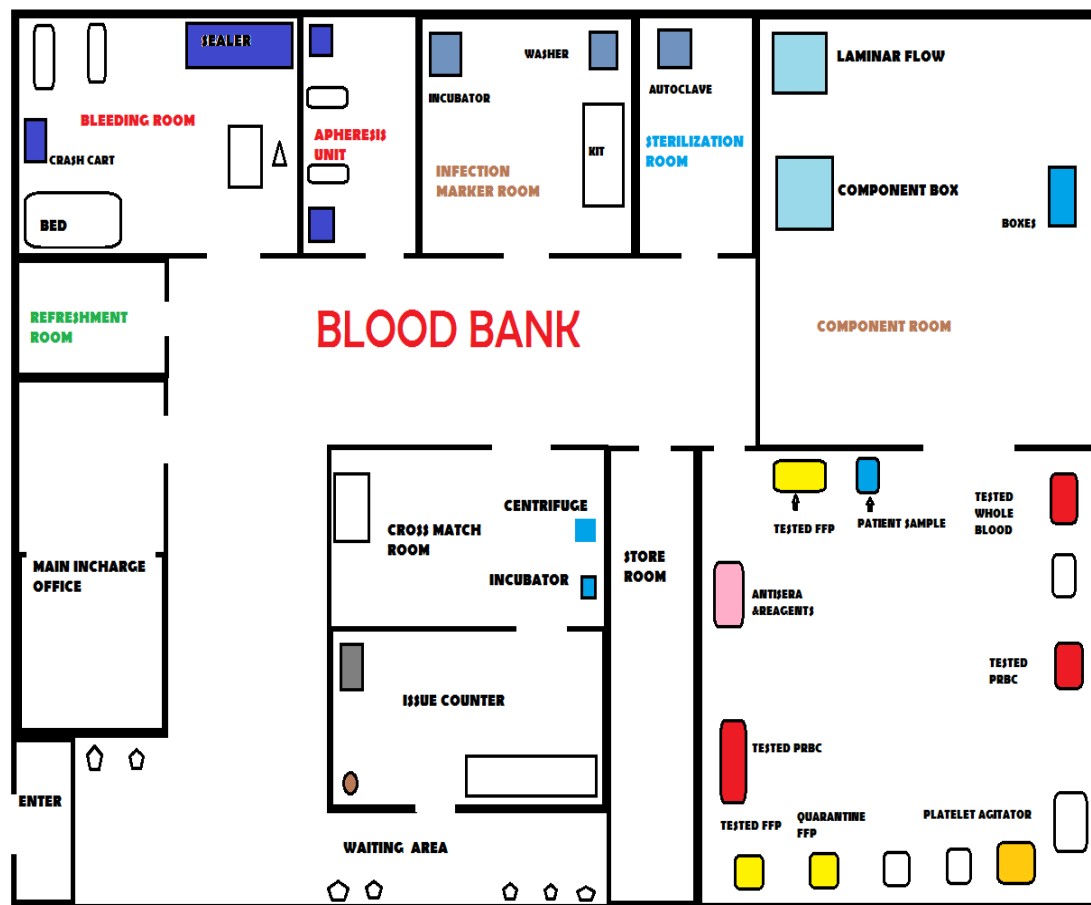
Staff nurse-1

- **Process flow**





Standards: 20 units per bed per year is the normal requirement. So 6000 units per year and 500 units per month and 40 units of every blood group. Discarding rate is 1% for RBC 20% for Platelets 80-85% is used. Viability of RBC is 42 days, 1 year for plasma, 5 days for platelets.



1.7.E. LAUNDRY DEPARTMENT

Laundry is outsourced- *FAZNI (Palam vihar)*

MANPOWER:

1-HOD (common for Laundry and Housekeeping)

1-Laundry Supervisor

1-Laundry Tailor

1-Ward boy

Issue timings- Morning 8- 9am and Evening 5-6pm

PROCESS

- All dirty Linen are collected and send to outside vendor with slip. If sent in morning, cleaned Linen return in the evening and if sent in evening return back in morning, the next day. Linen Exchange book is maintained (Article, dirty given, damaged, clean record is checked)
- 'Topping up' method of linen distribution is followed in the hospital.
- Cost of laundering the linen depends on its weight e.g. for Towel Rs 5 and for Bed sheets it is Rs 4.75.

IMPORTANT POINTS

- Separate laundry store is there for O.T linen.
- For per month Inventory, number of discarded linen is noted on form signed by in-charge.
- Loan slip is filled for extra requirement
- At time of issuing linen by staff, slip is given which is shown at the time of return.

ARTICLES IN LAUNDRY

- Bed sheet
- Draw sheet
- Pillow cover
- Hand towel

- Bath towel
- Pt's and Pt's baby kurta pajama
- Blanket (big,check)
- Blanket & baby sheet
- Table sheet
- Gown (maternity, Doctor, visitor)
- Eye sheet, shoe cover
- Doctor & technician (scrubs)
- Surgical gown (overlapping & plain)
- Green sheet (long, medium and small)

1.7.F. INTERNATIONAL MARKETING

Manpower

1-Manager

2-Executives

No of patient on monthly basis

Total-100 to 150 patients

IPD-30 to 40 patients

Number of patient visit maximum in June –July month

60% of international patient come to hospital through Health corporate facilitator (HCF) and 40% patients come directly.

Hospital deals with about 75 HCFs.

Important norms

- If patient admitted through invitation visa, Foreign Registration Regional Office (FRRO) is to be submitted.
- FRRO is to be registered within 14 days, if patient visa is more than 180 days. For patient from Pakistan FRRO procedure to be done within 24 hrs, for Afghanistan within 36 hrs and for Congo FRRO procedure is not required.
- If tourist patient admitted, N.O.C has to be obtained from police station.
- For NOC- passport, visa, photo ID and hospital letter to be submitted in the police station.

- Three copies of number of patients on weekly basis are submitted. One remains with hospital, one in police station and one with security officer.

Patient admission procedure

- Reports are mainly sent by patient via business provider.
- Negotiation with doctor, he tells patient regarding treatment plan and probable stay in hospital and in guest house.
- Send to billing department which give details regarding estimate and send to business provider via e-mail.
- If patient satisfies with the feedback of hospital, he contact I.M department for the treatment.
- At the time of discharge 'fit to fly' certificate is to be issued to the patient by treating Doctor.

For International TPA patients

- If patient admitted through International TPA Pre- estimate letter and prescription is send on daily basis.
- Guarantee of payment (GOP) is received from TPA within 24 hrs
- Estimated bill given to patient on daily basis. If bill exceed than the given estimate, the patient counseled by the doctor.
- BUPA is international insurance company in which 80% of cost of treatment is paid by insurance and 20% paid by patient himself (co-insurance).

For Embassy patients

- All documents are transferred directly to the embassy.
- Swift code is required for direct transfer.

For NGO patients

- At the time of discharge, total estimate and discharge letter is given to patient comprising of Date of Admission and Date of Discharge.
- It is approved by NGOs and refunding is done in certain pre-decided period of time.

1.7.G. LABORATORY SERVICES

MANPOWER:

Doctors-3

Supervisor-1

Team leader-1

Medical transcriptionist-2 (1 is co-coordinator)

Technicians-17 (work in three shifts)

Sample collection room: sticker is pasted on the test tube which will carry patient's details. Test tubes are color coded.

Purple: blood count, Grey: blood sugar, Red: blood biochemistry, Light blue: coagulation profile, Green: lipase and fungal culture, Black: ESR

Here, a jar containing sodium hypochlorite is also present, in which syringes are soaked before disposing them off in biomedical waste bins.

Report room: after preparation, reports are sent to report room, which is in close vicinity to OPD area. Reports are arranged in alphabetical order (according to name of the patient), and are dispatched from here.

Some of the outsourced tests are:

Hb electrophoresis, Protein electrophoresis, Alfa feto protein, Anti CCP, Anti nuclear antibody, Biopsy, etc

Process-Test is prescribed by doctor; Billing is done at registration counter than Patient is guided to sample collection room. Test is selected and acknowledged in HIS, Sample is withdrawn, GDA takes samples to laboratory. Approximately, after every half an hour. GDA leaves the samples at receiving counter inside the laboratory. Sample is processed, tests are performed and finally result is fed into HIS.

EQUIPMENT:**Microbiology:**

Microscope-1, Water bath-1, Bact-alert-1, Bio-safety cabinets-2

Hematology:

Vesmatic-20 (measures erythrocyte sedimentation rate),CA-50 (measures PT and APTT; reagents used are calcium chloride, actin FS, thromborel S),KX-21 (measures complete blood count; it's a three part machine reagents used are: stromatolyser and cell

pack), Sysmax XT 200i (measures CBC and ratio count; it's a 5 part machine and reagents used are sulpholyser, stromatolyser4DL, stromatolyserFB, cell pack, stromatolyser 4DS)

Coagulation:

CobasB221 (measures arterial blood gases, electrolytes, hb), Centrifuge machine (5250rpm), Microscope (160, 40, 10, 100 oil immersion lenses)

Clinical pathology: (urine and stool)

Centrifuge machines-2 (16 capacity and 40 capacity), Stock refrigerators-3, Storage freezer-1, Biosafety cabinet-1, microscope

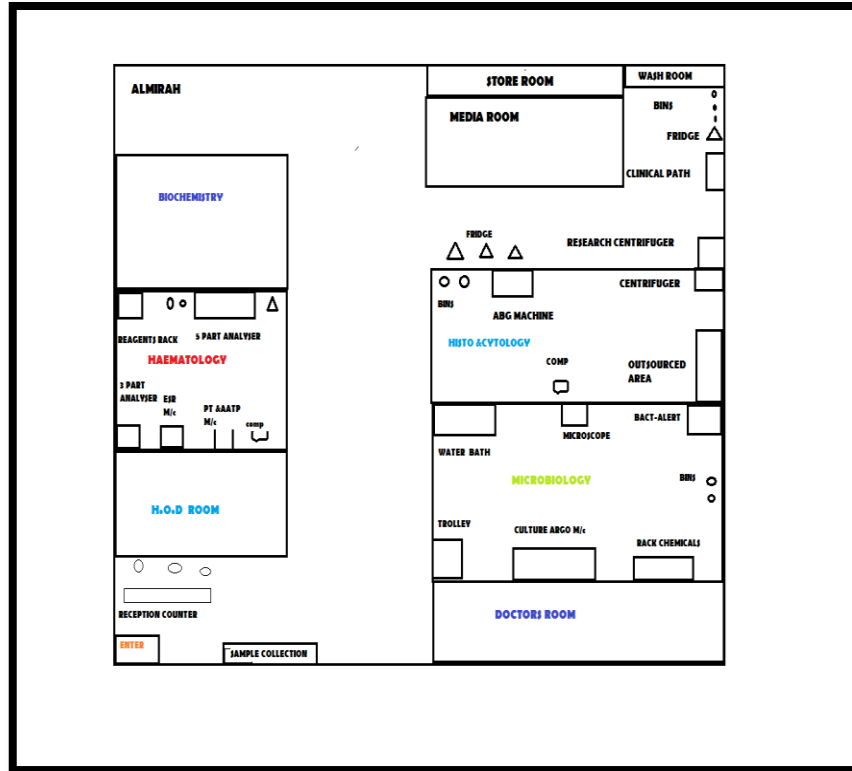
Autoclave room:

Refrigerator, Autoclaves-2, Hot air oven-1, Incubator-1 (37 degrees), Incubator-1 (56 degrees)

Bio chemistry:

- a. ECI: for measuring hormone levels and immunoserum
- b. Minividas: for serology, HAV, IGM, rubella, cortisol, coagulation profile, ovarian cancer marker (CA 125), CEA (cancer marker).
- c. Fusion 5.1: it is fully automated performs biochemistry tests e.g. LFT, KFT, lipid profile, blood sugar, glycosylated hemoglobin, total iron binding capacity, etc
- d. Erba chem7: semi automatic, measures microalbumin, microprotein, lipase, LDH, GTT, G6PD, ADA (TB scanning).
- e. Rotary shaker: for mixing the sample.

Approximately 300 hundred samples are received in lab every day. Ratio of IPD to OPD samples is approximately 2:1.



1.7.H. MATERIAL STORE

STOCK includes:

- General furniture (cupboards, etc)
- Instruments (kidney trays, burners, syringes, sample containers, etc)
- Medical consumables (disinfectants, absorbents, etc)
- Non medical consumables (e.g. stationery, letter heads, visiting cards, kettles etc)

MANPOWER:

Store executive-1, Junior executive-1, Department is headed by Commercial Head.

INVENTORY:

- Stock for one week is maintained all the time.
- Indent is raised twice a day according to monthly requirement.
- In case of urgent requirement, local purchase (LP) is made. (Which happens mostly in case of frequently used surgical instruments).

DOCUMENTATION:

Issue File

Asset issue file: entries are made for issuing assets to departments. (Which are not done very frequently)

- Material issue file: entries are made for issuing materials to departments, which is done serial wise. There are minimum 25 entries per day. *Every department maintains its stock according to the weekly requirement.*

Challan File:

Entries of those purchases are done whose bills are not received, but challans.

Bill Receiving Register: It carries entries of those bills, which are received from vendor. Along with entry, its GRN no is also mentioned, which is generated when entry is made in HIS.

Bill Forwarding Register:

Entries of those bills are done which are forwarded to accounts department and receiving is also mentioned along with the entry.

Purchase Indent File:

If the materials requested by the department are not in stock, the requirement is floated in purchases, (which are purchased within 7 days) and in this register entries are made of those requirements.

Earlier *Purchase Order Authorization File* was also maintained, but now it is done through HIS.

Challan Procedure

When bill is not sent by the supplier, he sends challan. So no GRN note is formed of this purchase. In case the stock is urgently needed by the departments, materials are issued and record of receiving is maintained on challan itself. So when the supplier sends the bill, the normal entry is done in registers and HIS. In case bill is not received in one month, it is followed for the reasons of delay and expected date on its arrival.

PROCESS

According to monthly requirement, indent is raised Purchase department prepares purchase order; delivery is expected within 7 days. Vendor arrives with the stock and entry is recorded at main gate. Inspection of stock is done at entrance, as per purchase order, brand, quantity, expiry and batch number are checked by store executive. Entry is made in bill receiving register along with GRN number which is generated when entry is

made in HIS, bill is then forwarded to accounts department and record of receiving is maintained.

1.7.I. PHARMACY

Manpower:

OPD PHARMACY: 10

IPD PHARMACY: 13

1. HOD-1
2. Assistant manager-1
3. Senior pharmacist-1
4. Assistant pharmacist-5
5. Store executive-1
6. Data entry operator-1
7. GDA-3 (At night we have, 2pharmacists, 1 assistant pharmacist and 1GDA.)

Service:

- Maximum indents are issued ICU, approximately 450-550.
- From IPD wards- approx 300.
- To OP pharmacy-approx 200 indents a day.
- Every department is served on daily basis as per their requirement.

Process At IPD Issue Desk

Nurse raises indent via HIS which is acknowledged by pharmacist, print out of the requirement is taken out .pharmacist arranges the medicines accordingly which are then checked on checking desk then, GDA takes that to respective ward with two copies of bills. One copy is kept in patient's file and on other one nurse writes 'received' and sign it and send back to pharmacy which is kept as record with pharmacy.

Process Of Pharmacy Return

After the Discharge is announced by Doctor, nurse enters the pharmacy return in HIS and sends the return along with activity sheet to pharmacy, pharmacist receives, verifies and acknowledge it and give approval and update the same in activity sheet of patient.

Also, pharmacist maintains a register to keep track of returns that he receives in a day.

Process At Checking Desk Medicines from pharmacy return desk and IPD indent desk are checked over here. For issuing the indent separate baskets are maintained for respective wards/floors (for daily requirement of the ward), GDA picks the basket and

delivered to respective departments on daily basis.

Area-approx 40*40 feet

Expiry alert-

Drugs are return to the vendor before three months of their expiry date. Drugs are checked for expiry every month and entry is done on a chart which is maintained for each rack. During purchase no drug is received with less than one year of shelf life.

Narcotics

- Are kept in double lock with two sets of keys, one with manager and other with senior pharmacist.
- In every department a particular amount of stock of narcotics is maintained
- Department has to send broken ampoules to pharmacy to get new stock.
- Also, a register is maintained where the patient name and record and prescribing doctor's name is mentioned.

Arrangement Of Drugs:

- Are arranged in alphabetical order
- Fast moving drugs are kept separately
- Costly drugs are kept in separate cupboard
- Separate racks are maintained for look-alike and sound-alike drugs.

Purchase Mechanism

Indent is raised by pharmacy, purchase order is made, which is sent via mail to purchase department which in turn deal/negotiates with vendors. Vendor is expected to make delivery at the most in three days, on arrival of the stock, inspection is done by guard about P.O. At medical store inspection, of brand, quantity, packing, expiry, batch no is done. If any query arises, purchase department is informed for verify

Busy Hours:

For return: 10am to 12am

Inventory for 1 month is maintained, Purchases are made twice or thrice a week. For local vendors stock of 7 days is maintained.

1.7.J. Engineering & Maintenance Department

Electricity supply

Sources:

- 1) HSEB
- 2) Diesel generator-500KVA (01)
- 3) Diesel generator-380KVA (01)
- 4) UPS-30KVA (02)
- 5) UPS-20KVA (01)
- 6) UPS-05KVA (01)

Various preventive checks (Circuit Breakers):

- Voltage regulator in transformer
- Vacuum circuit breaker (present at the entry of current in hospital)
- Vacuum circuit breaker (at Low Tension panel)
- MCB (at floor panels)
- RCCB (at distribution boxes): residual current circuit breaker, it is the most sensitive type of circuit breaker

Diesel engine generators:

As the combined KVA of both generators (i.e. $500+380=880$) is less than the requirement (i.e. 80% of that supplied by HSEB which is 1250, 80% will be 1000 KVA) so to compensate that, smaller chiller plant (185TR) is shut down. To maintain the adequate functioning and efficiency of generators, there are various checks namely A, B, C, D checks.

A-CHECKS: (done as daily routine)

- Check oil level
- Cleanliness of DG
- Battery voltage (should be 24 V to start the DG when main power goes off)
- Any leakage
- Filter condition
- Oil level
- Coolant level
- V-Belt condition

B-CHECKS: (Every 300-350 hours)

- Change oil

- Change oil filter
- Change air filter
- Change water separator
- Radiator cleaning with chemical

C-CHECKS: (every 800-1500hours)

- Change oil
- Change filters
- Change air filters
- Change water separator
- Radiator cleaning with chemical
- Check all electrical terminals and thimbles
- Check pollution level

D-CHECKS: (every 3000-5000 hours)

- Complete DG set should be dismantled
- Turbo charger service
- Injector pin service
- Cylinder head service
- PT pump service
- Repeat B-checks

IF MORE THAN 10,000 hours:

- Change piston bearing
- Change nozzles
- Piston cylinder also needs to be charged
- Check pollution level

Also, there is a checklist, components of which are:

This is filled every morning:

- Diesel level
- Tube oil level
- Belt tension
- Wiring Connector
- Vacuum indicator

This is filled after DG is started:

- Leakage of oil
- Speed in RPM (should be 1500-1545, for adequate current production)
- Check lube oil pressure (>2.2kg/cm sq.)
- Check coolant temperature

Electrical check: (checked on daily routine basis)

- Check frequency (50Hz)
- Main alternate voltage (412-415V)
- Check fuse and connection
- Check battery voltage (24V)
- Check engine hardness

Various registers:

- Transformer reading (per day)
- Current load (per hour)
- Generator check list
- Unit register (in this register per day readings of HSEB main meter and Diesel engines are noted down and also the number of hours DGs were working per day)

Equipment:

- Low Tension Panel: Roda (60-65lakhs)
- Generators: Cumin (500KVA – 45lacs & 380 KVA- 35 lacs)
- Floor panels: Roda
- Distribution boxes: Asian
- Vacuum circuit breakers (3-4lacs)

Flow Of Electric Supply:

HSEB- 11KVA high tension
supply



VCB



step down tranformer (oil
type)



1250 KVA low tension
current



Low Tension Panel



floor panels



distribution box (both
power supply-15 ampere
and light supply-6 ampere)

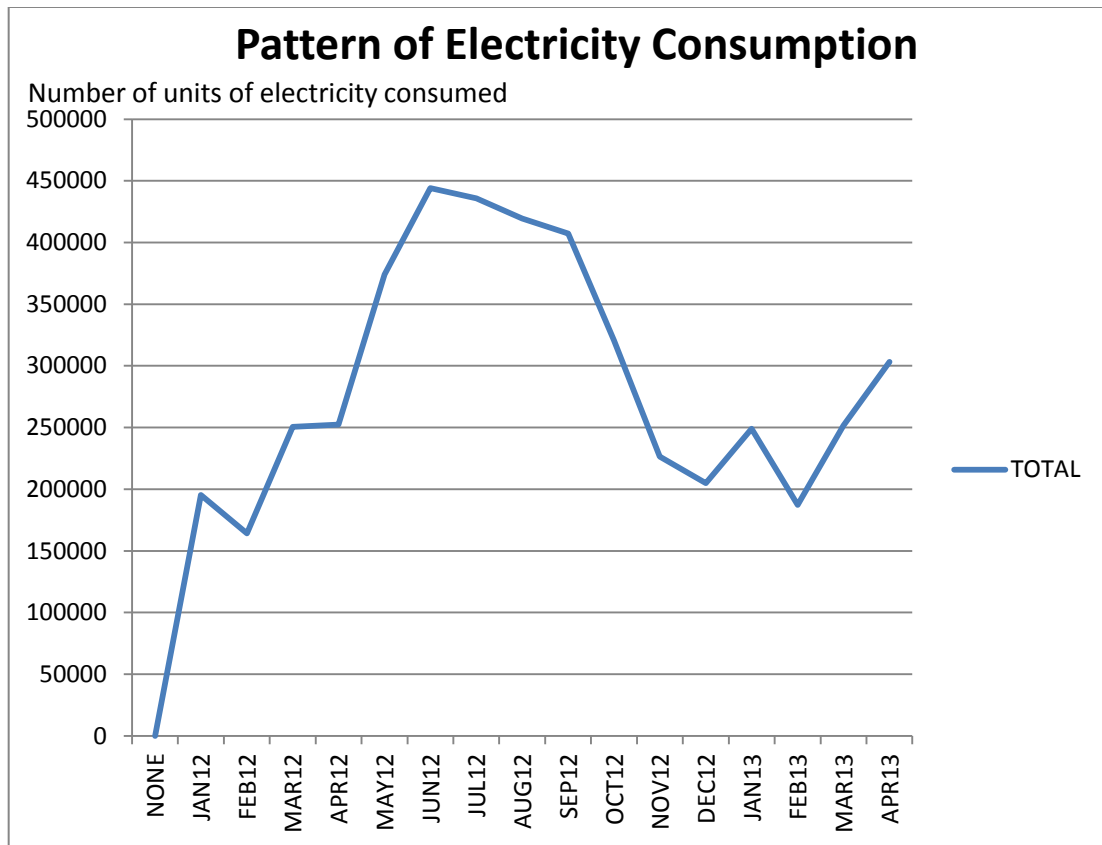


FIGURE.1 shows the pattern of electricity consumption over the period of January 2012 to April 2013.

WATER SUPPLY:

SOURCES:

- Ansal (supplies 50,000liters per day)
- Bore wells 5Hp (02) [can supply at the rate of 20,000 liters per hour]

Bore wells work for 15 hours to meet the requirement of the hospital that is approximately 3lakh liters per day.

TANKS: (total-06)

- Fire safety-02
- Raw water-02
- Treated water-02

Each tank is of capacity, one lakh liters.

WATER SOFTENING PLANT:

It consists of three vessels:

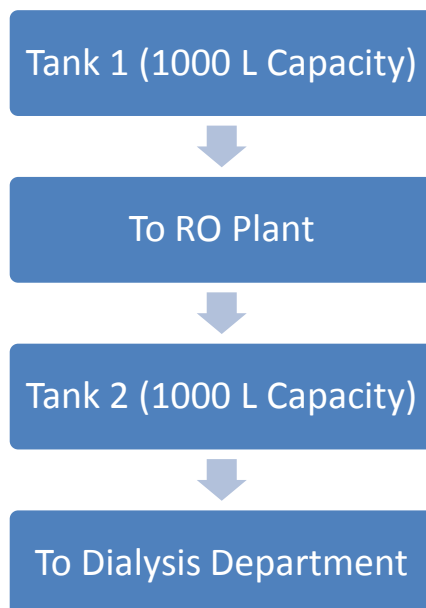
- Media (sand): removes dust
- Charcoal (carbon): filters dust completely
- Resin (activated salt): removes hardness of the water by bringing down the level of Total dissolved solids.
- ✓ After charging the salt, plant can efficiently remove the hardness of 2-3lakh liters of water.
- ✓ Salt is charged every 12 hours.
- ✓ It takes four hours and 80 kgs of salt is used to charge the plant once.
- ✓ Plant works for 4-5 times a day and for 2 hours at a time.
- ✓ One motor of 5 hp are used to run the water softening the plant, at 3kgs of pressure (there is one motor of same power kept as standby).
- ✓ Raw water contains approximately 250-300ppm of hardness after treatment it drops down to 10ppm.

After Softening:

The water is supplied to the whole building with the help of a motor of 5hp at the pressure of 3.5kgs at top floor. (There are 3 motors for this purpose, one works at a time and two are kept as standby).

Water treatment for dialysis:

Water supplied to DIALYSIS department is subjected to reverse osmosis



Softened water (10ppm) is supplied to tank-1, which is of 1000 liters capacity, from where it moves to reverse osmosis plant. This can purify 200 liters of water per hour. RO plant is run according to the requirement in dialysis department; normally it runs for 4-5 times a day and 3 hours a time. If all the beds in Dialysis are occupied, then it is even run for 12 hours in a day continuously. After treatment the water used for dialysis is 3ppm.

Drinking Water:

It is also purified by reverse osmosis. Method is same as that for dialysis except that RO plant is of larger capacity and it can purify 500liters of water in an hour and the drinking water is 10ppm after treatment.

Daily consumption is 6,000 liters.

It is run for 12-13 hours a day.

Quality check:

- Register 1: TDS and hardness is checked and noted down before and after charging the plant.
- RO register: TDS of water, any leakage, number of washes and conductivity is checked and noted on daily basis.
- Drinking water RO:
 - ✓ Hardness of raw water is checked and noted.
 - ✓ Reading of hardness water after treatment is checked and mentioned.

A TIME MOTION STUDY

ON

INPATIENT DISCHARGE PROCESS

1.8.A. INTRODUCTION

Discharge from a hospital is the point at which the patient leaves the hospital and either returns home or is transferred to another facility such as one of the rehabilitation or to a nursing home. Discharge involves the medical instructions that a patient will need to fully recover. Discharge process is a service that considers the patients need after the hospital stay and may involve several different services such as visiting nursing care & physical care as well.

Discharge of the patient is a multidisciplinary & inter agencies linked task. Consultants of various specialties, therapist and pharmacist, dietician, nursing staff, accountant section, medical transport services, social workers, patient and family members of the patient all have their stake in discharge process.

Discharging the patient from the hospital is a complex process that is fraught with many challenges. Faulty discharge may cause the re-hospitalization of the patient. Studies have shown that a substantial percentage of the patients are readmitted in the hospitals due to untimely discharge. A study in New England Journal of Medicines found that 20% of the Medicare patients are readmitted to the hospital within 30 days of discharge due to rocky discharge from the hospital to home.

Early discharge may not lead to overall cost savings as it results in need for more intense subsequent health care utilization, including emergency department or nursing facility visit. Again delayed discharge is a loss for hospital economy. So promptness of discharge process with accuracy is the need of hours for hospitals nowadays. An improvement in the discharge process of the patient results in following:

- ✓ Nursing staff will spend less time on discharge process; hence more hands on time with patient and personal development will be there.
- ✓ Cost saving will be there from decrease in supply cost.
- ✓ Patient improved satisfaction with timeliness of discharge process and less wait time in ward for availability of bed for new admissions.
- ✓ There will be increase in number of inpatients in hospital.

Standards guidelines have been given by NABH, JCI and NHS for discharge policy of patient. These guidelines cover the various parameters which should be in place to carry out safe and efficient discharge.

1.8.B. Review of literature:

A 325 bed hospital situated in Indiana did a project on patient satisfaction in 2005. Study found that patient satisfaction was profoundly impacted by appropriateness of the discharge process of the patient from hospital to home or interim care centre. Only 47.6% of the patients rated the timeliness of the discharge process as very good when they started the study. A preliminary review of the discharged process revealed that much of the work was being deferred until the day of discharge. Based on their findings, the team revised the discharge process of the patient, loading more actions earlier in patient's stay. These were

1. During the Pre Admission Testing (PAT), surgery patients:

- Learn the anticipated discharge date and time
- Receive pre-printed discharge instructions, including supplies needed at home after discharge and where to purchase them.

2. During Inpatient stay:

- Patients with one of the five top medical diagnoses receive pre- printed discharge instructions.
- Anticipated discharge date and time is communicated to physician, staff, patient, and patient's family.
- Nursing ensures education, hygiene addressed before discharge day, the bath being offered to the patient by the evening shift nurse the day prior patients were still assisted with minor hygiene care the day of discharge.
- Patient pre-purchase supplies for use at home.

3. On the day of discharge:

- Night shift nurse notes any last day education needs and in protected status completes the process and assure the medication re-conciliation and arrange physician follow up.
- Attending physician confirms medication reconciliation.

4. If the patient is discharged sooner than expected:

- The chart is flagged by the attending physician.

A control plan was put in place to ensure that these improvements would continue in future. Control charts were used to monitor ongoing performance of the key variables.

Using the Lean Six Sigma methodology, implementation of their findings greatly reduced the cycle time required to discharge the patient from a baseline average of 202 minutes to 115 minutes-while improving patient satisfaction from a baseline of 47.6% to

76%. Finally the team was able to reach the target of \$29.67 for the cost of not chargeable items per discharge, resulting in substantial saving to the hospital.

1.8. C. Rationale

Effective healthcare and timely discharge are most important parameters in ensuring the patient satisfaction. Lengthy, ineffective discharge process is a common concern for the hospitals. It not only causes patient and their relative's dissatisfaction due to long waiting hours for discharge but also creates negative image of the hospital.

This study will help the hospital to access the existing delay in discharge process. From the administrative point of view, the discharge process plays an important role in a hospital. The effective planning and use of resources will play an important role in timely discharge of patient and creates a positive image of the hospital itself. Planning for discharge with clear dates and time reduces –

- a. Patient's length of stay
- b. Emergency readmission
- c. Pressure on hospitals beds
- d. Saves the manpower and time

1.8.D.Aim:

To study discharge process of inpatients.

1.8.E.Objectives:

- To find out the major causes leading to delay in Discharge process.
- To find out the percentage contribution of various causes leading to delay in discharge.

1.8.F.Research Methodology

Study area of this project was inpatient discharge process. Study included all inpatient discharges of month of may. Study population was inpatients and sample size taken was 10% of all total discharges that took place in month of may 2013 i.e. 120 (10% of 1125 discharges). Sample technique used was systematic random sampling (non-probability sampling). The study was conducted to know steps of the discharge process and observe the actual time consumed in the whole process. The turnaround time of discharge

process was calculated and if there was any delay the reasons behind this was found.

In discussion all possible cases of patient discharge were included e.g.

- ❖ Discharge in case of LAMA
- ❖ Discharge in form of death case.
- ❖ Transferring/shifting patient from one ward to other or from one unit to other.
- ❖ Referring the hospital from PARAS
- ❖ Discharge of patient from wards to interim care.
- ❖ Discharge process of MLC

1.8.G.Data Analysis and interpretation:

After data analysis it was found that only 32% of TPA patients and 54% of cash patients were discharged within the hospital's standard discharge time i.e. 2 hrs to 2hrs 30 min for cash patients and 4hrs to 4hrs 30 min for TPA patients.

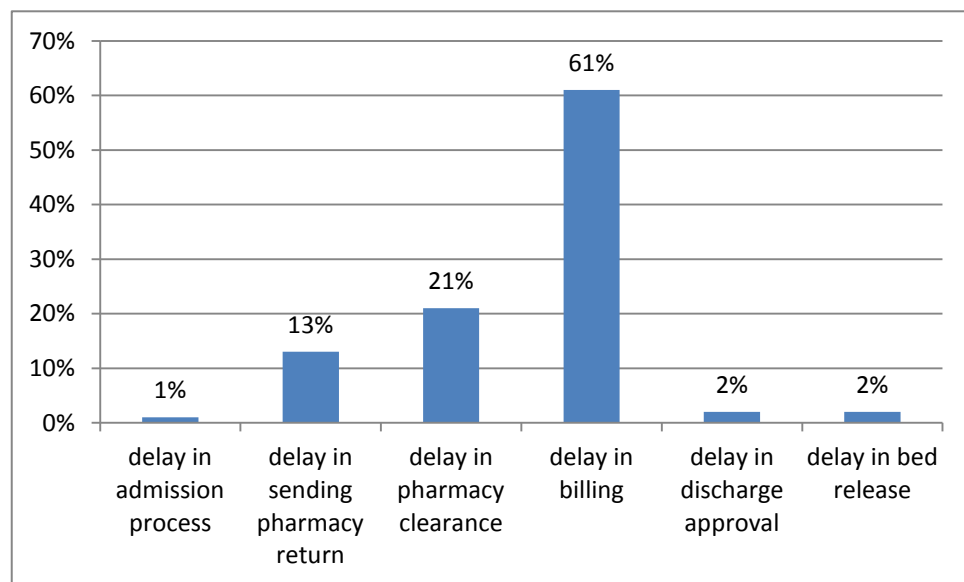


Figure1.2 shows percentage distribution of the major causes of delay in the discharge process of TPA patients.

Among delayed discharges, a little less than two-third (61 percent) of the discharges were delayed mainly because of delay in the billing process. A little less than one-fourth

(21 percent) of discharges were delayed because of delay in pharmacy clearance. Delay in sending the pharmacy return from the nursing counter contributed to delay in few percent (13 percent) cases. Other causes of delay were delay in start of admission process, discharge approval at nursing counter and delay in bed release by the patient, contribution of these causes to delay in discharge was very less.

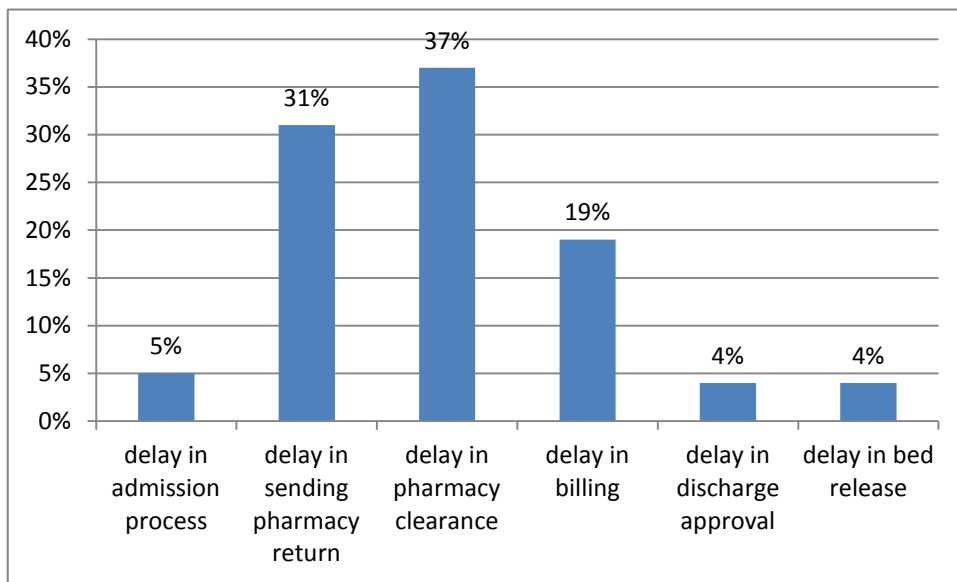


Figure 1.3 shows the contribution of various causes in delay of the discharge process of Cash patients.

Among the delayed discharges, delay in pharmacy clearance was the major reason for delay in discharge process in a little more than one third (37 percent) of the cases. Delay in sending the pharmacy return from the nursing counter was the major cause of delay in a little less (31 percent) of the cases. Delay in billing was the major cause of delay in about one-fifth (19 percent) of the cases. Contribution of other factors such as delay in admission process, delay in discharge approval and delay in bed release was very less.

1.8.H. SUGGESTIONS:

DELAY IN BILLING PROCESS

All bills can be audited and updated every night to ensure minimum time is taken on the day of discharge. Chargeable items which are being billed by billing department can be incorporated in HMS by Doctor /Nurse himself. Billing of the long term cash patients can be done on regular basis to avoid piling up on the last day. Also, patient's attendants can be updated on regular basis about the probable bill amount, so that they can arrange cash accordingly.

FOR DISCHARGE SUMMARY

The writing of discharge summary can be started from the day the patient is admitted and should be updated on a daily basis and on the day of discharge, only minor additional information can be added which will reduce the burden on duty doctors on the day of discharge.

PHARMACY RETURN

As Doctors inform the nurse prior to day of discharge, the probable day of discharge, nurse can prepare what all (like reports, pharmacy return, etc) is required at the time of discharge well in advance. Return should send on individual basis, it should not compile up as it will increase Turnaround time.

LABORATORY AND RADIOLOGY REPORTS

Reports can be made available a day before discharge especially if it is planned discharge. Laboratory results may impact a physician's decision to discharge a patient; therefore, it is crucial that laboratory results are available to physicians in the early morning hours.

DISCHARGE SUMMARY

As there is only one transcriptionist on each floor and most of the discharges are carried out at same time (10am) that increases burden on them to complete it. Speed of MT is 50 words/min, so he takes approx 20 min to finalize one file as one discharge summary consists of 500-600 words. On an average there are 30 discharges on a floor, to write 30 summaries he requires 10 hrs but in one shift he works for 6-7 hrs that is why files goes pending and pile up gradually. So, there is requirement of more manpower in this area.

AN ANALYSIS

OF

NON-COMPLAINE AREAS OF INPATIENT MEDICAL RECORDS

1.9.A Overview of the department:

Medical Record of the patient stores the knowledge concerning the patient and his care. It contains sufficient data written in sequence of occurrence of events to justify the diagnosis, treatment and outcome.

Importance

- **Patients:** patients can retrieve their data for legal purposes, etc
- **Doctors:** for tackling any legal issue, doctors can retrieve the patient's record and can justify their treatment.
- **Hospital**
- **For research work:** to statistically analyze which type of patients are utilizing hospital services more, to calculate hospital indicators, to analyze which services are being utilized less, to study seasonal variation in pattern of diseases, for daily, monthly and yearly census, etc
- **National & International agencies:** MRD is like a connecting link between private hospital and government agencies, for example: hospitals have to send records of communicable diseases, deaths and births to government for registration purposes (form is filled and receiving is taken from govt. office)

Flow Of Medical Record:-

Flow of medical record of patient starts from admission office itself, then to wards and is ultimately assembled, analyzed and stored in medical records department.

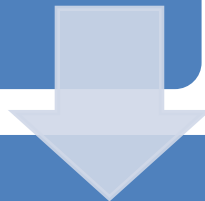
when patient is discharged,
nurse attaches MRD checklist
to the patient's file



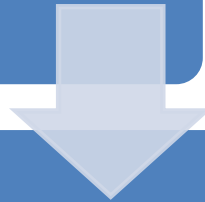
then she make sure that all
necessary documents are attached
in serial order in patient's file to be
sent to MRD dept.



then she sends the file to MRD dept
through GDA, who is sent by MRD
dept



MRD dept also sends a list of names
and IP numbers of patients who are
discharged, nurse has to sign
against the names of patients,
whose files she is sending to MRD.



then the manager himself checks
the file, if their is any query he can
call the nurse or consultant doctor.

- Then ICD coding of disease is done, which is written on the file of the patient and also fed into HMS in patient record.
- The files are arranged into the racks according to IP number of the patients.
- There are three MRD rooms on second floor, one at first basement (-1) and two at second basement (-2).
- Only 1-2 year old files are kept in medical records department at '-2'.
- Also, soft copy record of each patient file is being maintained since 2006 (scan copy). Which will help in case, the original is lost, damaged or destroyed.

Important Norms:

- Normal medical records (non-MLC) are maintained for five years.
- MLC are maintained lifelong or till hospital exists.
- MLC files are kept locked and key lies with manager.
- Death records are also kept life long
- In case of birth, data is to be registered with govt. registration system within 21 days.
- Public notice is given in newspaper 2-3 times before destroying the records. After that only, old records can be destroyed with the help of shredder.
- Permission from Zonal Director, Managing Director and Deputy Medical Superintendent is mandatory before destroying old records.
- Patient's records are kept highly confidential on one except the patient, can access it. If patient expires, only his/her blood relations can access it.
- In case patient wants to retrieve his/her medical record, he/she has to submit ID proof along with signatures. (Hospital doesn't identify with the patient but his/her ID).
- In case patient can't come to retrieve his/her records (bed bound patients), he/she has to send authority letter and counter signed ID proof with his relative, in that case only, records will be issued to the relative.
- In case, patient is dead, only blood relations can retrieve the records person (blood relation) has to submit ID proof. If he also can't come, he has to send authority letter and counter signed ID proof along with relative.
- Birth, death and brought dead cases are registered with the government (form is filled + online registered) then receiving is taken from govt. office as proof.
- In case of any legal issue, if court keeps the original documents then hospital should always keep the copy and also receiving is taken from the judge as a proof that originals are with the court

Manpower:

- Manager-1
- Senior technician -1
- Junior technician-1
- Ward boy-1

Components Of Record:

When the patient file is received by the MRD dept, it is checked broadly for following documents:

- General record
- Consent letters
- Investigations
- Treatment record

Also, that file carries proper authentication by the treating physician, which comprises of:

- Signature
- Name
- Designation

1.9.B General objective of the study:

- To verify the completion of submitted MRD files.

Specific objective:

- To find out the percentage of different non compliance areas in MRD files, if any.

1.9.C Methodology

- It is a quantitative type of study, in which medical record files of month of May'13 are observed for their completion and the incomplete components, if any. A sample size of 120 files (10% of total 1125 is taken) by systematic random sampling.

1.9.D Data Analysis And Findings

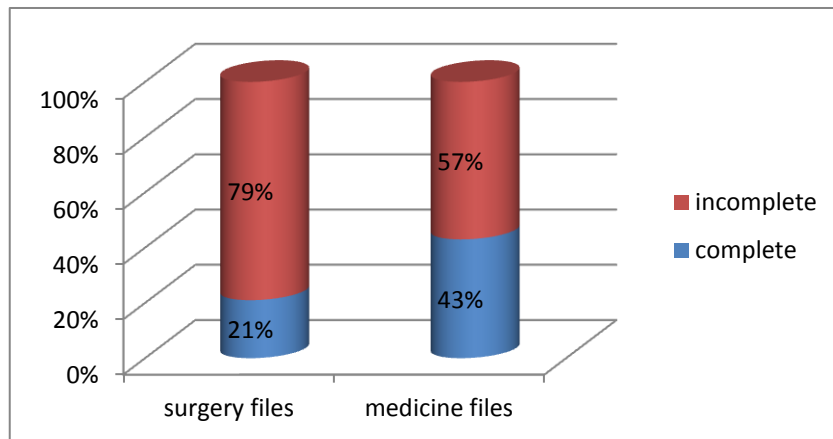


Figure 1.4 Percentage distribution of complete and incomplete surgical and medical files

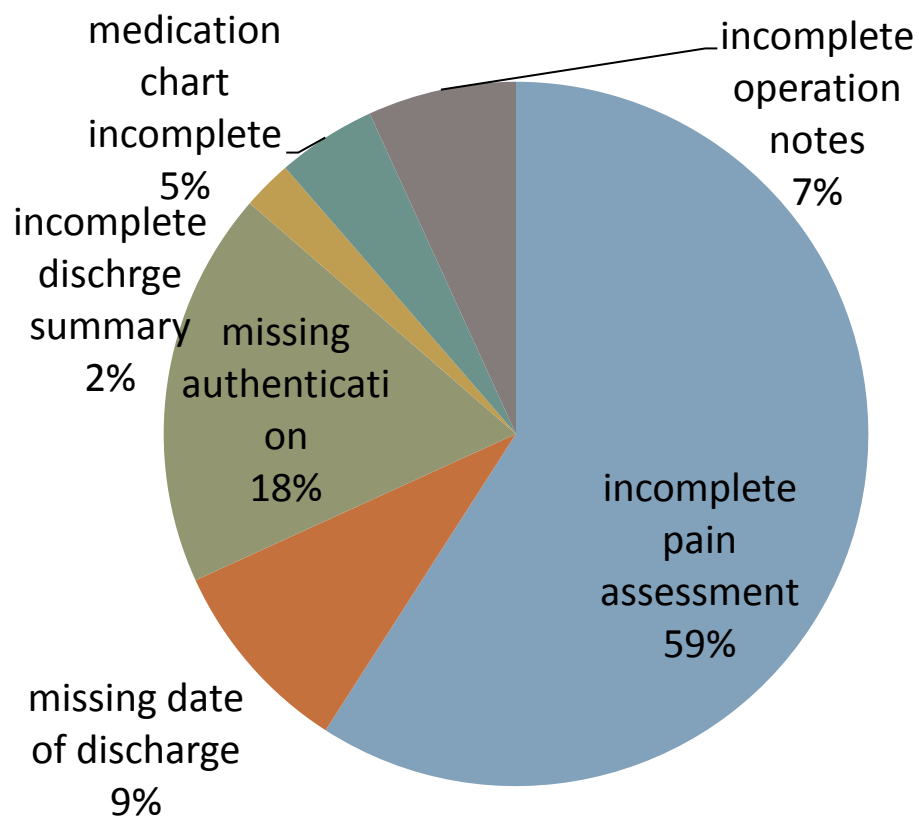


Figure1.5 Percentage distribution of contribution of various factors in non-compliance of inpatient medical records completion of surgery patients

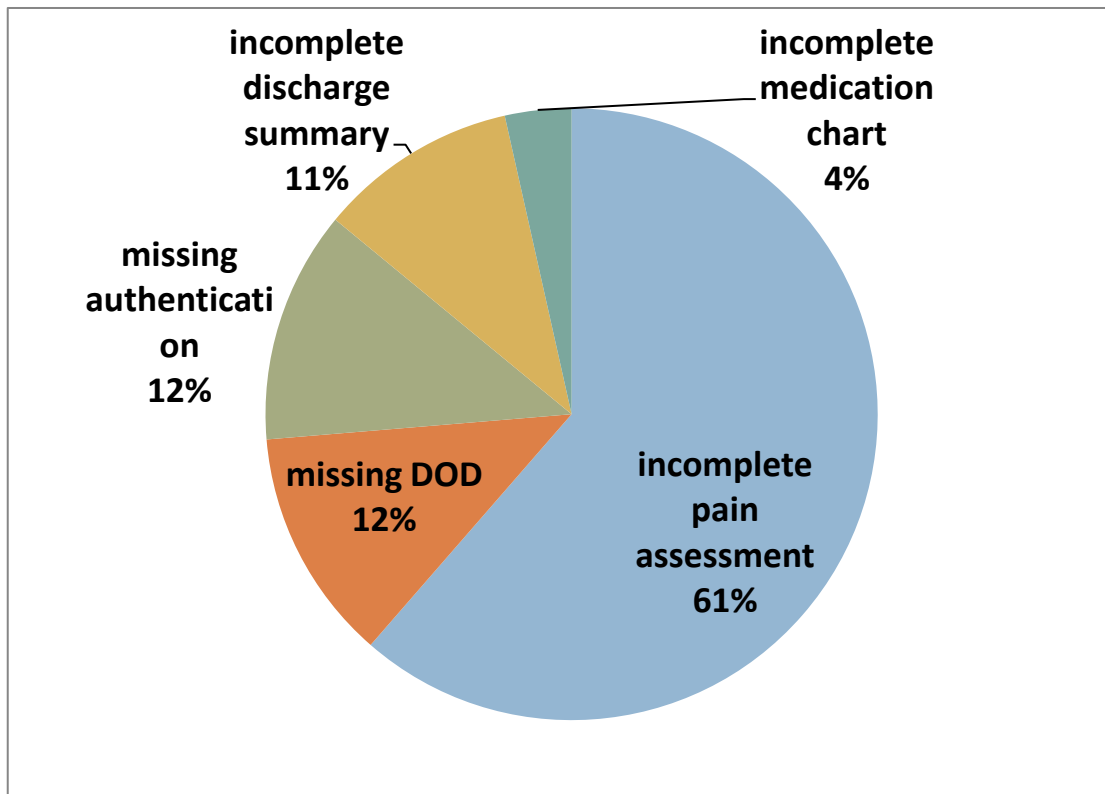


Figure1.6 Percentage contribution of various factors in non-compliance of inpatient medical records completion of medicine patients

Pain Assessment

Pain assessment form is part of hospital protocol. It gives bird's eye view of patient's recovery. It helps to assess patient's satisfaction; a patient leaving the hospital 'pain-free' is more satisfied. It helps to compare the potency of various analgesics.

Date of Discharge:

It tells for how long patient stayed in the hospital, how long the treatment was. So, the importance of date of discharge from medico legal point of view can't be ignored.

Authentication:

Authentication is one of the most important parameter from medico legal point of view. It consists of signatures, designation, date and time. It depicts that physician has verified that particular document. Also date and time are important as physician is not liable to any change done to document after that time.

Discharge Summary:

It tells us about the course of treatment the patient had undergone. It helps during the follow-up of the patient and during reference of the patient.

Medication Chart:

It carries the date and time at which medications are given to the patient. This helps to keep track of the medication regime.

Operation Notes:

Accurate documentation of surgical operation notes is crucial as it facilitates the post-operative management of the patients. It also serves as an important medico-legal document for any discrepancies or disputes.

1.9.E Suggestions

Team leader and nurse can be given the responsibility to verify if pain assessment form is complete before the file is sent to MRD department. AMS, operations executives and quality executives can supervise this process. Medical transcriptionist can be given the responsibility to make sure that date of discharge is present on every discharge summary. Treating physician can also check the date of discharge before signing the discharge summary. Before sending the file to MRD, team leader can make sure that MT has put date of discharge on every discharge summary. For designation, doctors can carry stamp of their designation. Nurse can be given the responsibility to make sure that discharge summary is complete in the files that are sent to MRD department. Operations executive can supervise this process. It should be filled by the RMO himself/herself; also, he/she should avoid writing CST (continue same treatment). Before sending the patient file, head nurse at OT can check for the completion of the Operation notes of the patient. Thereby adding these responsibilities into job description of the employees can motivate them to check for the compliance in MRD files.

MRD Audit Tool:

It is a software programme in which the checklist of patient documents is filled along with patient details. At the end of the month, the software calculates that which all parameters of MRD files were frequently incomplete and also it computes which doctor's patient files are most frequently incomplete. Thus it helps in keeping the track of non-compliance areas.

**COMPARATIVE ANALYSIS OF VARIOUS METHODS OF DIETARY
COSTING**

1.10.A Introduction To The Food And Beverage Department

Food and beverage department of Paras hospital is outsourced.

- **Location** : Basement (-1)
- **Accessibility** : Lifts and Staircase
- **Layout** : Cooking area is divided into these sections
 - a. Cutting and chopping area
 - b. Cooking area
 - c. Dry-storage area
 - d. Special diet area (RT feed)
 - e. Washing area
 - f. Changing area and
 - g. Gas storage area.

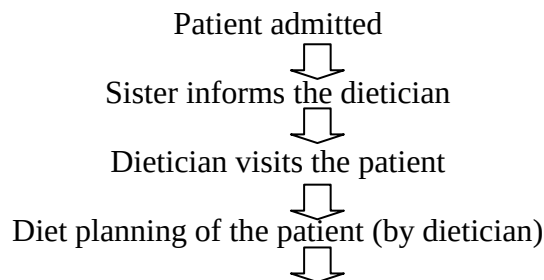
- **Menu** : 8 cyclic menus

Services offered	Type	Timings
1 st	Early morning tea	6 :30am
2 nd	Breakfast	8am-9am
3 rd	Mid morning soup	11:00am-11:30am
4 th	Lunch	12:30pm-1:30pm
5 th	Evening tea	4:00pm-4:30pm
6 th	Dinner	7:30pm-8:30 pm
7 th	Bed time milk	9:00 pm

Mid morning meal and evening soup (these two extra meals are served only for patients on liquid diet and RT feed).

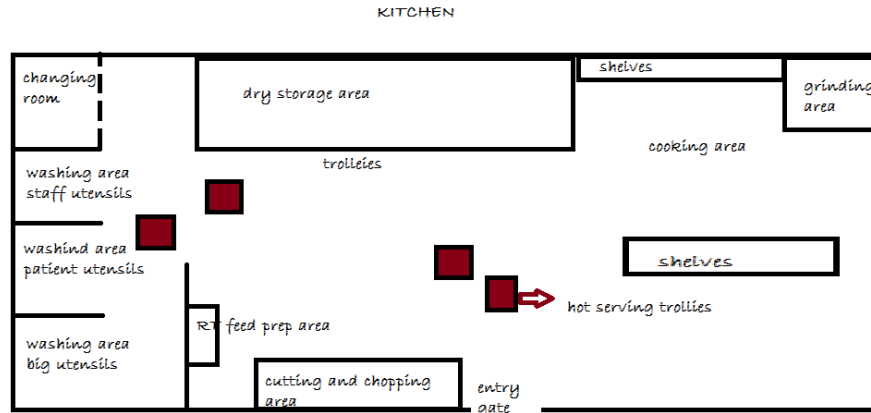
- **Manpower** : 52
 - a. Head chef-1
 - b. Cooks-4
 - c. Helpers-6
 - d. Service staff-27
 - e. Utility staff-12
 - f. Supervisors-2(Staffs works in 3 shifts of 12 hours)

Process of food delivery to the patient



Diet summary given to the kitchen
↓
Diet card of patients made
↓
Cooking done by chef according to the diet summary & food is dispatched

ROUGH SKETCH OF F&B



1.10.B Objective of the study

This project was taken up due management's interest to know if any difference exists in costing for patients' diets by different methods. If yes, then by how much? This study is done taking into account the data of month of MARCH, 2013.

METHODS:

- According to mid night census.
- According to the number of meals.
- According to number of days spent in hospital.

1.10.C According To Mid-night Census

The census is always taken in a hospital at the same time each day, usually midnight. The census provides the number of inpatients at census taking time. The daily census is the number of patients present at census taking time, plus any patients who were admitted after the previous census-taking time and discharged before the next census-taking time. It is calculated by adding the new admissions into the census of previous day and subtracting the number of discharges from it. Also, this information can be

accessed from hospital's HIS.

The mid night census for the month of march was 3717, so according to it the cost was calculated, taking into account the patients of general ward (as they are served five meals only) and patients on special diets (e.g. soft diet, low sodium, diabetic, etc) and vendor is paid lesser amount for these patients. So the cost to hospital came out to be 929184 rupees.

Mid night census for month of march	3717
Cost per day per patient	267
NPO patient days for month of March	25
General ward patient days for month of march	830
Total cost	929184

Since we added Rs 267 for general ward patients (830 in month of may) too, but as they pay 36 rupees less, so we will subtract that amount from total, also we have included charges for NPO (125 in month of march) in this, so we will also subtract that from total.

This method for dietary costing

- Is easy to conduct.
- But **excludes day care patients.** (88 patients in March) so it will need separate payment method for day care patients
- Also excludes those patients in ICU and wards who do not spend night in the hospital. (54 patients in March)

1.10.D According To Number Of Meals

MEAL	NUMBER	COST PER SERVE	TOTAL
BED TEA	2811	23	64653
BREAKFAST	3409	47	160223
SOUP	1684	10	16840
LUNCH	3415	74	252710
EVENING TEA	3004	23	69092
DINNER	3739	74	276686
POST DINNER	3085	16	49360

GRAND TOTAL	889564
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- More favorable to organization.
- Most cost efficient among other methods, as vendor will be paid only for the meals served.

1.10.E According To Number Of Days Spent In Hospital

It is the present method that hospital is following. According to this method for patient's one day stay, vendor is paid rupees 267 and if patient stays for less than six hours beyond this, vendor is paid half a day charges and if more than six hours, it will be counted as one more day.

Total number of patient days	3820.5
Price per patient day	267
Number of NPO days	125
Number of general ward days	830
Total cost by this method	956818.5

This method of dietary costing

- Is easily computable.
- Major drawback is that if the patient stays for more than six hours, vendor is paid

the price of full day even if the patient does not consume all the meals.

- And if the patient stays for less than six hours, vendor is paid half day price but timings of the servings are such that in six hours half the number of meals in a day can't be served.

Graphical Comparison Of Costing By Different Methods

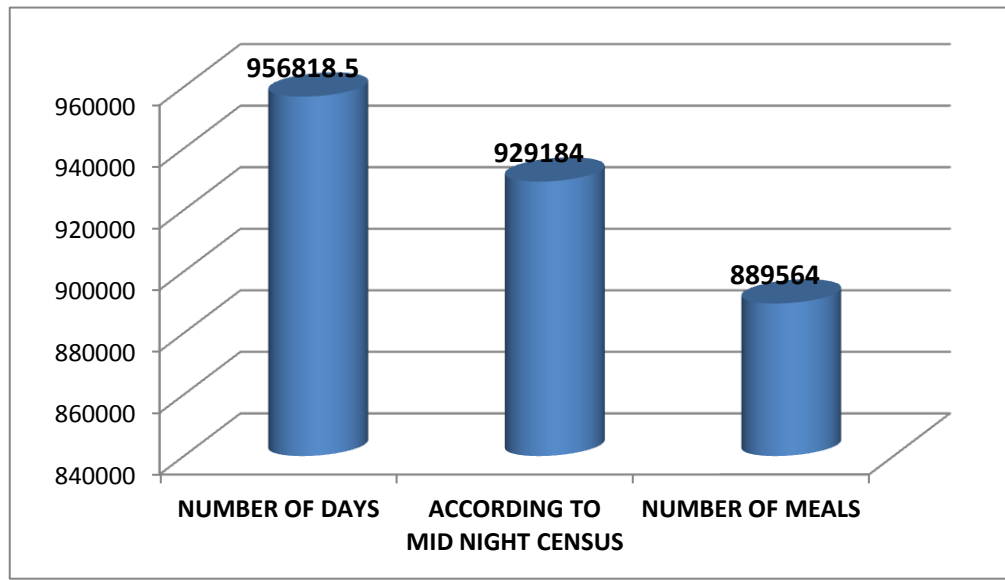


Figure 1.7 shows the cost to hospital of patients' diets by different methods i.e. number of days, mid night census and number of meals.

1.10.F Conclusion

Taking into account this data, it can be concluded that paying the vendor according to the number of meals served will be more cost effective for the hospital. Also, the account of number of diets can be easily taken from the diet summaries made by dieticians on daily basis. Also, a record of total number of all the diets can be made on per day basis by the floor dieticians, which has to counter signed by the kitchen supervisor. Record of the total diets can be retrieved from the hospital HIS as well.

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