Summer Training at
Kokilaben Dhirubhai Ambani Hospital &Medical Research Institute, Mumbai
(April 3 to June 2, 2017)

Turn Around Time of Discharge of Patient

By
Pavitra Seth

Under the guidance of
Dr. Neetu Purohit

MBA Hospital & Health Management
2016-2018

Institute of Health Management Research
The IIHMR University, Jaipur
2017

INSTITUTE OF HEALTH
MANAGEMENT RESEARCH
(WHO Collaborating Centre for District Health System Based on Primary Health Care)

IIHMR UNIVERSITY

CERTIFICATE

This is to certify that **Dr.Pavitra Seth** has undergone summer training in **Kokilaben Dhirubhai Ambani Hospital, Mumbai** from **3rd April to 2nd June, 2017**.

The candidate herself completed the project assign to her during summer training. Her approach to the project was sincere and proactive. This summer training is in partial fulfillment of the course requirement recommended for the award of MBA in Hospital and Health Management.

I wish her success in all her future endeavors.

Col. (Dr.) Ashok Kaushik
Dean (Academic & Student Affair)
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Kokilaben Dhirubhai Ambani
hospital & medical research institute

Every Life Matters

02nd June 2017

To whomsoever it may concern

This is to certify Ms. Pavitra Seth from IIHMR Jaipur has successfully completed an internship with the clinical administration department at Kokilaben Dhirubhai Ambani Hospital from 01/04/2017 to 02/06/2017.

During her tenure, she has worked on the following projects:

- "Improving Turn Around Time of the Discharge Process using Six Sigma Principles"
- "Study of Supply Chain Management in Operation Theatre"

Her performance was satisfactory and we wish her success in her future endeavors.

Dr Ram Narain
Executive Director

for

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ACKNOWLEDGEMENT:

With immense pleasure I express my heart full gratitude to the director of IIHMR Jaipur, Dr. Vivek Bhandari, and Dean, and my mentor Dr.Neetu Purohit for having given me this opportunity to undergo training.

I am thankful to all the professionals at Kokilaben Dhirubhai Ambani Hospital (KDAH) for sharing generously their knowledge and giving me opportunity to do summer training. I owe a great debt to chief executive officer (KDAH) for providing me an opportunity to work as a trainee in their organization. I would like to thanks Dr. Ram Narain(Executive Director) ,Dr. Milind Khadke General Manager(Clinical Administration) and Dr.Nilesh M Gumardar Executive (Administration) our mentor for the summer training in KDAH, without their help it would not have been possible for me to understand the hospital to the extent as I have now. I am highly grateful to all the staff of Inpatient care for their cooperation which enabled me to complete my special assignment in the department.

TABLE OF CONTENTS

Acronyms/Abbreviations:

A&E- Accident and Emergency

DAMA-Discharge Against Medical Advice

HCA-Health Care Assistant

CMD-Chief Medical Director

COO-Chief Operating Officer

CGHS-Central Government Health Scheme

CSSD-Central Sterile and Supply Department

CT-Computerized Tomography

ECG-Electro Cardiogram

TMT-Trade Mill Test

EEG-Electro Encephalography

EMG-Electro Myography

HOD-Head Of Department

HRD-Human Resources Department

ICU-Intensive Care Unit

SICU-Surgical Intensive Care Unit

MICU-Medical Intensive Care Unit

HDU-High Dependency Unit

NICU-Neonatal Intensive Care Unit

IPD- In-Patient Department

KDAH-Kokilaben Dhiruben Ambani Hospital

MRD-Medical Records Department

About Summer Training:

The Master in hospital and health management (MBAHM) Program of Institute of Health Management Research(IIHMR) aims at preparing professionally trained managers of health care organization and hospitals to meet the increasing need for managerial skill. It involves a eight week summer placement for the first year students to provide them with a firsthand experience of the hospital system or environment. As a part of the program I had privilege to undergo my practical training at Kokilaben Dhirubhai Ambani Hospital, Mumbai to get a firsthand Knowledge and Experience about the functioning of the hospital. I worked all through under the Clinical administration there from 1st April 2016 to 31st May 2016.The main aim of the summer training was to get exposed to operation of all the hospital in general, and an in –depth insight of the Intensive Care unit & Admission Department in the hospital in particular.

Objective:

The summer training program had the following Objectives:

- To have a basic orientation of the hospital set up.
- To study the functioning of the hospital as a system and its departments as subsystems of the hospital.
- To observe the entire department in terms of their location, work plan and Staffing pattern.
- To Study about staffing pattern and job responsibility of staff.
- Doing a project which is helpful to me in understanding hospital working in a better way and to the organization.

PROFILE OF KOKILABEN DHIRUBHAI AMBANI HOSPITAL

The Institution Kokilaben Dhirubhai Ambani Hospital and Medical Research is India's newest most advanced tertiary care facility. As the flagship social initiative of Anil Dhirubhai Ambani group, it is designed to raise India's global standing as a health care hub, with emphasis on excellence in clinical services, diagnostic facilities and research.

A vision to strengthen healthcare in the communities we serve and empower patients to make patients to make informed choices was at the genesis of Kokilaben Dhirubhai Ambani Hospital and Medical Research Institute.

Inaugurated in January 2009, the hospital is significant CSR initiative from Reliance Anil Dhirubhai Ambani group. It is designed to raise India global standing as a healthcare hub, with emphasis on excellence in clinical services, diagnostic facilities and research activities.

It is the only hospital in Mumbai to function with a FULL TIME SPECIALIST SYSYTEM that ensures the availability and assess to the best medical talent around-the-clock. The 750-bed hospital has 103 full time doctors, 520 nurses and about 200 paramedical and growing.

It represents the confluence of top-notch talent, cutting edge technology state of art infrastructure and most important, commitment. KDAH offers doctor's cutting-edge diagnostic and surgical solutions as well as the same in IT systems. In many cases, they represent the first of their kind in the region.

KDAH is fully geared in terms of talent, technology structure and spirit-to-reshape perceptions regarding hospitals and redefine the concept of caring. Indeed, this globally benchmarked institution marks the beginning of a new era in Indian healthcare.

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VISION

We aim to be a global healthcare institution that combines the best in medical treatment with strong ethical principles and a culture of care and compassion.

VALUES

Integrity: To deal with all stakeholders –patients, partners, employees, vendors and the community – in a spirit of fairness and integrity.

Transparency: To respect the patient's right to know at every touch point by providing information that is clear, concise relevant and easy to understand.

Maximum Care: To re-evaluate every hospital system, process and procedure to ensure the patients and their loved ones receive maximum care and comfort.

Self – improvement: To instill a process of learning and self – improvement at every level through continuous training, focused research and peer review.

Patient Dignity: To safeguard the dignity of patients by protecting their individuality and privacy at all times.

HOSPITAL INFRASTRUCTURE

1.Lower Basement

- Biomedical Engineering
- CSSD
- Nuclear medicine
- PET CT
- Radiation Oncology
- SRS

2.Upper Basement

- Car Parking
- Central Security Office
- Mortuary.

3.Ground Floor

- Main Reception
- Admission counter

- Discharge and billing
- Pharmacy & Medical mall
- Gift Shop
- Prayer hall
- Business Centre
- Fine dining
- Food court
- ATM
- Central report collection centre
- Beauty Salon
- Accident and Emergency.

4.Mezzanine Floor

- Administration
- Library
- Staff dining

5.First Floor

- Clinical administration
- Radiology & Imaging (X-Ray, MRI, ultrasound ,CT scan)
- Health Checkup program
- Sample Collection
- Centre for cardiac Sciences
- Centre for bone and joint
- Centre for pulmonary and lung medicine
- Multi-Specialty OPD

6.Second Floor

- Center for children
- Center for brain and nervous centre
- Dental clinic
- Cancer center
- Ophthalmology Clinic
- ENT Clinic
- Gastroenterology Clinic
- Dialysis Centre

- Blood bank
- Urology Clinic
- Nephrology Clinic

7.Third Floor

- OT complex 1 (8 theatres)
- Catheterization lab
- ICU (Neuro and Surgical)
- Interventional Radiology

8.Fourth Floor

9. Fifth Floor

- Ambulatory Surgery
- Day Surgery
- ICU(Cardiac)
- OT complex 2 (7 theatre)
- Refuge Area

10. Sixth Floor

- Rehabilitation Centre
- Convention and Exhibition Centre

11. Seventh Floor

- IVF Centre
- Cosmetology and aesthetic Surgery
- Laboratory medicine and pathology
- Nursing College
- Tissue and bone bank

12. Eighth Floor

- Birthing Complex (labor and delivery)
- ICU (Pediatric and Neonatal)
- Birthing suites
- OT (Obstetric)
- Wards

13. Ninth Floor

- Inpatients (Pediatric)

14. Tenth Floor

- High Dependency Unit
- ICU (Medical)
- Refuge area

15. Eleventh Floor

- General ward
- Nursing College

15. twelfth To Sixteenth Floor

- Inpatient.

DEPARTMENTS IN THEHOSPITAL

The following departments function in the hospital:

Clinical Services	**Clinical support services**	**Clinical Administrative services**	**Administrative Services**
Accident & Emergency	Laboratory Medicine	Ambulance Services	Human resources
OPD	Imaging	Nursing department	Materials

Anesthesia	CSSD	Food &Beverages	Marketing
Critical Care	Biomedical Waste	Security	Finance
OT	Housekeeping	Mortuary	Engineering
IPD	Pharmacy	Laundry	IT

CLINICAL SERVICES

ACCIDENT & EMERGENCY

An Emergency Department (ED) is also known as Accident & Emergency (A & E), Emergency Room (ER), Emergency Ward (EW), 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.

Layout

- 11 bedded (6+3 triage + 2 isolation)
- Each bed is separated with curtains to maintain patient privacy and is equipped with the following:

✓ Oxygen supply
✓ Suction pump
✓ Syringe pump
✓ Cardiac monitor

Minor Operation Theatre

- Machines in minor OT are as follows: -

✓ Anesthesia machine
✓ ETCO2 machine
✓ Cautery machine
✓ OT table

- Procedure done in minor OT

- ✓ Lumbar puncture
- ✓ Biopsy
- ✓ Bone marrow aspiration
- ✓ Suturing

This department has got its own billing and discharge counter.

Staffs: -

HOD

6 HCA (2/shift)

Equipment

- Defibrillator-2
- Portable ECG-2
- Nebulisation machine -2
- Portable sonography machine -1
- Trolleys:
  - ✓ Procedure trolley
  - ✓ Induction trolley
  - ✓ Adult crash trolley

- ✓ Dressing trolley

Ambulance

There are 2 types of ambulance:

a) Non-cardiac ambulance
b) Cardiac ambulance

Equipment in the ambulance are as follows: -

- Ambulance set
- Portable ventilator (cardiac ambulance)
- Portable oxygen unit
- Portable suction unit
- First aid kit
- Traction splint
- Auxiliary stretcher
- Transfer sheet
- Airways (nasal, oropharyngeal)
- Obstetrical kit
- Sphygmomanometer
- Stethoscope
- Fire extinguisher
- Burn kit
- Others

    - ✓ Sterile and non-sterile gloves
    - ✓ Face mask
    - ✓ Blankets
    - ✓ Towels
    - ✓ Bed pan
    - ✓ Tongue depressors
    - ✓ Cold packs instant chemical type

- ➢ 1 HCA in non-cardiac ambulance
- ➢ 1 HCA + 1 nurse + 1 cardiac consultant in cardiac ambulance

OUTPATIENT DEPARTMENT

Kokilaben Dhirubhai Ambani Hospital has 140 independent consultant clinics with a capacity to handle over 6000 outpatient consultation every day. These clinics are organized as functional clusters representing a specialty, with each cluster containing its own examination room, phlebotomy room, and in instances, rooms for specialized medical equipment unique to the cluster. A day care dialysis unit, an endoscopy theatre complex, radiology suites and a blood bank support outpatient service are co-located on the same floors as the self-contained outpatient area. The hospital outpatient services offer specialist consultation services across 42 different specialties including six centers of excellence.

The specialists included are Anesthesiologist, Critical Care Medical, accident and emergency, gynecology and obstetrics, imaging, laboratory medicine and pathology including biochemistry, molecular biology, hematology, histopathology, microbiology, clinical pathology, transfusion, medicine, rheumatology, geriatric medicine, surgery including dentistry, ENT, general surgery, ophthalmology, plastic and reconstructive surgery, urology, surgical oncology, cosmetology.

A) Access to OPD services:
   All patients who visit KDAH or free OPD for the first time for consultation/ other services are issued a card which gives each patient a UHID number. This UHID card is attached to the registration form. With the help of this number, medical records of patients can be assessed. Allotment and control of UHID number is the responsibility of the admission staff desk.
B) OPD Appointment:
   Appointments can be fixed over telephone to all from the call center or personally across the reception counter. Fax and email facilities are also available.
   Following services are offered in the OPD.
   - Medical/ surgical consultations
   - Preventive health check-up packages
   - Laboratory investigations
   - Imaging services
   - Cardiology investigations
   - Neurology investigations
   - Pulmonary investigations
   - Pain management
   - AKD
   - Gamma knife
   - Endoscopy

- Bronchoscopy
- Urodynamic study
- Physiotherapy
- CDC
- ENT
- Ophthalmology
- Dental procedures
- Oncology
- Radiation oncology

HEALTH CHECK UP

- The executive checkup department, a part of OPD services, is a wing of this multispecialty hospital dedicates to the diagnostic and preventive side of patient care. It is a place where healthy patient come for prognosis of disease or to know about the preventive and curative aspect of conditions they may already have.
- This system facilitates the patient to get all the required investigations/ consultations done without having to pay for either consultation and/or for each individual item of pathological or imaging investigations. It is the centre point where the potential customers come directly in contact with hospital services. This department can therefore be a point to draw in patients to become in-patients or for them to come even for follow-up OPD consultation.
- The packages in the program have been developed by a team of highly qualified and experienced medical personnel and are designed to offer a complete medical checkup and within their limitations detect any latent health problems. In additions, these packages are offered at special discounted rates that make them truly worthwhile. At the end of the day, candidates leave the hospital with all their reports.
- This department is dependent on various other hospital departments and consultants to ensure a smooth process flow. Therefore, co-ordination is a key factor in smoothly running the department. The departments in co-ordination are, pathology, radiology, following department, medicine, surgery and gynecology.

OPERATION THEATRE:

The aim of department of anaesthesiology and OT facility is to provide the highest quality of care to patients undergoing various types of surgeries. The OT facility is

positioned as a tertiary care centre of excellence providing complete services for various surgical specialties. The department is staffed with hoghly experienced and trained anaesthesiologist, surgeons, technicians, nurses and other support staff. Their services have state of the art technology and equipment with highest level environment and quality controls. For each OT there are two scrub nurses and one circulating nurse. Protocols based on approach for quality pre-operative, intra- operative and post-operative and follow-up care of the patients. The complex is divided into three zones: sterile, semi sterile and non-sterile zones. Complete services to the following surgical specialties are provided.

- Cardiac surgery
- Neuro surgery
- Onco surgery
- Orthopaedic surgery
- General surgery
- Gynaecology and obstetrics surgery
- Paediatric surgery
- GI surgery
- Uro surgery
- Plastic surgery
- Ophthalmic and ENT surgery
- Transplantation surgeries

The OT complex has a pre-and post-operative monitoring room for continuous monitoring of patients. The facility includes 22 OTs, 600 square feet area, pendants in all OTs and surgical control panels.

IN PATIENT DEPARTMENT

The IPD provides the detailed pre-procedure needs their completion and coordination with the diagnostic to arrive at the diagnosis and completion of treatment regimens, comprehensive care in the pre-operative and follow-up care, rehabilitative, and nutritional regimented their scientific amalgamation as per the progressive patient care need. IPD wards are located on floor numbers 9,10,11,12, 13, 14, 15 & 16. The IPD rooms are of the following types: single room, twin sharing, deluxe room and suites. Each floor has three zones, east, west and central and each wing has a separate nursing station. The various types of rooms with their features as follows:

- GENERAL WARDS
  - 5 beds/room
  - Air conditioned
  - Bed heads panels with medical gases
  - Nurse call systems with two-way communication
- SINGLE ROOMS
  - Area of 320 sq. ft.
  - Separate patient zone and attendant zone
  - Nurse call system with two-way communication.
- TWIN SHARING
  - Bed head panels with medical gasses
  - Television sets
  - Couch for each patient relative
  - Nurse call system with two-way communication.
- SUITS
  - Area of 750 sq. ft.
  - Terrace garden
  - Exclusive visitor area and guest rooms
  - Nurse call system with two-way communication.

Nurse bed ratio is 1:5 for general ward, 1:2 for single rooms, 1:3 for twin sharing, 1:1 for suits. The various other rooms are clean utility, dirty utility, janitor room, AHU (air handling unit), sluice room, pharmacy room, I.T. room and service elevator

INTENSIVE CARE UNIT:

THE ICU HAS HIGHLY DEDICATED AND TRAINED MEDICAL, NURSING AND ALLIED STAFF. THERE IS A SYSTEM OF CLOSED ICU IN KDAH. THE SPACE PER BED IS 320SQ FEET IN THE PATIENT CARE AREA

BED CAPACITY IN EACH ICU

ICU	**Bed capacity**
SICU1	11
SICU2	10
PCICU	11
PCICU-HDU	2
PICU	7
TRANSPLANT ICU	7
NICU	8

NICU-HDU	5
MICU	28
MICU	25

Human resource of the ICU

Intensive care doctors

- 1chief intensivist for all ICU
- Junior consultants **(12-hour shift)**
- Clinical registrars (8-hour shift)

I**ntensive care nursing staff**

- 1 director general manager for ICU
- Nurse in charge (8-hour shift)
- Team leader (8-hour shift)
- Senior nurse officers
- Junior nurse officers

Allied staff

- Physiotherapists
- Dieticians
- Biomedical engineers
- Health care assistants

SHIFT TIMINGS:

For doctors

Morning: 8am – 4pm

Afternoon: 2pm – 10pm

Evening: 10pm – 8am

Overlapping hours: 2pm – 4pm

For nurses, HCA and housekeeping staff

Morning: 7am – 3pm

Evening: 3pm – 11pm

Afternoon: 11pm – 7am

Visiting hours: 11am – 1pm

5pm – 7pm

Only 1 relative at a time is allowed

Records and registers

Admission and discharge register

Handling and taking over/team leader sheet

Assignment sheet

Leave book

OT booking register

Critical care flow sheet

Narcotic drug register

EQUIPMENTS:

MONITORING EQUIPMENT	CARDIOVASCULAR THERAPY	RESPIRATORY THERAPY	LABORATORY EQUIPMENT
Bed side and central monitors	CPR Trolley	Ventilators	Blood gas analyser
ECG recorder	Defibrillators	Incubation / tracheotomy trolley	Electrolyte analyser
Pulse oximeter	Infusion pumps and syringes	Nebulisers	
Spiro meter			
ECG monitor			
Temperature monitors			
Blood glucose meter			

Miscellaneous equipment

- Crash cart
- Dressing trolley
- Procedure trolley

Management information system

ICU	LOS (days)
Adult ICU	4
PCICU	6.5
PICU	5.6
NICU	6.4

PAEDIATRIC INTENSIVE CARE UNIT

The PICU looks after all critical paediatric patients. It is located on 8th floor. The ICU is split into 2 zones for outpatients and inpatients. The various other rooms include Ante room, equipment room, clean utility and dirty utility room. The average length of stay of each patient is approximately 1 week.

NEONATAL INTENSIVE CARE UNIT

The NICU is 18 bedded and located on 8th floor. The department is divided inton2 zones outpatients and inpatients. There are 2 isolation rooms. The nurse ratio is 1:1.

CENTER FOR REHABILITATION: -

- the center is located on the dedicated floor with 30000 square feet area and exclusive inpatient service, first of its kind.
- The department is located in 7th and 8th floor of hospital.
- It has got its own billing desk.
- It also consists of a day-care center for those patients who need 4-5 sessions in a day.

- **Staff of the department consists of:**

HOD ↓

40 physiotherapists

↓

1 Asst. nurse

↓

3 Nurses

↓

5 HCA

Following therapy services are available: -

1.Neurological Rehabilitation

2.Musculoskeletal Rehabilitation

3.Cardiac Rehabilitation

4.Pulmonary Rehabilitation

5.Paediatric Rehabilitation

6.Cancer Rehabilitation

7.Pain management

8.Women's health

9.Geriatric Rehabilitation

The therapy services offered in the department: -

1.Physical therapy

2.Occupational therapy

3.Electrotherapy

4.Speech and language pathology

5.Exercise physiology

6.Psychology

7.Rehabilitation nursing

8.Orthosis and prosthesis

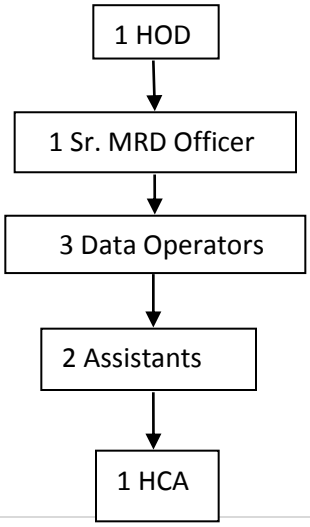
Other facility: -

- ✓ Diagnostic tests
- ✓ Billing and registration
- ✓ Phlebotomy services
- ✓ Ultrasound facilities
- ✓ Andrology and embroyology laboratories
- ✓ Operating room,pre-op and recovery room facilities
- ✓ Counselling and support services

CLINICAL SUPPORT SERVICES

MEDICAL RECORDS DEPARTMENT

- The main functions of the department are:
    1) Storing file for future reference.
    2) Research
- Staff



- Open and closed audit is done of all files before keeping them for storage.
- The arrangement of files is done in following ways:
    - ✓ Year wise and UHID wise
    - ✓ Also on the basis of their type:
        a. Regular files
        b. DAMA files
        c. MLC flies
        d. OT recovery files
        e. Chemotherapy files
        f. Dialysis files
- Apart from files few forms, and records are also store in this department:
    - ✓ Consent forms
    - ✓ OT papers
    - ✓ A&E Papers
- Certificates issued from the department:
    - ✓ Patient fitness certificate
    - ✓ Fit to fly certificate
    - ✓ Leave certificate
- All files are stored in the department for the following time-period:
    - ✓ Report-1.5 year
    - ✓ Death, DAMA and MLC files 20 years
    - ✓ Regular files-5years
- ICD-10 coding is done for storing files:
    - ✓ Red-Death, DAMA, MLC
    - ✓ Black-Oncology
    - ✓ Yellow-Gynecology, & obstetrics, IVF files
    - ✓ Dark blue- general medicine, critical care, Nephrology, Endocrinology, Gastroenterology, Pulmonary medicine, Dermatology, Dental, Psychiatry, rehabilitation, Rheumatology.
    - ✓ Light blue- Pediatrics
    - ✓ Orange- Neurology, CVTS, Cardiology, Orthopedics.
    - ✓ Green- ENT, general surgery, ophthalmology, Urology, Cosmetology, Interventional radiology.
- This department has to notify Bombay Municipal Corporation (BMC) about following things on regular basis:
    - ✓ About Birth & Death report (once in a week)
    - ✓ Notifiable diseases which includes cholera, dengue, plague, yellow-fever, TB, polio, meningococcal meningitis, leptospirosis, viral encephalitis (once in a week).
    - ✓ Maternal mortality (once in a week)

- ✓ MTP & PNDT (once in a month)
- ✓ Retrieval- for easy retrieval of files tracer cards are used when files are given to patients or sent outside the department.

LABORATORY: -

The salient features of the department are as follows-

- CAP (College of American Pathology)accreditation
- Central processing laboratory is spread over 40,000sq.Ft. which follows strict internal quality compliance for all analyzer.
- Excellent laboratory management system which handles both pre-analytical and post-analytical aspects
- Dedicated courier and logistic services
- 24 hrs. sample collection facility
- Stringent quality control monitoring which satisfy the quality assurance elements elaborated by GLP and GCP and readily available documented evidence of quality assurance and quality proficiency schemes
- Constant improvisation and technology innovation using over 150 state of the art equipment.
- Quality control and quality assurance executive that monitors pre-analytical and post-analytical processing of the samples.
- Customized management report (MIS-management information system)
- An active IRB and ethics committee which oversees clinical trials proposed when required.

BLOOD BANK: -

Transfusion medicine is a multi-displinary area concerned use of blood and blood component in the treatment of human disease. The mission of KDAH is to make available appropriate adequate quantity and high quality of safe blood and blood component to "anyone, anytime, anywhere" in medical community. KDAH adheres to quality norms and focus on the donor satisfaction standards and technique and quality control are precisely and meticulously maintained as per norms given in the drugs and cosmetics acts, by the regulatory authority, director drug controller (India), ministry of health and family welfare, Govt. of India, and also internationally recommended methods. The department runs round the clock and blood and its products are supplied as and when requested. Blood donation is accepted from voluntary blood donors and relatives and friends of the patient. Autologous blood donation (blood donation from one's own use) is also accepted. The blood donors are informed and educated about the infection transmitted by transfusion of blood components.All the mandatory screening for the

transfusion transmissible disease like HIV,HBV and HCV is done with the more sensitive and specific CMLIA and ELISA methods.All units are screened for VDRL and malaria parasite.Red cells in an additive solution (RCA) like,SAGM or ADSOL is a product which is used in variety of indication like surgeries,anemia,trauma,child birth etc. asa thumb rule one unit would increase the hemoglobin by 1 gm%.

IMAGING: -

The imaging department consists of radiology services.The investigations performed in these departments includes:

- CT Scan
- MRI
- X-RAY
- Ultrasound
- Mammography

The HIS has a system for appointment scheduling for each of these investigations.The appointments are given by Call Centre.There are 4 X-ray machines,5 ultrasonography machines ,1 mammography machine,1 CT Scan machine,& 2 MRI machine of which one is 3 Tesla located in the radiology department and the other is 1.5 Tesla IMRIS (intraoperative magnetic resonance imaging suit)is a movable machine attached to the ceiling that is located in the OT.It is basically used for MRI scanning during a surgery.They are working on its complete utilization.

CENTRAL STERILE SUPPLY DEPARTME

CSSD is the heart of hospital infection control and the most important unit of clinical support services.CSSD's main functions are cleaning and drying ,assembly, packing,sterilizing,storing and distributing instruments(both multi use and single use devices),as per well delineated protocols and standardized procedures.

INFRASTRUCTURE: -

It is divided into 3 zones

1.Decontamination area

2.Assembly area

3.Sterile storage area

STAFF: -

- 1 manager/department head
- 1 executive
- 1 senior technical officer
- 4 technical offiers
- 6 junior technical officers
- 10 trainees
- 16 health care attendants

MAJOR TECHNOLOGIES: -

- Ultra-sonic cleaner
- Washer disinfectant
- Dryer
- Steam sterilizers
- Plasma sterilizers
- ETO (ethylene oxide gas sterilizer)
- Dry heat sterilizer

RECORD MAINTAINED: -

- Manual issue and receiving OT
- Manual issue and receiving all departments
- Sterilization records

PHARMACY: -

Central pharmacy indents to IP, OP and LB. it is of 2 categories: capital and consumables.

SCOPE OF INVENTORY MANAGEMNET:

- INDENTATION
- RECEIVING
- STORING

- DISTRIBUTION

The staff consists of: -

- 5 managers
- 1 executive
- 8 senior officers
- 24 officers
- 7 junior officers
- 6 trainee assistants
- 1 trainee HCA
- 16 attendants
- 21 HCA

HOUSE KEEPING:

The objective of housekeeping is exceptional standards of cleanliness, sanitation and hygiene of the entire hospital. Housekeeping services are outsourced to ARA MARK services

The staffs include: -

- Housekeeping manager
- Assistant manager
- Housekeeping executives
- Supervisors
- Houseboys & house girls

Function of housekeeping department are: -

- General facility cleaning
  - ✓ Routine cleaning of patient's rooms
  - ✓ Patient's common areas
  - ✓ Washrooms
  - ✓ OT
  - ✓ Laboratory
  - ✓ Consultant's office
  - ✓ Glass windows and doors
  - ✓ Ceiling etc.

- Handling of biomedical waste.
- Pest control-It includes sprayingevery 24 hours for mosquitoes,cockroaches,flies,rats,lizards and termites.
- Garbage disposal-The housekeeping staff collects garbage bins existing inside the hospital premisesand disposes the garbage at the designated area within the

hospital,which is the biomedical waste room.The general waste is sold to the junk dealer and healthcare waste is handed over to government approved vendor "synergy waste management".

- Horticulture-It is responsible for maintainence of house plans & terrace gardens,flower arrangement during hospital functions.

The performance indicators are B.M.W color code compliance,B.M.W collection,pest controlefficiency and sanitization of the hospital premises.

CLINICAL ADMINISTARTION SERVICES

STORES

Material stores functions in order to supply the right material in right quintiles at the right time at the right price. The IP departments put up requests for the required materials by uploading indents in the HIS. The store manager raises a purchase order to be sent at the central procurement stores. The supplies received are inspected on the basis of quantity and expiry in the incoming material inspection area. The items are stored as per the storage norms. Departmental issues are made for non – medical consumable as per requirement. Stock is reviewed periodically for nonmoving items and short expiry items. Stock audits are carried out twice/year. Any variance is reported to the higher management. For inventory control, ABC and VED analysis is carried out. FIFO (first expiry first out) is followed. The staff includes:

- Assistant Manager
- Executive store
- Assistants
- 2 Health care assistants

The key performance indicators are no stock outs, zero errors in maintenance of accounts, zero error is billing processing maintain minimum inventory maximum efficiency, maintaining stores as per the NABH – ISO standards, submission of bills accounts within 4 working days, expired items on the shelves should be zero, minimize emergency purchase, TAT suture and lab kits (19 days), instruments (8 weeks) and other items (2 days)

LINEN AND LAUNDRY

The objective of linen and laundry is the availability of clean uniforms for patients and staff. Soiled linen when collected is kept in the dirty utility room in a hamper trolley. Infected linen is collected and put in a red bag at the source4 of generation. The red bag

is sealed and labeled for infection. At the end of each shift, the dirty utility linen is carried in the hamper trolley to the collection room. At the collection point, it is segregated, counted and sent to the laundry for washing. The performance indicators are laundry pending, turnaround time for laundry cleaning, percentage discarded linen.

BIOMEDICAL ENGINEERING DEPARTMENT

The main objective of the department is to facilitate the usage of latest technologies in the diagnosis, treatment of care of patients. It is also responsible for proper usage and quality performance of these costly equipment and tools inside the hospital

The departments maintains an updated asset register of the hospital equipment, conduct daily rounds to ensure that the equipment is functioning smoothly, responsible for facilitation and identification of equipment requirements, planning technical comparison, ordering installation and deployment units and new projects, conduct regular preventive maintenance servicing for all the equipment at regular intervals, facilitating equipment replacements and condemnation, whenever required, conducting regular training programs for hospital staff, on usage of hospital equipments. The staff consists of HOD, 5 biomedical engineers and 2 biomedical technicians and 4 medical gas technicians.

FOOD AND BEVERAGES

The objectives of food and beverages department are to deliver healthy and nutritious meals coupled with a wonderful with a wonderful experience of hospitality services to all IP, OP and staff. The cafeteria is outsourced to java green. The main functions of the department are as follows:

- Impatient meal management
- Purchase of fruits, vegetables, milk, pulses, whole grain and other dietary consumables
- FIFO is followed

The purchased items are unloaded in the receiving area, where they are inspected and then washed with water and anti-bacterial liquid before bringing it in the kitchen premises. It is followed by storage of perishable and non-perishable items in refrigerator and dry storage area respectively. Diet planning and counseling is done by the dietician according to the patient's condition, food allergy and taste and general preference. The diet summary is handed over to the supervisor in the form of meal sheet cum

ticket. According to this, the food is prepared and laid out on trays. The meals are served in the patient's room and clearance is carried out after 2 hours. Food/meal/diet for a patient admitted in the hospital is decided by the doctor admitting the patient depending on his/her medical condition. On doctor's recommendations, the dieticians plan the meal that is best for the patient 'speedy recovery. The staff includes:

- Regional head of support function
- F&B managers cum chef
- Assistant manager F&B staff

SECURITY

Services rendered by security department are surveillance and patrolling of the infrastructure and material, access control (in restricted areas like IT, MRD, LSS, Mortuary, Pharmacy, Electric control panels), control of movement of traffic in premises, reception and conduct of visitors and attendants, assistance in fire control and emergency plan, vigilance and intelligence, liaison with sensitive areas, carry out verification, hold records, issue passes, and generate reports on security matters, it is equipped with modern equipment like CCTV's metal and explosive detectors, alarms, security, lighting and walkie-talkies, etc. the staff members are:

- HOD
- Senior officer
- Security supervisor
- Sr. security assistant
- Security guards

The performance indicators are TAT, theft percent, code related incidents.

ADMINISTRATIVE SERVICES

ADMISSION AND BILLLING:

The admission and billing staff includes 1 H.O.D and 12 employees. The services offered by the department are registration of a new patient, booking/reservation –bed and O.T, admission, billing, discharge work.

Front office:

The front office is the first point of contact at KDAH. It is manned by duty manager, deputy duty manger and patient care executive and patient care coordinator. There are total 7 front offices in KDAH and there are 2 help desks.

Functions:

- Respond and answer telephone calls from patients and clients (call center).
- Registration of outpatients and executive health checkup patients for various investigations (registration counter).
- Admission, billing and discharge of in patients.
- Direct the patient and their relatives to the outpatient services and the inpatient wards (helpdesk and welcome desk).
- Report receiving and handling over to the patient (dispatch counter).

Third Party Administrator Desk:

TPA Staff includes one executive clinical administrator and 4 customer care officers.

Functions:

- Counseling
- Pre- Authorization
- Cashless admission
- Query Handling
- Final approval
- Maintain privacy and confidentiality

INFORMATION TECHNOLOGY DEPARTMENT

It is implied that there is central database for entire hospital. Services rendered by the IT department are as follows:

- IT support to location users for hardware and software as per SLA (service level agreement).
- Installation of new IT equipment.
- Helping biomedical department in configuring the medical equipment with HIS.
- Installation of appointment scheduling programs.

The IT staffs include:

- Chief information officer
- Manager IT
- Executive IT engineers

The performance indicators are calls resolutions within a time limit, strict data security, zero percent variance, in hardware and software variance, minimal occupational hazard and proper e-waste disposal.

ENGINEERING DEPARTMENT:

Engineering and maintenance department is manned for 24 hours for keeping round the clock vigil on proper functioning of plant engineering equipment coming under the purview of department. This covers maintenance of major supplies to the hospital such as power, water, which form the life line to the hospital's activities. The responsibilities of the department include operation and maintenance of plant equipment installed in the basement of main building and various other areas to support the normal functioning of the hospital and repair work of equipment related to the department's responsibility. The policy of the department is to serve well with safety and it time, continuous improvement, cost saving, optimum utilization of manpower and equipment, optimum utilization of inventory and teamwork.

The major engineering services are:

- Electrical power supply- normal and emergency.
- Air conditioning, ventilation and refrigeration.
- Steam and hot water supply.
- Water stations and cold-water supplies- filtration system.

- Medical gases supply
- Fire detection alarms and fighting system.
- Internal and external plumbing system.
- Civil works- masonry, carpentry, glasswork, upholstery, painting etc.
- PNG and LPG supply
- Safety assessment of facilities.

MARKETING AND SALES:

Marketing and sales department is concerned with business development, branding, promotions and advertisement of KDAH healthcare services. Marketing deals with organizing health checkup camps and awareness talks for corporate or PSUs and RWA, designing all the brochures and signage, pitching referral sales from nearby general practitioners and nursing homes, liaison with TPAs and managing the international patients (medical tourism).

FINANCE:

The scope of services includes the entire hospital cash handling and cash disbursement in the form of salaries and vendor payment for stores, pharmacy and biomedical department. All the cash collected is deposited on daily basis of the bank. The TPA payment is collected through lump sum amount in the form of cheque at the end of the month. The staffs include:

- HOD
- Assistant Manager
- Senior executives
- Junior executives
- 2 cashiers

HUMAN RESOURCE DEPARTMENT:

The functions of HR department at KDA hospital are:

- Hiring
- Physician and nurse recruitment
- Employee orientation
- Personal management

- Benefits and compensation management
- Counseling
- Claims handling
- Training and performance monitoring
- Professional development programs
- State and federal regulations education
- Work place safety and sanitation
- Administration – employee meetings
- Staff morale and retention

Recruitment / selection:

- Identifying the key requirements areas (KRA)
- Drafting job description
- Recruitment through job portals and internal references
- Selection
- Medical examination of the candidate
- Offering letter to the selected ones

QUALITY CONTROL DEPARTMENT

The Functions of the department are:

- To analyze patient feedback forms.
- To analyze different parameters from different departments and compare them.
- Infection control of the hospital.
- Induction and training of hospital staff.
- Accreditations (NABH, JCI).

This department also maintains few quality indicators for hospital:

- Medication Errors
- Return of patient within 72 hours.
- Return of patient to ICU within 48 hours.
- Return of patient to OT within 48 hours.
- Number of Needle Sticks Injuries.
- Number of blood transfusion reaction.
- Number of Adverse Drug reaction.

STAFF: -

This department consists of 1 quality manager who reports directly to the director of hospital.

SUMMER TRAINING –PROJECT REPORT

Turn Around Time of Discharge of Patients

INTRODUCTION:

Discharge includes the medical instructions that the patient will need to recover fully. Discharge process is the point at which the patient leaves the hospital and either return home or is transferred to another facility such as one for rehabilitation or to a nursing home. Discharge planning is a service that considers the patients' needs after the hospital stay, and may include various services such as nursing care, physiotherapy, dietary service, post operation do's and don'ts , post operation follow up instructions information about whom to contact in case of an emergency.

As the final step in hospital experience, the discharge is likely to be well remembered by the patient and relative and even everything also went satisfactorily, a slow frustrating discharge process can result in low patient satisfaction. The discharge process is critical bottleneck for efficient patient flow, slow and unpredictable discharge translates into a reduction in effective bed capacity and admission process delays.

At kokilaben Dhirubhai Ambani hospital, investigation was conducted to determine the Turn Around Time of Discharge Process along with incidence and causes of delayed discharge. Many patients who have met criteria for discharge in the Inpatient department for a longer time than actually required, which not only leads to the waste of resources but also reduce the chances of other needy patient to get admission in ward who requires actual treatment. Therefore, finding the turnaround time of discharge and reasons for delay helps us in cost effective management in Inpatient deparment. As hypothesized by Sister In-charge and floor coordinators that on an average 3 hours is the maximum time required to discharge the patient, after doctor

recommended for discharge and patient physically leave the hospital. Thus on taking this into consideration, we determine the turnaround time of IPD bed and number of patients that are discharged within 4 hours and patients that are discharged after 3 hours along with the reasons for delay.

2. GENERAL PRINCIPLE FOR EFFECTIVE DISCHARGE: -

1. The discharge planning process begins as soon as is practical after the patient is admitted to hospital. All patients should receive a comprehensive assessment of their actual and potential discharge need by relevant members of the multi professional team.
2. All discharge has the potential to become complicated. Time spent talking to patients assessing their needs at the start of the process can uncover potential problems and helps and help to facilitate a smooth planned discharge.
3. A discharge date should be set as early as possible, although it is recognized that ultimately any discharge is dependent on the clinical progress of the patient and may be subject to change.
4. Discharge documentation should be concise, easy to use and most importantly relevant. Staff should be familiarizing themselves with documentation used in the discharge process and ensure they are competent in its completion.
5. Despite pressure to maximize the bed usage, patients should only be discharged when they are medically and psychologically fit to be discharged. Ultimately discharge may result in rapid readmission of patients through the ICU after the recovery for two days on an average, thus vacating bed for the patients in the OT and making it possible for other patients who need a surgery to avail the services of the surgeon.
6. Communication between all departments is very important. Team participating in the planning of a patient's discharge should be aware of all other members involved, including those in external agencies.
7. Patients especially those requiring social care / community nursing input should ideally not be discharged at weekends or late in the day.

2. LITERATURE REVIEW:

To achieve efficiency in a healthcare setting, patient movement must be critically analyzed. Improving patient throughput is a major hospital-wide project that requires continuous process

improvement and coordination of numerous departments and functions in order to determine entire process. Patient throughput is a critical issue that directly impact patient safety and quality. The Joint Commission on Accreditation of Healthcare Organizations recently developed a new standard requiring hospital leadership to develop and implement plans to identify and mitigate issues in a hospital that can interfere with efficient movement of patients across the continuum of care within an organization. (Joint Commission on Accreditation of Healthcare Organizations, 2004)

Moving patients efficiently and effectively through a healthcare system can also optimize an organizations' capacity. Research conducted by The Advisory Board reported that comprehensive approach to patient throughput could yield nearly 25% more effective capacity for the average hospital. (Smith, 2003)

Ideally, admission is the most appropriate time to begin to plan for a patient's discharge needs. JCABO mandated early identification of patient's discharge planning needs and the assessment of necessary resources to meet the patient's needs after discharge from a healthcare facility. (Lile, 1998)

Discharge planning is a process that begins with early assessment of anticipated patient care needs. Effective discharge planning requires input from numerous disciplines: physicians, nurses, educators, dieticians, and social workers. Coordinating these disciplines is one of the challenges hospitals face. (Steele and Sterling,1992)

2.Research Questions:

2.1. What are the reasons for delay in discharge of patients?

2.2. What proportion of cases being delayed due to hospital/administrative and personal reasons?

3.Objectives:

3.1. To understand the process of discharge of patient.

3.2. To find out the scope of improvement in the process if any.

4.Methodology:

Study area: Kokilaben Dhirubhai Ambani Hospital, Mumbai.

Study Design: A prospective, observational time motion study was conducted in the 13th,14th and 15th floor of Kokilaben Dhirubhai Ambani hospital & medical research institute from April 8,2017 to May 05, 2017.Informed consent was not necessary because of the observational nature of the study. Patient care was not affected by the study, and individual patient information was not used during the analysis of data.

Sampling unit: - Patient who was about to discharge that day.

Sampling size: - A sample size of 200 patients has taken.

Inclusion criteria: - Includes those patients who were paying by cash.

Exclusion criteria: - Patients who were under insurance or corporate cover.

Sample Technique: -The technique used to collect data was simple Random sampling.

Design Tool: The tool used for data collection was self-administered tabulated format for each day under the following domains to record:

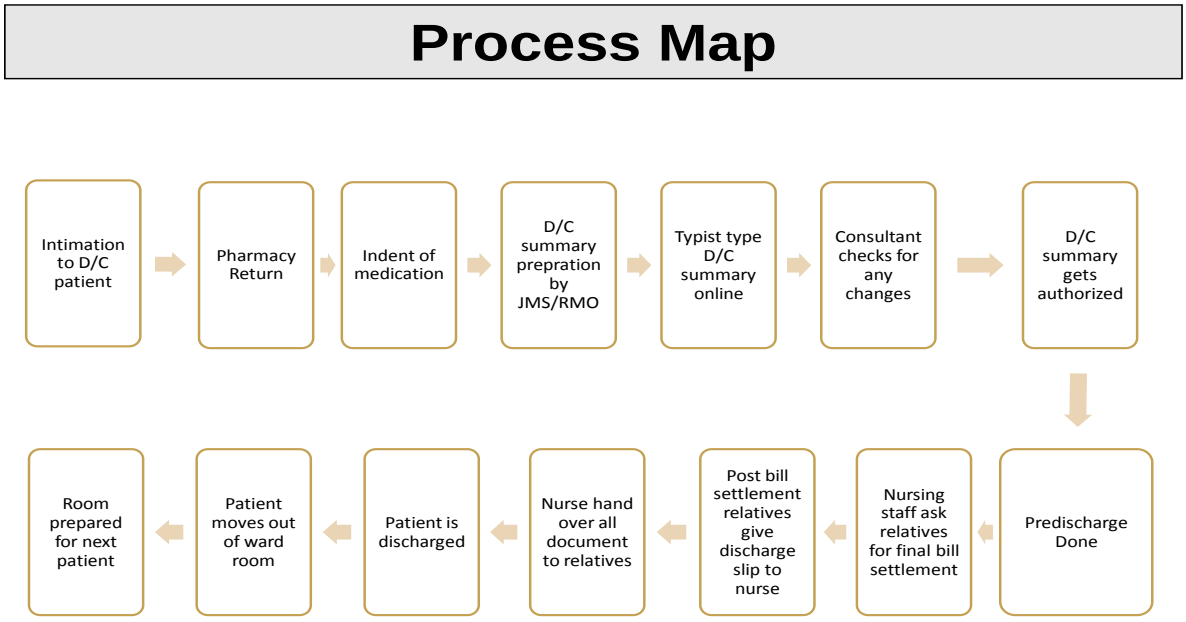
- **Transfer from** –Numbers of patient planned for discharge.
- **Intimation time** - the time when doctor prescribes to patient for discharge.
- **Pre-discharge time**–time when nurses completed the pre-discharge of the patient.
- **Discharge summary preparation time** – the time required for doctor to prepare the summary and authorized it later.
- **Bill closing time-** the time required by patient or patient's attendant for enclosing the bill.
- **Physical discharge time-** the actual time required for patient to leave the hospital after bill settlement.
- **Reasons for delay.**

Data collection: After designing the tool for data collection, the data was collected and recorded by observing and tracking all the beds planned for discharge for a day. Also by daily

communicating with individual patient, Sister in charge, team leader for that floor and Floor coordinator to determine the reason for delay in discharge.

Transfer Process: A patient was classified as ready for discharge from the floor in the late evening or same day by the consultant. After getting the discharge intimation nurse starts the process and return unused medicines of patient to the pharmacy department. Pharmacy boy come and take the medicine from each floor. In each floor there is a typist for discharge summary typing. They type the discharge summary and forward to the consultant for authorization. Then patients are informed for billing and nurse close the bill from system. After Pre-discharge Patient's attendant go for billing to the billing department and billing staff settle the bill. Next patient attendant come to the floor and collect all the reports of the patients. Nurse verifies all the documents and hand over to the patient. After that patient vacate the bed and physically leave the hospital.

Transfer Process: -



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Definition of delay: Delay in discharge from the ward was defined as time elapsed between the allotted time for discharge and the actual discharge time.

Required transfer time: The time required from doctor's intimation to physical discharge the patient out of the hospital, is maximum 03 hours.

Reasons for Delay: Before the study , the planned or unplanned patient, floor nurses and team leader in charge were interviewed to understand the transfer process i.e., after doctor

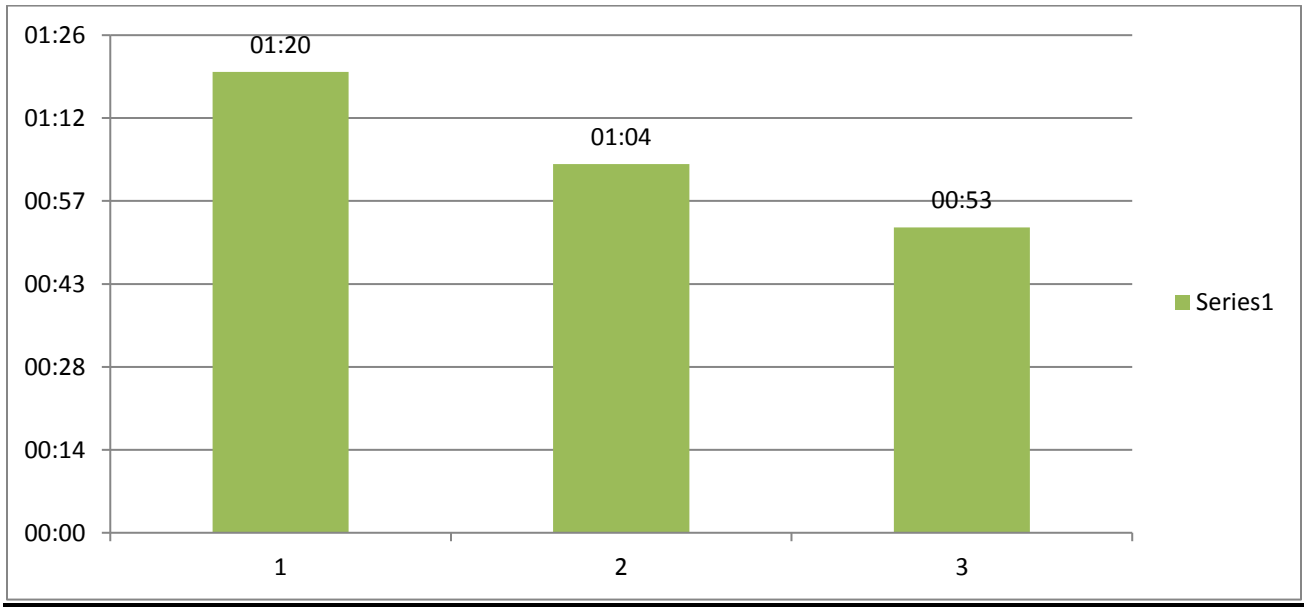
recommended for discharge till the patient physically discharged from the hospital and to determine the perceived reasons for delay in their discharge which leads to huge dissatisfaction among patient and their attendant.

FINDINGS: -

During the study time, 200 patients were transferred from IPD and the mean time of there is 198 minutes i,e around **03 hours 18 minutes.**

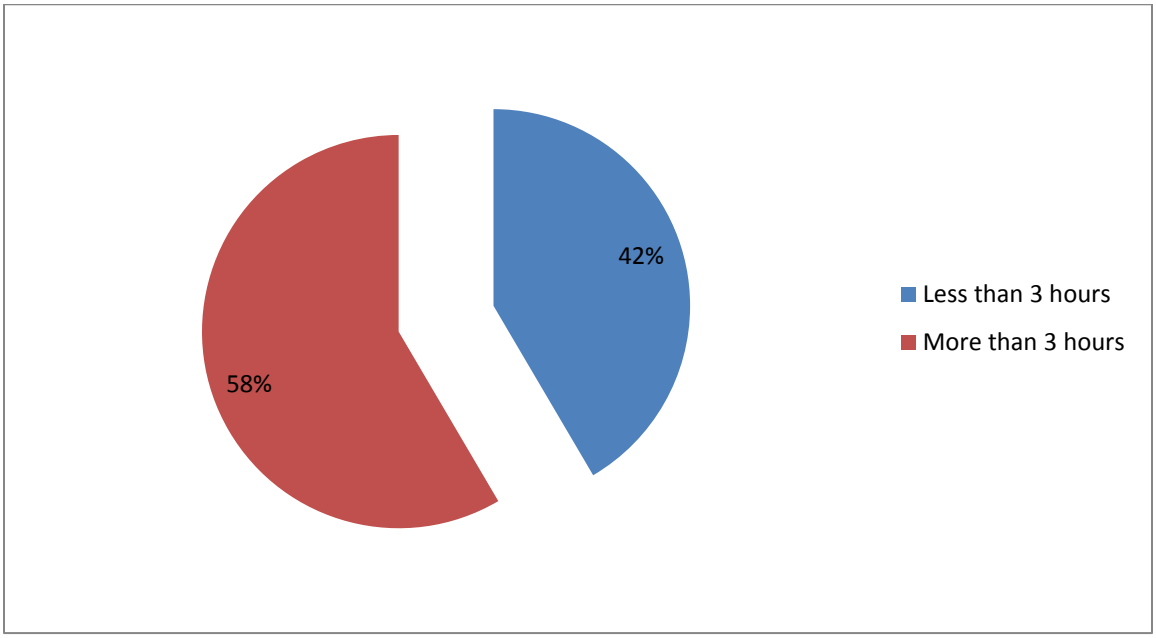
- Out of which average time taken between:-
    - Doctor's intimation to the predischarge done by the nurseis: -**80 minutes.**
    - Nurse prepares pre-discharge and patient encloses their billis: -**64 minutes.**
    - Bill settlement and physical discharge of the patient: - 53 **minutes.**

Average time taken in each steps:-

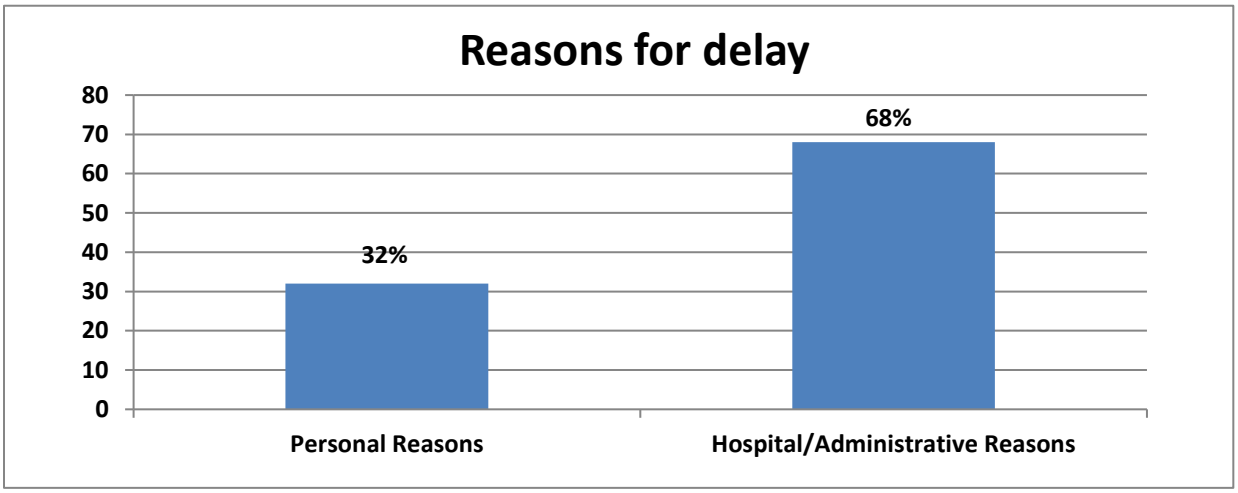


Data Analysis and Data interpretation: -

During the study time, 200 patients were transferred from discharged from IPD. And the maximum time taken to complete the transfer process is 06-hour 13minutes whereas minimum time is 01 hours 03 minutes. Average time taken in total transfer process is 03 hour 18 minutes. As in Kokilaben Hospital there is no any ideal time for discharge. Soas hypothesizedby Sister In-charge and floor coordinators we make a actual time that patient those who take more than 03 hours are the opportunities areas for improvement.



Here out of 200 patients, 58% patient takes more than 3 hours for shifting whereas 42% patient takes less than 3 hours.



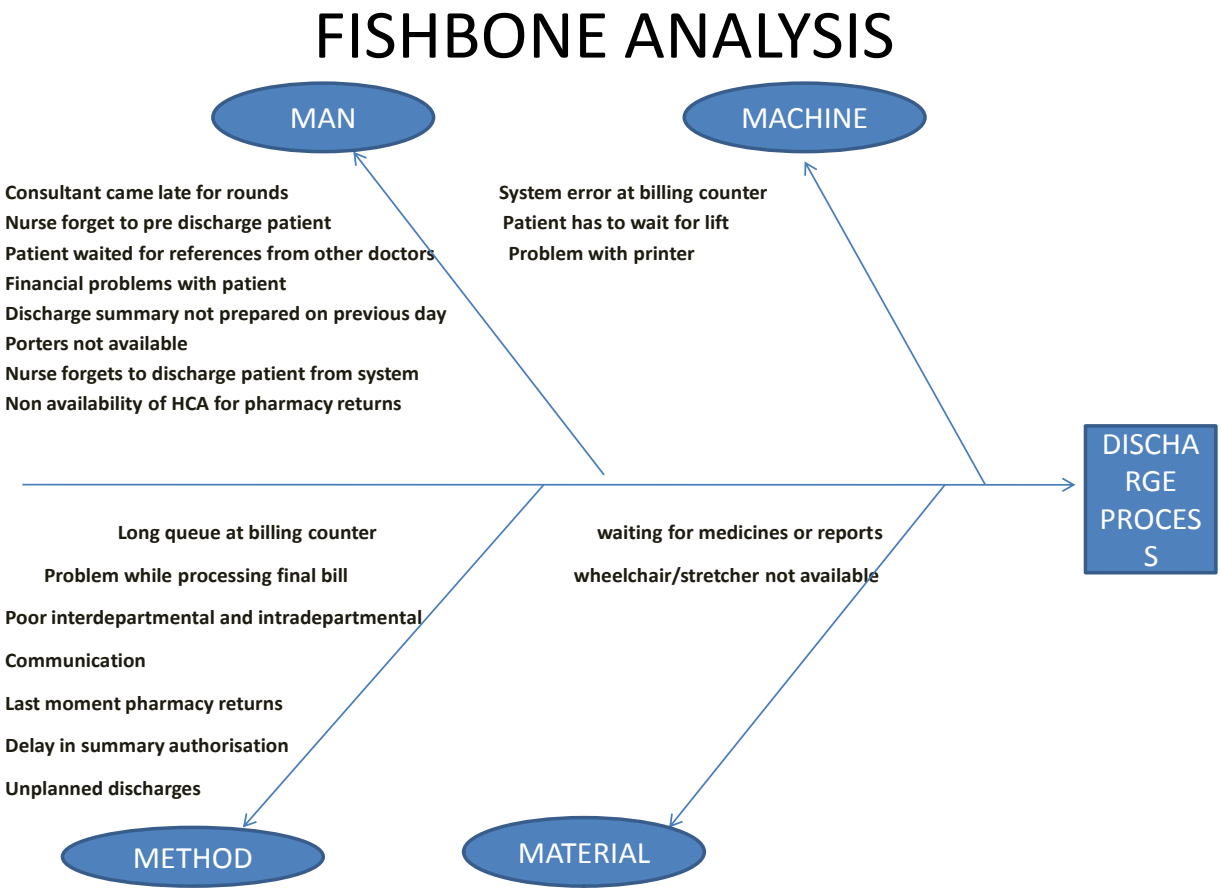
Here 68% of patient get delay due to hospital/administrative reasons i.e.:-

- Post doctor's intimation.
- During pre-discharge preparation.
- During bill settlement.
- From bill settlement to physical discharge of patient.

Here 32% of patients get delay due to their personal reasons i.e.: -

- X ray needed to be done before discharge.
- Patient waited for drip to be completed.
- Patient was arranging cash or waited for their relatives to arrange cash.
- Patient was waited for some other treatment to be done so discharge delayed.
- Patient waited for medical instructions and some other consultant.

FISHBONE ANALYSIS:



Discussions and Conclusion:

In this study, we found that, the mean time for the completion of discharge process was 3 hours 25 minutes. A possible explanation for the observation is delay in discharge of ward patient especially in case of discharge it almost takes more than 4 to 5 hours for physically out of patient from hospital. On calculating, delay in discharge from ward occurred in 71% of cases, with hospital/administrative causes as the predominant reasons accounting for 68% of delayed discharge.

We found that from the 68% of hospital/administrative reasons of delay, 32% of discharge were delayed due to persona reason, where as37% of delay is due to doctor came late in round because waiting for their referral consultant confirmation, sometimes the referral consultant may busy in their OPD or busy in O.T.13% of delay was happened because of late in discharge summary authorization

12% of delays due to issue in billing because some time billing department charge extra like doctor came to patient but not met and charges was there so patient itself was searching for that doctor but she went so searching for other doctor to confirm it.. 9% of the delay is due to long queue in billing department.

Another 3% of delay occurs due to miscommunication among floor nurses and patients as sometimes nursing staff were too much busy in their work that they forget to inform the patient to go to the billing department. Delay occurs also due to late in medicine return like sometime pharmacy return was kept on desk for more than an hour.

A large number of delay were also related to clinical reason sometime treatment need to be done. 16% of patient get delay due to other reasons: - Non availability of porter, Patient attendant were not present sometimes, waiting for patient reports ,Non availability of wheelchairs etc.

Recommendation:

Although KDAH has the best quality practices as compared to the standard guidelines, it should focus on enhancing the efficiency and productivity in ICU.

1. For the discharge of patient there should be minimum allotted time of them in advance.
2. Patient for discharge should be prioritized to be seen first during morning round of consultant.
3. Pharmacy indent time should be fixed.
4. One HCA head should always be there at one counter at every floor of inpatients.
5. There should be a coordinator in every floor who can manage the overall discharge process.
6. Early identification of patient for possible discharge at least 24 hours in advance.
7. It should be made mandatory to write the discharge summary one day prior if it is planned discharge.
8. A prior SMS can be send to patient or patient's attendant regarding the billing so that patient can cross check the bill and then proceed for billing.

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