

**Summer Training at
Kokilaben Dhirubhai Ambani Hospital & Medical Research Institute,
Mumbai**

Turn Around Time of Patients in Outpatient Department

**By
Kanika Arora**

**Under the guidance of
Mr. Rahul Sharma**

**MBA Hospital and Health Management
2015-2017**



**The IIHMR University, Jaipur
2016**

CERTIFICATE

TO WHOM SO EVER IT MAY CONCERN

This is to certify that **Dr. Kanika Arora** student of **MBA Hospital and Health Management** from the IIHMR University; Jaipur has undergone summer training at **Kokilaben Dhirubhai Ambani Hospital & Medical Research Institute, Mumbai** from 1st April to 31st May, 2016.

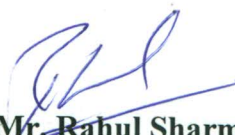
The candidate has successfully carried out the study designated to her during summer training and her approach to the study has been sincere, scientific & analytical.

The internship is in fulfilment of the course requirements.

I wish her all success in all her future endeavours.



Col. (Dr.) Ashok Kaushik
Dean (Academics & Student Affairs)
IIHMR University, Jaipur

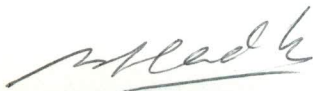


Mr. Rahul Sharma
Assistant Professor
IIHMR University, Jaipur

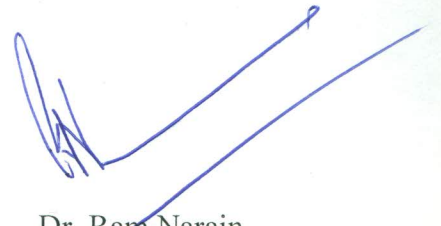
TO WHOM SO EVER IT MAY CONCERN

This is to certify that **Dr. Kanika Arora**, 1st year student of MBA- Master in Hospital and Health Administration at the Institute of Health Management Research, Jaipur has successfully completed 2 months (from 1st April to 31st May, 2016) internship program at our hospital. During the period of her internship program with us she was found punctual, hardworking and inquisitive.

We wish her very best in her future endeavours.



Dr. Milind Khadke
G.M. (Clinical Administration)



Dr. Ram Narain
Executive Director





Kokilaben Dhirubhai Ambani
hospital & medical research institute

Every Life Matters

To Whom So Ever It May Concern

This is to certify that **Dr. Kanika Arora** has successfully completed the assignment on 'Out patient turn around time' and 'Focused study on pediatric department turn around' at Kokilaben Dhirubhai Ambani Hospital. We have found her work to be of high analytical ability and the recommendations suggested by her were perceived as high value inputs towards betterment of the department.

We are sure that she will be an asset for any organization where she pursues her career and would wish her all the best for her future endeavors.

Regards

Authorized Signatory

Date: 31st May 2016



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ACKNOWLEDGEMENT:

With immense pleasure I express my heart full gratitude to the director of IIHMR Jaipur, Dr. S.D. Gupta, and Dean, and my mentor Mr Rahul Sharma for having given me this opportunity to undergo training.

I am extremely indebted to all the professionals at KokilabenDhirubhaiAmbani Hospital (KDAH) for sharing generously their knowledge and precious time which inspired me to do the best during summer training. I owe a great debt to chief executive officer (KDAH) for providing me an opportunity to work as a trainee in their organisation. I would like to thank Dr. Ram Narain and Dr. Dhaval Bhatt 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 Medical Records Department for their cooperation which enabled me to complete my special assignment in the department.

I am also grateful to all the department heads and staffs for giving me time in spite of their hectic schedule. Without their active cooperation and participation it would not have been possible to accomplish my task.

INTRODUCTION

After 1st year, we started with our internship at KOKILABEN DHIRUBHAI AMBHANI HOSPITAL. There we were asked to do some projects according to their requirements. We studied the infrastructure, functioning and various departments of the hospital. Our learning in the hospital as per the weeks are:

week	observation	learning
1 st week	Hospital orientation	Hospital functioning and infrastructure
2 nd week to 5 th week	OPD project	OPD flow and functioning
6 th week and 7 th week	Paediatrics department	Studied the OPD in paediatrics and functioning problems
8 th week	Project ending	Data analysis and project completion, seminars and meeting

PROFILE OF KOKILABEN DHIRUBHAI AMBANI HOSPITAL

KokilabenDhirubhaiAmbani Hospital (KDAH) and Medical Research is India's newest most advanced tertiary care facility. As the flagship social initiative of Anil DhirubhaiAmbani 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 KokilabenDhirubhaiAmbani Hospital and Medical Research Institute.

Inaugurated in January 2009, the hospital is significant CSR initiative from Reliance Anil DhirubhaiAmbani 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.

The hospital project was initiated in 1999 by Dr.NituMandke as a large scale heart hospital. Dr. NituMandke was born in 1948 in a middle class family. He was the first in the family to take up medicine as a profession with a determination to become a heart surgeon.

He joined B.J Medical College; Pune from where he passed his M.B.B.S. in 1970 came to Mumbai for further studies and completed his super speciality course in cardiovascular surgery. He spent close to 8years working with world renowned figures in cardiac surgery like Dr.MagdiYacoub in England and Dr.Kirklin and Dr. Pacifico at the University of Alabama in the United States. He was an all rounder with exemplary proficiency in sports, art, languages, mathematics and so on.

In his lifetime he won the heart of many and prepared many more through unerring surgery. He won various social awards like: “The Rajiv Gandhi Gold medal of merit 1992”, Indra Gandhi Sadhbhawna Award 1999, Outstanding Man of the 20th century, 2000, “Sarvashri” Gold Medal Award, 2000, Pride of India, 2001, Maharashtra Gaurav Award to name a few.

With great passion Dr. Mundke built a substantial portion of the hospital building. Sadly his dream was cut short by fate when he succumbed to a massive heart attack in May 2003; leave a dream unfulfilled and unfinished.

The Management of Madke Foundation approached reliance ADA Group, who graciously took over this project and developed it into one of the most modern and state-of-the-art multispecialty tertiary care hospital; naming the institution as KokilabenDhirubhaiAmbani Hospital and Medical Research Institute.

In honour of initiator, the hospital’s Medical Convention Centre has been aptly dedicated to the memory of Dr.NituMandke.

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.” As mentioned in website

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.

Encompassing 10 lakh sq.ft of space spread over 17 floors and two basements. Its intelligent framework allows for hospital staff to optimize utilization of space and resources.

Accommodates over 750 in – Patient beds, allows optimal utilization of resources and ensures privacy, dignity, comfort, convenience and the best healthcare to every patient. However the smooth and seamless movement of people & staff guaranteed.

Critical care unit is the largest number of critical care beds in Mumbai, with 130 ICU beds. Special technical features in ICU including ceiling mounted, dual arm pendants which ensure that the space around the patient is not cluttered. Another unique feature is dedicated air supply that keeps the critical care free of any kind of contamination and infection.

It has a total of over 140 full time consulting clinics with the capacity to handle over 6000 outpatient consulting every day.

Movements in the hospital is managed by 30 elevators – largest elevator bank for any hospital in India capable of transporting 7500 persons per hour, with different elevators for inpatients , outpatients, staff and catering.

The Hospital's laboratory is housed on a single floor over an area of over 40,000 sqft offers over 3000 routine and highly advanced diagnostics, genetic and molecular biology test and will serve as a referral centre for second opinions.

UNIQUE IN INDIA

Encompassing 10 lakh sq.ft of space spread over 17 floors and two basements. Its intelligent framework allows for hospital staff to optimize utilization of space and resources.

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UNIQUE IN KDAH, MUMBAI

Mumbai's first slice PET CT Scanner that combines computed tomography and positron emission tomography technologies into a single machine.

140 ICU beds, largest number of critical care beds in Mumbai.

Hospital's laboratory housed on single floors spread over an area of over 40,000 sq ft. It offers over 3000 routine and highly advanced diagnostics, genetic and molecular biology tests.

Hospital is having Mumbai's largest OT complex with 22 operating theatre.

Largest Dialysis centre in Mumbai.

Full – time Specialist System: All doctors are attached and available only at Kokilaben Hospital.

Level 1 Accident and emergency Center

HOSPITAL INFRASTRUCTURE

As per the observation done in training, the following are the details of the hospital:

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 Check up program
- Sample Collection
- Centre for cardiac Sciences
- Centre for bone and joint

- Centre for pulmonary and lung medicine
- Multi-Specialty OPD

6.Second Floor

- Centre for children
- Centre for brain and nervous centre
- Dental clinic
- Centre for cancer
- 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 (labour and delivery)
- ICU (Paediatric and Neonatal)
- Birthing suites
- OT (Obstetric)
- Wards

13. Ninth Floor

- Inpatients (Paediatric)

14. Tenth Floor

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

15. Eleventh Floor

- General ward
- Nursing College

15. Twelfth To Sixteenth Floor

- Inpatient.

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. Due to the unplanned nature of patient attendance, the department must provide initial treatment for a broad spectrum of illness and injuries, some of which may be life threatening and require immediate attention.

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

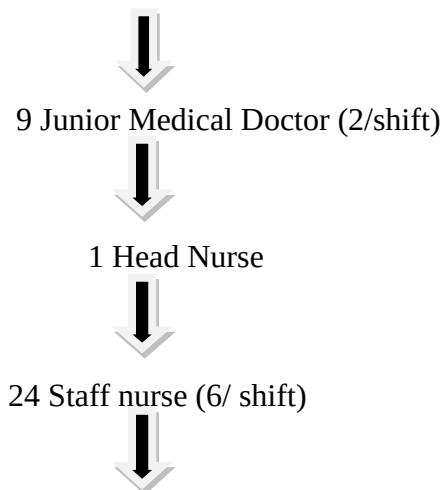
✓ Bone marrow aspiration

✓ 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

KokilabenDhirubhaiAmbani 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 six centre of excellence are as follows:-

- Centre for neurosciences
- Centre for cancer
- Centre for physical medicine and rehabilitation
- Centre for cardiac sciences
- Centre for bone and joint
- Centre for children

The specialists included are Anaesthesiologist, Critical Care Medical, accident and emergency, gynaecology and obstetrics, imaging, laboratory medicine and pathology including biochemistry, molecular biology, haematology, 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 centre 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 dedicated to the diagnostic and preventive side of patient care. It is a place where healthy patients 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 addition, 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 highly 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 cater to patients with most severe and life threatening illnesses and injuries requiring constant close monitoring and support from specialist equipment and medication to ensure normal bodily functions. There is adult ICU consisting SICU & MICU, paediatric ICU, neonatal ICU, transplant ICU and paediatric cardiac ICU. The nurse patient ratio for critical patients is 1:1 and for stable patients is 1:2. The ICU coordinates with CSSD, Laboratory and the radiology department, strict aseptic techniques are used. Pressure zones are created to control infection rate

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)

Intensive 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.

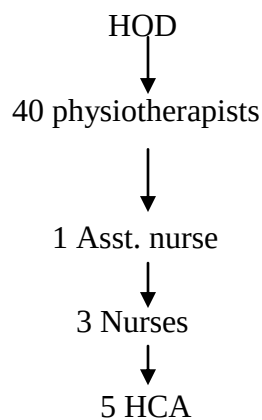
NEONATAL INTENSIVE CARE UNIT

The NICU is 18 bedded and located on 8th floor. The department is divided into 2 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 :**



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

IVF CENTRE:-

- Centre for reproductive endocrinology and fertility (CREF) is located on the 7th floor of the hospital and has dedicated space for out-patient care and day care of patients with infertility and reproductive endocrine problems and for medical acupuncture and mind body program.
- CREF is staffed by full time consultant reproductive endocrinologist and infertility specialist,embryologist and infertility issues and a health care assistant.
- A full-fledged laboratory and radiology department offering a comprehensive range of tests including some newer cutting edge tests under one roof only compliments our services at CREF,but is also extremely convenient for patients.
- Medical conditions addressed at CREF:

- ✓ Reproductive endocrinology
- ✓ Midlife health care
- ✓ Bone health
- ✓ Adolescent gynaecology
- ✓ **Infertility treatment**
 - ❖ Fertility drugs to induce/ enhance ovulation(pills or injections)
 - ❖ Intrauterine insemination
 - ❖ Assisted reproductive therapy(ART) procedures:
 - In vitro fertilization (IVF)
 - Intracytoplasmic sperm injection(ICSI)
 - Assisted hatching(AH)
 - Blastocyst transfer
 - Pre-implanation genetic diagnosis(PGD)
 - Embryo cryopreservation
 - Sperm cryopreservation
 - Testicular tissue cryopreservation
 - Third party reproduction
 - Donor oocytes
 - Donor sperm
 - Gestational surrogacy
 - Donated embryos

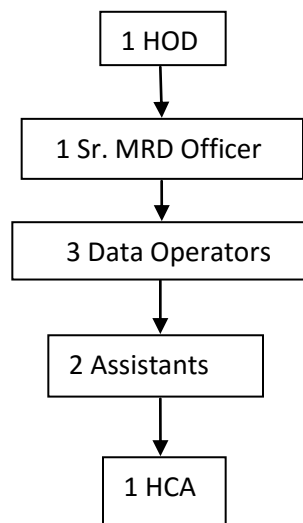
Other facility:-

- ✓ Diagnostic tests
- ✓ Billing and registration
- ✓ Phlebotomy services
- ✓ Ultrasound facilities
- ✓ Andrology and embryology 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 files
 - 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-Gynaecology, & obstetrics, IVF files
 - ✓ Dark blue- general medicine, critical care, Nephrology, Endocrinology, Gastroenterology, Pulmonary medicine, Dermatology, Dental, Psychiatry, rehabilitation, Rheumatology.
 - ✓ Light blue- Paediatrics
 - ✓ Orange- Neurology, CVTS, Cardiology, Orthopaedics.
 - ✓ 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-disciplinary 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. as a 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 DEPARTMENT:-

The central sterile supply department (CSSD) plays a key role in providing the items required to deliver quality patient care. Centralizing the reprocessing of reusable devices helps ensure uniform standards of practice, while also providing for improved workflow (soiled, to clean, to sterile). This also facilitates the training and education of skilled technicians who must be aware about the standards, complexities, challenges, risks and technicians associated with the CSSD function. Every CSSD task must be performed for the welfare and safety of patients, co-workers and the community.

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 officers
- 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

RECORDS MAINTAINED AT THE HOSPITAL:-

- 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 MANAGEMENT:

- INDENTATION

- RECEIVING
- STORING
- DISTRIBUTION

The staff consists of:-

- 5 manager
- 1 executive
- 8 senior officers
- 24 officers
- 7 junior officers
- 6 trainee assistant
- 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 spraying every 24 hours for mosquitoes, cockroaches, flies, rats, lizards and termites.

- Garbage disposal-The housekeeping staff collects garbage bins existing inside the hospital premises and 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 maintenance of house plants & terrace gardens, flower arrangement during hospital functions.

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

CLINICAL ADMINISTRATION SERVICES

STORES

Material stores function in order to supply the right material in right quantities 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 consumables as per requirement. Stock is reviewed periodically for non moving 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 in 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 are collected and put in a red bag at the source 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's 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 BILLING:

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 officer.

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 supplies
- 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

PURCHASE DEPARTMENT:

Purchasing department is responsible for the procurement of function of the hospital. The primary functions of the department are to:

1. Procure the rights and services from the right suppliers at the right time for the right place.
2. Receive, warehouse, issue & distribute stocks to hospital departments in accordance with KDH procedure.
3. Hospital users and clinicians actively participate in product evaluation processes. The purchasing department is actively involved in cost analysis and suppliers performance management. It is through all of these activities that the department manages the chain process.

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.

INTRODUCTION

Patients' waiting time has been defined as "the length of time from when the patient entered the outpatient clinic to the time the patient actually leaves the OPD".

Whether it's a time used for registration of patient, routine doctor's appointment, emergency room treatment, laboratory/diagnostic test, procedures, receiving the results of various tests, waiting happens to just about everyone seeking medical care.

It's often one of the most frustrating parts about healthcare delivery system.

Waiting times for elective care have been considered a serious problem in many health care systems since it acts as a barriers to efficient patient flows.

OPDs is considered as the window to hospital services and a patient's impression of the hospital begins at the OPD. This impression often influences the patient's sensitivity to the hospital and therefore it is essential to ensure that OPD services provide an excellent experience for customers. It is also well-established that 8-10 per cent of OPD patients need hospitalization.

LITERATURE REVIEW

Evidence of poor and sub-par quality among hospitals has been well documented in recent years. In response, the federal government, foundations, and the private sector have funded research to identify best clinical practices and develop strategies to reduce medical errors and improve health outcomes. A major element of this work has involved defining and measuring quality and developing indicators of performance to compare hospitals across the country.

The outpatient services often are the first point of contact with a hospital. It is an extremely busy area as all the patients have to pass through this area. It is important it is well managed, as the first impressions get shaped during this process. Some of the major management challenges in outpatient management are waiting time, communication, employee behaviour for promoting service excellence, ambience for creating healing environment, and health education. Each of this is looked at to get different perspectives on how to address it in a patient friendly way. Another important aspect of OPD management is leveraging the use of information technology. Many studies have been done to reduce the waiting time of the patients in opd.

ZHU Zhecheng; HENG Bee in 2002:

This paper is focused on the factors causing long patient waiting time/clinic overtime in outpatient clinics and how to mitigate them using discrete event simulation. A two-week period of data collection is conducted in an outpatient clinic of a Singapore government hospital. Detailed time study from patient arrival to patient departure is conducted, and the possible factors causing long patient waiting time/clinic overtime are discussed. A discrete simulation model is constructed to illustrate how to improve the clinic performance

improvement is achieved if the factors are well addressed An outpatient clinic is known as a private or public healthcare facility which is devoted to diagnoses and treatments of outpatients The types and functions of outpatient clinics cover different specialties and vary from country to country . Study in this paper is focused on outpatient clinics in Singapore, which is known as specialist outpatient clinics (SOC). SOC in Singapore are clinics associated with hospitals and medical centers. Each SOC is specialized on one type of diseases, e.g., orthopedic clinic, ear, nose and throat clinic, eye clinic, etc. An SOC mainly accepts patients referred by various sources with appointments. SOC staffs arrange an appointment for each appointment request by picking up a free slot of a specific specialist through the appointment management system.

Recent years SOC's are facing increasing pressure to handle more appointment requests than before due to the aging and growing population [3]. The lead time between an appointment request and the actual visit tends to be longer because the growth of SOC capacity cannot catch up with the increasing demand. In order to mitigate the increasing appointment lead time, more slots are arranged in each operating session to maintain a constant appointment lead time. However, the rising workload per session causes other problems. The overloaded clinic becomes more congested and patients have to wait longer for their consultations. There is also higher chance of overrunning session time. The increasing waiting time and overtime have negative impact on patient satisfaction and staff morale.

Baluja Labs The Out Patient Department (OPD) provides clinical services to patients without the need to stay overnight. Patients who need medical or surgical care but are not in acute emergency generally attend the OPD. In comparison to indoor care the outpatient care is relatively more convenient to patients and is less expensive. The chances of hospital-acquired infections are less. Shortage of hospital beds in the country also encourages outpatient services to be utilized optimally.

Among all departments in a hospital, the OPD caters to maximum number of patients. It is generally the first point of contact of patients and their attendants with a hospital, and thus creates first impression about the hospital services. Therefore, it has wider implications on the reputation and brand image of the hospital. Although OPD is not a major profit center of hospitals, it generates revenues indirectly through diagnostic services and admissions.

Fenghueih Huarng, Mong Hou Lee, (1996):

Overwork and overcrowding in some periods was an important issue for the out-patient department of a local hospital in Chia-Yi in Taiwan. The hospital administrators wanted to manage the patient flow effectively. Describes a study which focused on the utilization of doctors and staff in the out-patient department, the time spent in the hospital by an out- patient, and the length of the out-patient queue. Explains how a computer simulation model

Baluja Labs was developed to study how changes in the appointment system, staffing policies and service units would affect the observed bottleneck. The results show that the waiting time was greatly reduced and the workload of the doctor was also reduced to a reasonable rate in the overwork and overcrowding periods.

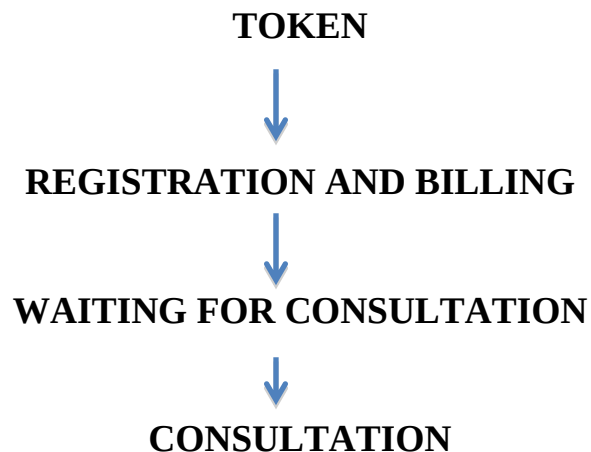
According Norman T.J. Bailey:

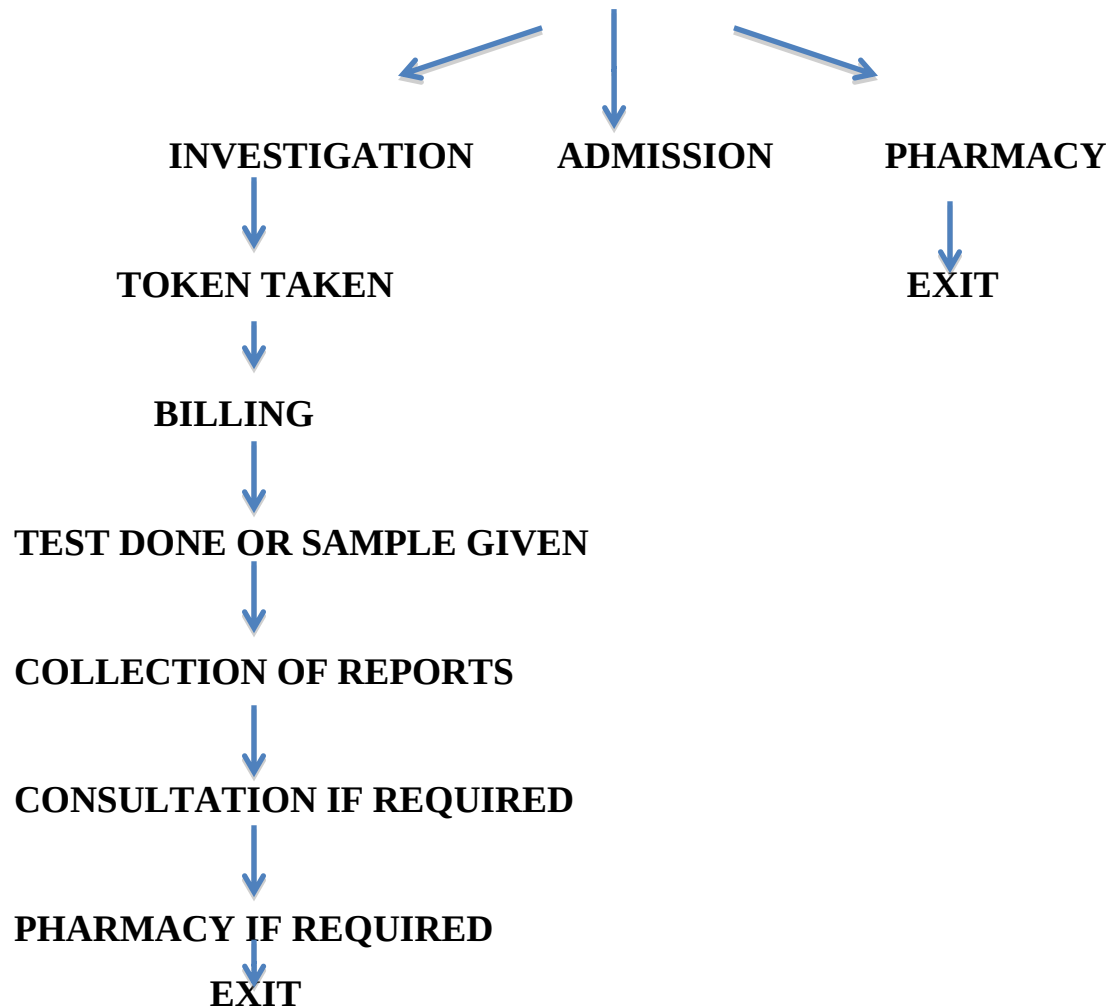
An investigation, based on the use of random numbers, has been made into the kind of queueing process occurring in hospital out-patient departments. Special attention has been paid to the patients' waiting time and also to the time which a consultant may waste waiting for the next patient. As compared with many appointment systems at present in use, it is concluded that by suitable choice of the system to be adopted a substantial amount of the patients' waiting time may be eliminated without appreciably affecting the consultant. A recommended procedure is to give patients appointments at regular intervals, each equal to the average consultation time; the consultant commencing work when the second patient arrives. The effect of variations in the appointment interval, the number of patients attending the clinics, and the distribution of queue-size are discussed. The precision of the results obtained is also considered.

Giving patients information about how long they may wait is considerate and helpful. Waiting longer than expected may make patients anxious, particularly if they have had no warning, or if they believe they have missed their turn. A Waiting times should not usually exceed 30 minutes. A It is important that reception staff are kept informed about any delays and that this information is passed on to patients on arrival. A If there are any delays that occur after patients' initial arrival and during the waiting time, they should be told as soon as possible, so that if necessary they can rearrange their transport or take care of other matters, such as childcare or work arrangements. The use of digital display boards may assist in providing information about waiting times in particularly busy clinics.

A Doctor should make every effort to start outpatient clinics on time. A Patient who arrives late can disrupt an orderly clinic, but their appointment time can often be filled by those who arrive early. As a last resort, it may be necessary to give late arrivals a new appointment. A Waiting times for both inpatients and outpatients should be monitored.

PROCESS OF OPD





RATIONALE:

To study and analyse the current turnaround time of the patients in the OPD and suggest the recommendation to reduce the waiting time of the patients.

OBJECTIVES:

- To study the current turnaround time for OPD and identify the key factors in the delay which lead to increase the turnaround time in the departments.

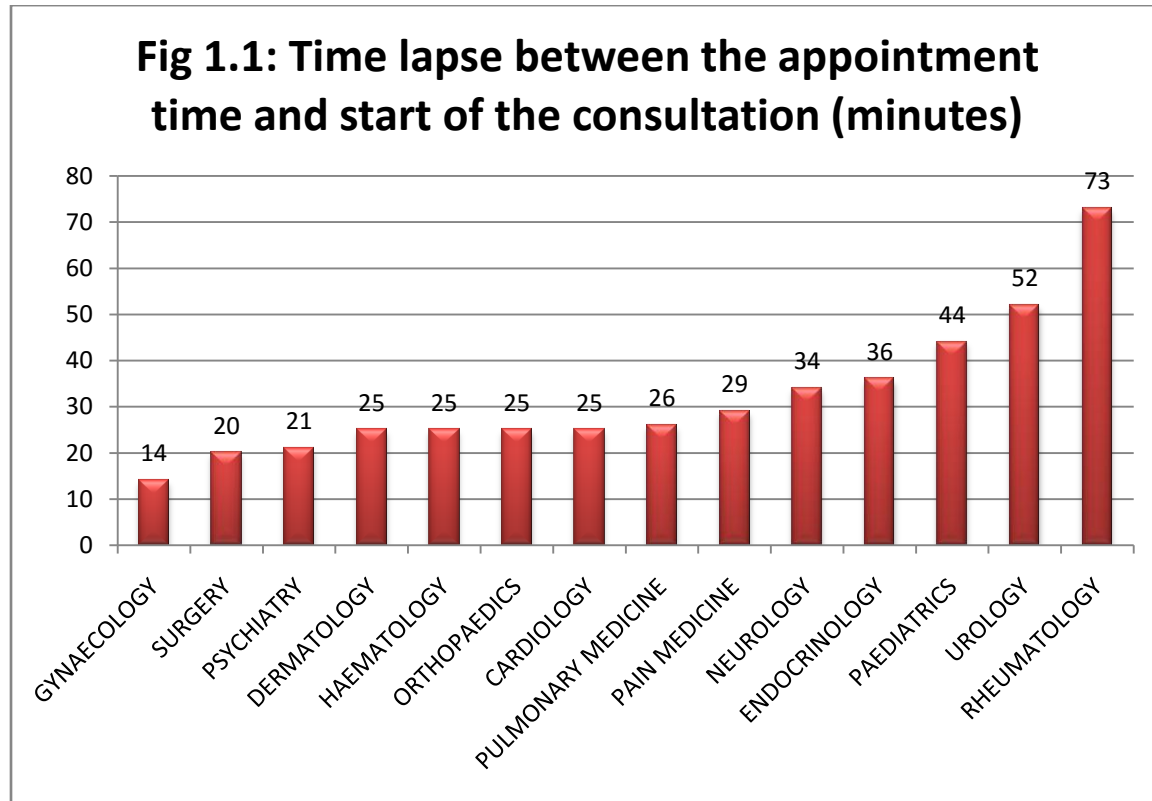
- To suggest the solutions and methods that could be adopted to reduce the waiting time of patient.
- To change the health seeking behavior of the patient and their caretakers during waiting.

METHODOLOGY:

- Cross sectional prospective study is carried out
- Quantitative method was used and patients were taken randomly
- The details of patients and time of his/her entry, the time for which the patient moves through various departments till either exit of the patient is noted.
- Tracking method is used in which the patients were traced from their entry into the hospital till their exit.
- After the data collection is done the data is analysed and evaluated to calculate the turnaround time of the patients and their waiting time in different departments.
- 300 patients were tracked and the data were entered and analyzed in MS. Excel.

FINDINGS:

FIGURE 1.1



DEPARTMENTS	Time lapse when the billing is done and the consultation starts
ENDOCRINOLOGY	16mins
GYNAECOLOGY	16mins
DERMATOLOGY	28mins
PSYCHIATRY	31mins
PULMONARY MEDICINE	33mins
PAIN MEDICINE	35mins
ORTHOPAEDICS	37mins
HAEMATOLOGY	37mins
CARDIOLOGY	38mins
NEUROLOGY	44mins
UROLOGY	46mins
PAEDIATRICS	46mins
SURGERY	48mins
RHEUMATOLOGY	55mins

Fig:1.2 Time lapse when billing is done and consultation starts (mins)

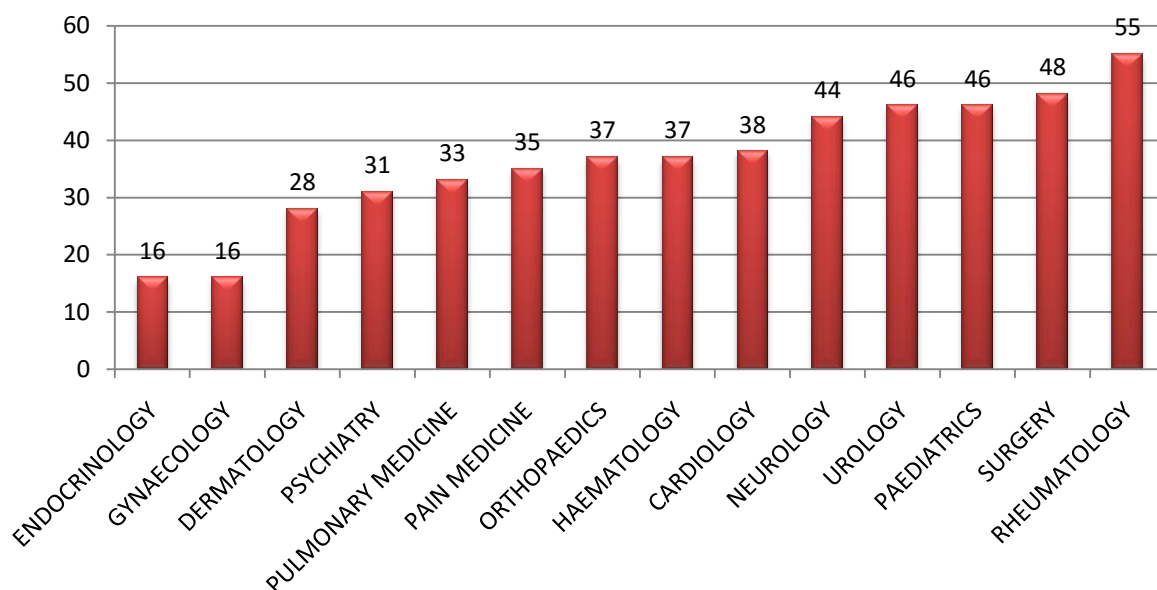
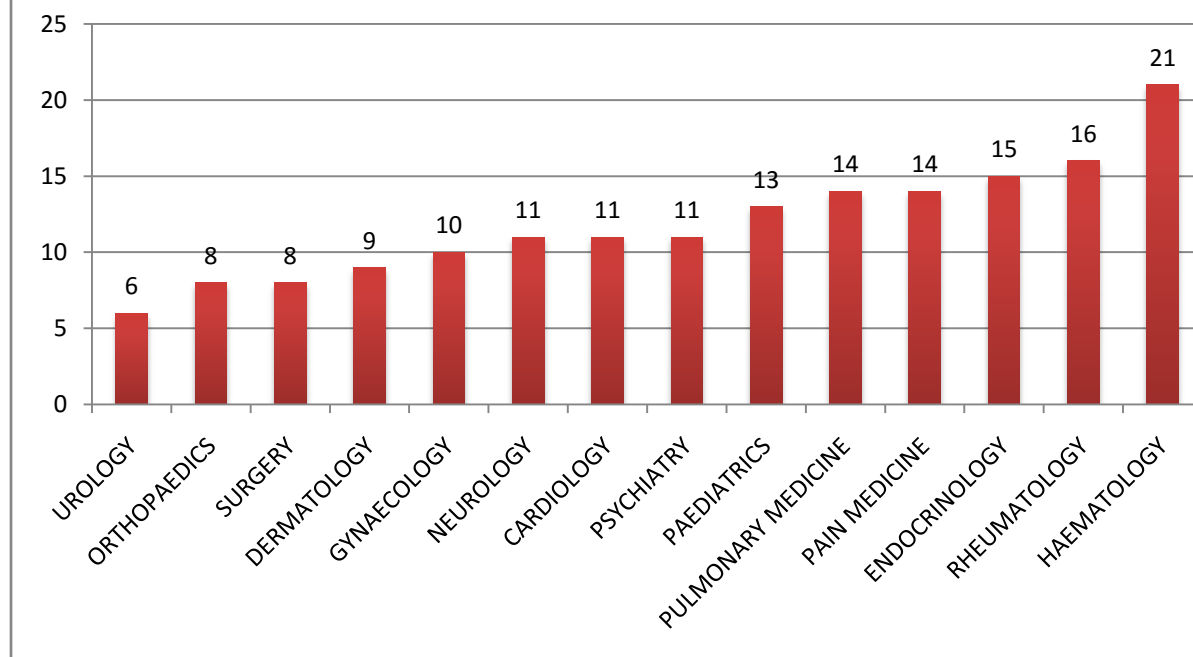


FIGURE1.2

DEPARTMENTS	CONSULTATION PERIOD
UROLOGY	6mins
ORTHOPAEDICS	8mins
SURGERY	8mins
DERMATOLOGY	9mins
GYNAECOLOGY	10mins
NEUROLOGY	11mins
CARDIOLOGY	11mins
PSYCHIATRY	11mins
PAEDIATRICS	13mins
PULMONARY MEDICINE	14mins
PAIN MEDICINE	14mins
ENDOCRINOLOGY	15mins
RHEUMATOLOGY	16mins
HAEMATOLOGY	21mins

Fig 1.3CONSULTATION PERIOD (mins)



INVESTIGATION TIME

Out of 300 patients 106 patients had undergone the investigations on the same day and 11 patients did not turn up so 11 were the drop out i.e.,

- 3.6 % - dropouts and
- 35.3% - went for investigations

The average time of the following investigations are:

- ECG (n=13) – 12 mins
- X ray (n=18) – 11 mins
- Uroflowmetry (n=8) – 10 mins
- PFT (n=8) – 12 mins
- Lab samples (n=24) – 11 mins
- Vaccination (n=11) – 9 mins
- Dermat treatment/dressings (n=24) – 11 mins

The average time for all the investigations reported till now in the sample is 13mins

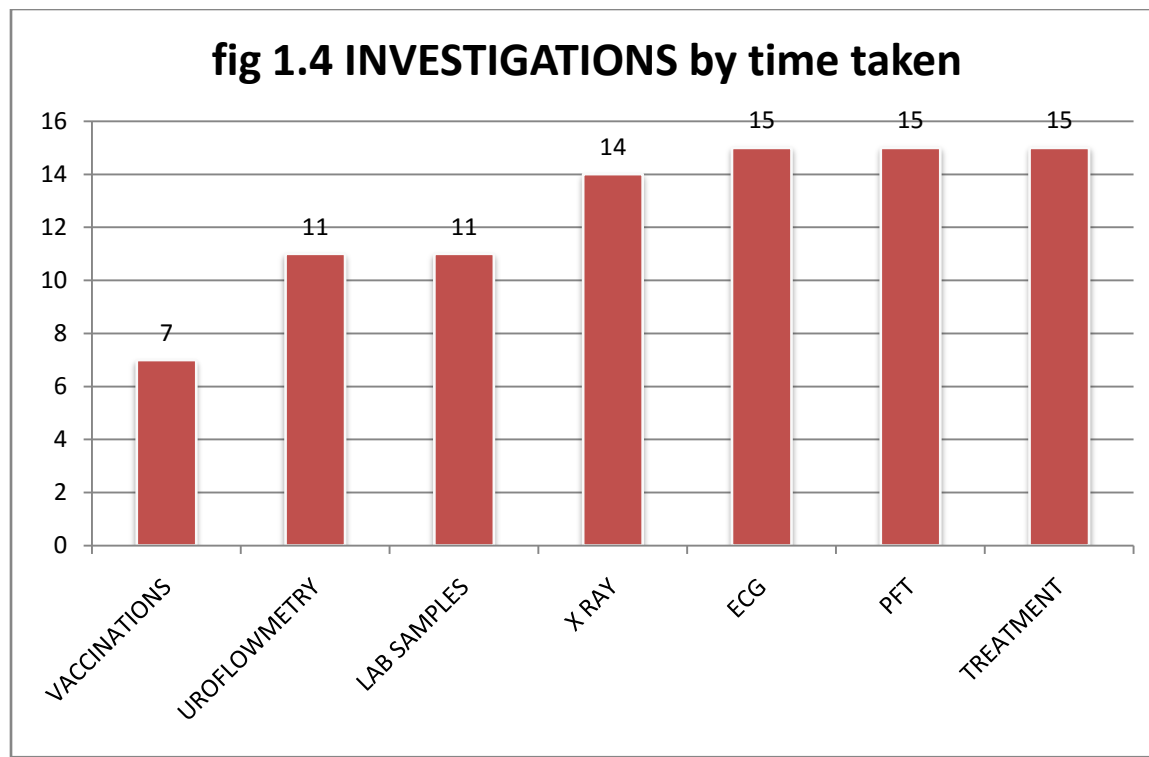


CHART 1.4

PHARMACY:-

- Average time of the patient in pharmacy is 11 mins

Pharmacy utilization:

As per the observation we did it was found that only 150 patients out 600 OPDs goes to pharmacy for medicines.

So the utilization is 25%

And the drop outs are 75%

Pharmacy

■ utilisation ■ dropouts

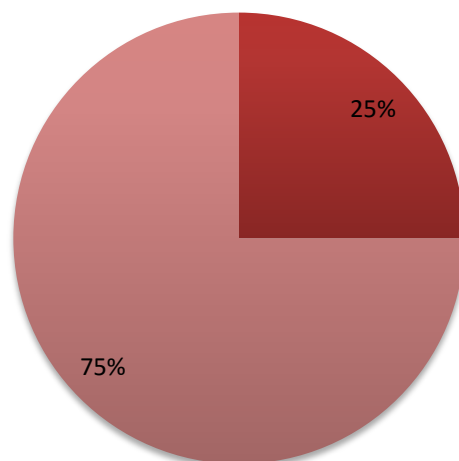


CHART 1.5

FINDINGS FOR ALL OPDs

	<u>TIME</u> <u>(hr : min)</u>
ARRIVAL V/S BILLING	<u>0.11</u>
BILLING V/S CONSULTATION	<u>0.38</u>
APPOINTMENT V/S CONSULTATION	<u>0.35</u>
TOTAL CONSULTATION	<u>0.12</u>
INVESTIGATION TIME	<u>0.13</u>
PHARMACY	<u>0.11</u>

CHART 1.6

- ❖ arrival v/s billing: time lapse when patient arrives to the hospital and his billing completes
- ❖ billing v/s consultation: time lapse when the patient's billing is done and when the consultation starts.
- ❖ Appointment v/s consultation: time lapse when the patient is given the appointment and when his consultation starts.
- ❖ Total consultation: time period when consultation starts and ends.

Discussion and Conclusion:-

FOR OPD REGISTRATION COUNTER:

- Time taken by patients in filling registration form and billing : 11minutes.
- Frequency of patients is more on Monday, Thursday and Saturday.
- Major causes of delay at the registration counter is incomplete submission of form by the patients, other queries done on registration counter rather than going to help desk, problem of down server, faulty unique id generation machine.

FOR OPD WAITING AREA:

- Average Registration and billing time :11 minutes.
- Average waiting time for consultation : 41 minutes.
- Average waiting time between the appointment time and consultation starts : 39 minutes.
- Average time for investigations :13 minutes
- Average time of the patient in pharmacy :11 minutes
- Departments where the waiting time is more are
Rheumatology,Urology,Paediatrics,Endocrinology,Neurology,Pain and medicine and
Pulmonary medicine departments.
- OPD with highest waiting
time:Rheumatology,Surgery,Paediatrics,Urology,Neurology,Cardiology,Hematology,Orthopaedics,Pain medicine departments.
- Departments where consultation time is very less
areUrology,Orthopaedics,Surgery,Dermatology,Gynaecology.

MAJOR CAUSES OF DELAY

FOR REGISTRATION COUNTER:-

Major causes of delay in the registration counter are due to many bottlenecks during the registration which are as under:-

- Registration form filling by the patient.
- Outpatient assessment form filled by patient during registration.
- Patient waits for their turn after filling the registration form.
- Receptionist read and then feed the form in the computer.
- Different queries which receptionist have to answer during feeding the form in the computer which takes lots of time.
- Poor handwriting of the patient which cannot be understood by the receptionist.
- Problem related to the server of the computer which goes slow many time.
- More rush comes at one point of time(between 10am to 1pm) on the OPD registration counter

FOR PATIENT WAITING AREA:-

- More rush comes at some points of time on the opd registration counter due to improper scheduling.
- Mainly the waiting is more due to the delay of the doctor to start the OPD at the morning time
- Waiting time is more due to improper scheduling of the timing of visiting the IPD and OT.

SUGGESTIONS:-

For the registration counter:-

- ✓ By the data it has been observed that It takes 11 mins for the billing. So to reduce the waiting time, the patient should be asked to come 10 mins prior to their appointment instead of 15 mins.
- ✓ There should be facility of second computer screen in front of patient where all information asked by receptionist feed directly into the computer which can eliminate the problem of filling form by the patient, delay due to searching for pen, bad handwriting by the patient, wait in queue after completing the registration form, faulty printed registration form and it also save the cost of paper incur in the form of various forms.
- ✓ The habit of patients is to come at the place where they can easily reach, that is, in the centre of the registration counter. Help desk is less accessible for the new patients because it is far as compared to registration counter and for old patients this place is more familiar. So a big help desk should be made at the centre of the registration counter with separating glasses which separate registration counter from help desk.
- ✓ We have to ask the reason of slow server from the IT department whether the problem lies in computer or the internet or the computer software and then act according to the situation.
- ✓ All the calls coming for the appointments should be strictly limited to call centre only and people in call centre should know the timings of the doctor when he is coming and going from the OPD. This will reduce burden of calls from the registration counter.

For OPD waiting area:-

- ✓ There should be a research conducted on the scheduling of the IPD and OT and efficient utilisation of OT so that OPD timings should not clash with them.
- ✓ Doctors in the OPD deals with the new and old appointed patients, patient who take random appointments, emergency patients, IPD patients, OT at the same time when he is

having his OPD timing. So either appoint new doctor or ask the doctor who has day off to attend the patients in the emergency, IPD, and if possible OT.

- ✓ The patient waiting time at OPD can be utilized, if not reduced by engaging the patient and its relatives in IEC activities about health related issues that can be delivered through a health educator. For this, the already existing facilities like LED screens can be put into use.



- ✓ A monitor can be placed in which the patient's number should be visible according to the consultation turn so that they get the information directly without troubling CCO.

The monitor will be of 12*6.

3 digit number monitor will cost Rs. 5000

4 digit number monitor will cost Rs. 6000



C = CALL
d = DRINK
b = BILL

letter to show service type



call number

NO.1 DRINK

NO.2 BILL

NO.3 CALL

K-336 Display



✓ As per the data reveals, the pharmacy utilization can be increased by :

After consultation, one prescription can be sent directly to the pharmacy and their packet can be made ready to pick. This can make the patient to just pick the packet. They do not have to wait at the pharmacy. This can help to increase its utilization.

PROJECT 2

TURN AROUND TIME OF PATIENTS IN PAEDIATRICS

(FOCUSED STUDY)

INTRODUCTION

OBJECTIVES:-

- To study and analyze the current turnaround time for OPD in paediatric department and identify the key factors in the delay which lead to increase the turnaround time in the departments.
- To suggest the solutions and methods that could be adopted to reduce the waiting time of the patient.
- To change the health seeking behavior of the patient and their caretakers during waiting.

METHODOLOGY:-

- A focused study Is done on paediatric department as per the requirement of the hospital.
- Cross sectional prospective study is carried out
- Quantitative method was used and patients were taken randomly
- The details of patients and time of his/her entry, the time for which the patient moves through various departments till either exit of the patient is noted.
- Tracking method is used in which the patients were traced from their entry into the hospital till their exit.
- After the data collection is done the data is analysed and evaluated to calculate the turnaround time of the patients and their waiting time in different departments.

SAMPLE DESIGN:-

Sample size of 75 patients were taken and these patients were followed and observed. The sample were taken randomly and the sample represents the entire OPD flow.

SOURCES OF INFORMATION:-

Primary sources:

- Tracking method

Secondary sources:

- Internet used as a source of theoretical information.

TOOLS AND TECHNIQUES OF ANALYSIS:

For data collection:

- Personal observation
- Interviews with staff
- Quantitative method of analysis

Study tool:MS-Excel sheet was prepared

For data analysis:done with the aid of MS-Excel sheet. The data was entered in sheets and then analysed with the help of graphs

FINDINGS:

- The study reveals the followings data:

average waiting time: 49 mins

average consultation: 14 mins

ANALYSIS

- The data collected from the department of paediatrics highlights the issue that there is a significant disparity between the appointment time given to the patient and the onset of the consultation by the doctor. The reasons for the delay accounts to various factors:

- the doctors go for rounds in wards and ICU's

- OPD starts late instead of the standard 10'o clock time

RECOMMENDATIONS:-

- For the analysis made, we recommend that a tracking system capturing the timings of the doctors should be devised and formulated
- During waiting for the consultation, health educator can help people to tell the basic health related issues to the mothers or the caretakers like about growth pattern, dietary chart etc.



- Toys like punching bag, white n black boards with markers attached to the wall or by a string as the toys kept earlier were taken by the patients unknowingly.
- cost of punching bag: 300 Rs.
white board: 600 Rs.

black board: 200 Rs



- Kids entertainment channels can be played in the LED as it makes the child busy watching it.

- Aquarium can be put in the department as it fascinates the child and make the child busy in it.

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