Summer Training at
Rajiv Gandhi Cancer Institute and Research Centre, Rohini, New Delhi
(April 3 to June 2, 2017)

Treatment and Discharge Turnaround Time in Day Care of RGCI and RC

By
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Under the guidance of
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MBA Hospital & Health Management
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Institute of Health Management Research
The IIHMR University, Jaipur
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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 **Ms. Priyambi Agarwal** has undergone summer training in **(Rajiv Gandhi Cancer Institute & Research Centre, New Delhi)** from 3rd April to 2nd June 2017.

The candidate herself/~~himself~~ completed the project assigned to his/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 him/her success in all her future endeavors.

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TO WHOMSOEVER IT MAY CONCERN

This is to certify that Ms. Priyambi Agarwal, MBA in Hospital and Health Management student, from the IIHMR University, Jaipur, has completed her training in this Institute in the department of Operations, from 03rd April 2017 to 02nd June 2017.

Her project was on **"Treatment & Discharge TAT of Patient in Daycare"**.

We wish her all the best for her future endeavor.

Swati Chopra
Manager – HR

Dr. Sunil Kumar Khetarpal
COO cum MS

ACKNOWLEDGMENT

For a management student, the power of knowledge is an attainable unless an element of practical observation and practical performance is not added. I consider myself fortunate for having been provided an opportunity to pursue my summer internship from Rajiv Gandhi Cancer Institute and Research Centre, Rohini, New Delhi**.** It is a great pleasure to express my sincere gratitude to **Dr. Sunil Khetarpal (COO & MS)** for providing me an opportunity to undergo training in this highly esteemed organization.

I would also like to thank my mentor **Dr. D.K. Mangal** for his able guidance and support, unflinching help and motivation at every step of completion of this report.

It is my genuine pleasure to express my very special thanks and gratitude to **Dr. Sushma Bhat (Manager- Operations)** whose dedication and keen interest had been solely and mainly responsible for the completion of this report. Her timely advice, meticulous scrutiny, scholarly advice and scientific approach has helped me to a great extend to complete this task. She has been a constant guiding light and source of illumination to me. It entirely goes to her credit that this report has attained this final shape.

I would also like to thank the **staff of Day Care Unit**, for providing me the necessary detail and clearing my doubts whenever required. I acknowledge them for taking out time from their hectic schedules and helping me in completion of my report.

Lastly, I would like to express my gratitude to my family and friends for being a constant source of inspiration for me.

DECLARATION

I do hereby declare that I am a student of 1st year, MBA in Hospital and Healthcare Management, IIHMR University, Jaipur, Rajasthan session 2016-2018.

I would like to state that I have carried out my Internship on the topic **"Treatment and discharge TAT in Day Care of RGCI & RC"** under the guidance of **Dr. Sunil Khetarpal** (COO & MS) and **Dr. Sushma Bhatt** (Manager- Operations) at Rajiv Gandhi Cancer Institute and Research Centre, Rohini, New Delhi for the partial fulfilment for the degree of MBA in Hospital and Healthcare Management.

This project work is my own and has not been submitted to any of the other Institute or University for the purpose of award of any degree or diploma.

Priyambi Agarwal

MBA- HM 21

2016-2018

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ABBREVIATIONS

S. No.	Abbreviations	Meaning
1.	CSSD	Centre sterile services department
2.	HDU	High Dependency Unit
3.	EUS	Endoscopic ultrasound
4.	EBUS	Endobronchial ultrasound
5.	IGRT	Image guided radiotherapy
6.	IMRT	Intensity modulated radiation therapy
7.	HOD	Head of department
8.	IAU	Internal assessment unit
9.	NABH	National Accreditation Board for Hospitals and Health care
10.	NABL	National Accreditation board for testing and calibration laboratories
11.	DICOM	Digital imaging and communication in medicine
12.	TPA	Third party administrator
13.	PSU	Public sector undertaking

HOSPITAL PROFILE AND OBSERVATIONAL LEARNING

INTRODUCTION

Rajiv Gandhi Cancer Institute & Research Centre is today counted amongst Asia's premier exclusive cancer centres that offer the unique advantage of cutting edge technology, put to use by renowned super specialists. This potent combination of man and machine ensures world-class cancer care to not only patients from India, but also from the neighbouring SAARC countries and others. We are fortunate to have taken care of over 1.95 Lakh patients since inception in 1996. The Institute has been accredited by NABH and NABL for its quality of services, and holds ISO 9001 and ISO 14001 certifications.

The Institute offers super specialized tertiary care services in Medical, Surgical and Radiation Oncology, streamlined into dedicated Site-Specific teams. Super Specialists at RGCIRC practice an organ specific multi-disciplinary approach to cancer diagnosis and treatment, with the Tumour Board acting as a second opinion clinic for cases that are more critical than others.

Spread over nearly 2 lakh square feet area, with a current capacity of 300 beds, RGCIRC is one of the largest tertiary cancer care centres in the continent. The Institute's outpatient services are spread on three floors with 57 consultation rooms, and well-designed Radiation Therapy areas. RGCIRC has 9 state-of-the-art well equipped modular Operation Theatres with three stage air filtration and gas scavenging systems, and 2 Minor Operation Theatres for Day Care Surgeries. The Institute has 27 bedded Surgical ICU and an 11 bedded Medical ICU. RGCIRC has a dedicated Leukaemia ward, and a separate Thyroid Ward. The Institute also boasts of an independent Bone Marrow Transplant unit that is credited with pioneering unrelated donor transplants, MUD transplants, and stem cell transplants.

RGCIRC is committed to bringing the benefits of cutting edge technology to its patients. The Institute offers best in class techniques such as whole-body robotic surgery, Intra-Operative Brachytherapy, True Beam (the next generation Image Guided Radiation Therapy), PET – MRI fusion, High Frequency Ultrasound, Tomosynthesis (first-of-its-kind revolutionary 3D mammography machine), Nucleic Acid Testing (for safest possible blood), and advanced diagnostic & imaging techniques, including PET CT, Circulating Tumour Cell testing, and Next Generation Sequencing. RGCIRC has executed strategic alliances with internationally renowned institutes such as Thomas Jefferson University. This has catapulted RGCIRC into a global league of select hospitals that are pioneers in new approaches to treating cancer.

RGCIRC has been ranked amongst 10 Best Oncology Hospitals of India (Week – Nielsen Survey 2014) and won the prestigious award for Best Oncology Hospital in India at Healthcare Achievers' Awards 2014.

MISSION

The mission of RGCIRC is to be the largest oncology care provider in India.

- To offer comprehensive services at an affordable price.
- Based on core values of quality, ethics and respect for all.

VISION

The vision of RGCIRC is to avoid and treat cancer by giving reasonable and available care of global benchmarks in India.

OUR LOGO

Rajiv Gandhi Cancer Institute and Research Centre
A Unit of Indraprastha Cancer Society
Registered under "Societies Registration Act 1860"

The philosophy behind the logo of Rajiv Gandhi Cancer Institute & Research Centre, is symbolic of the Crab, representing Cancer. The Crab has been universally accepted as a symbol of Cancer – the deadly disease. Encased in a shield, with a sword piercing through it, is graphically a symbol of a dreadful disease being kept at bay with the help of a shield as self-protection and swords as the weapon to destroy the enemy.

QUALITY POLICY

'We proudly declare our commitment to meet and exceed the requirements and expectations of our patients and society by providing coordinated, compassionate and high-quality health care services in the field of oncology. We provide a safe environment to enhance the outcomes of care and patient satisfaction regardless of their gender, disabilities, cultural or religious diversity.'

'We accomplish this through consistent compliance with international health care standard and effective implementation of our quality system.
We also accomplish through keeping the safety and satisfaction of the patients and staff in the centre of continuous improvement process of our services.'

"TO DO THINGS RIGHT FIRST TIME, EVERTIME AND WITH EMPATHY"

QUALITY CERTIFICATIONS AND ACCREDITATIONS

- NABH accreditation for hospital
- NABH accreditation for blood bank
- NABL accreditation for laboratory
- ISO 9001 Certificate for quality management system
- ISO 14001 Certificate for environment management system

FLOOR INFORMATION

OLD BUILDING

FLOOR	A BLOCK	B BLOCK
BASEMENT TWO	NA	NA
BASEMENT ONE	Laboratory, central sterile supply department, meditation room, bio repository unit.	Medical record department, administration, finance and billing, HR department, clinical research department.
GROUND FLOOR	Casualty, radiation oncology OPD, radiology including PET CT, counselling cell, homecare cell.	Kitchen, staff cafeteria, IPD pharmacy, cyto admixture unit.
FIRST FLOOR	Inpatient rooms and wards no. 101-121, minor OT	ECG, CT, MRI and nuclear medicine department.
SECOND FLOOR	In patient rooms 201-216, HDO	In patient rooms 251-260, thyroid ward, physiotherapy department.
THIRD FLOOR	PAC, operation theatres, surgical ICU, pain management clinic.	Bone marrow transplant unit, leukemia ward, medical ICU, bio engineering department.
FOURTH FLOOR	Maintenance department.	

NEW BUILDING

FLOOR	C BLOCK
BASEMENT TWO	IGRT (Radiation), purchase department, IT department, quality cell, material department, IGRT conference hall
BASEMENT ONE	Day care, molecular lab, cyto admixture unit, library.
GROUND FLOOR	Main lobby- front desk, OP cash counter, central report dispatch counter, pre-admissions- counselling desk, public relations officers cabin, pharmacy, sample collection room, IAU, surgical oncology OPD, preventive oncology OPD.
FIRST FLOOR	Day care
SECOND FLOOR	IPD rooms from 2274 to 2291, Isolation room
THIRD FLOOR	IPD rooms from 2351 to 2374
FOURTH FLOOR	IPD rooms from 2451 to 2474, DMS office.

SERVICES AVAILABLE

CLINICAL SERVICES

MEDICAL ONCOLOGY

- Medical oncology (All solid tumors)
- Haemato – oncology
- Paediatric Haemato oncology
- Bone marrow transplant

SURGICAL ONCOLOGY

- Uro onco surgery
- Gynae onco surgery
- GI onco surgery
- Head and neck onco surgery
- Breast onco surgery
- Bone and soft tissue sarcoma onco surgery
- Brain and spine onco surgery
- Reconstructive surgery
- Paediatric onco surgery
- Robotic onco surgery

RADIATION ONCOLOGY

- IGRT
- IMRT
- Brachytherapy
- Nuclear medicine
- Day care
- Preventive oncology
- Home care
- Dental clinic

IMAGING SERVICES

- PET CT
- CT scan
- CT guided liver, lung biopsy
- Bone scan
- MRI
- Gamma camera
- Ultrasound
- Digital X-ray
- Fully digital mammography
- Breast tomosynthesis
- Breast biopsy
- Colour Doppler

- Trans Arterial Chemo Embolization (TACE)
- RF ablation of tumours

INVESTIGATIVE PROCEDURES

- Bronchoscopy
- Biopsy
- Colonoscopy
- Upper GI endoscopy
- Virtual bronchoscopy
- EUS
- EBUS

LABORATORY SERVICES

- Cytopathology
- Clinical pathology
- Clinical biochemistry
- Haematology
- Clinical microbiology and serology
- Histopathology and immunohistochemistry
- Molecular biology

SPECIALIZED SERVICES

- Blood bank
- Pain clinic
- Rehabilitation services
- Palliative care
- Psychological counselling

MODE OF DATA COLLECTION

Data collection involved discussions with the HODs on the managerial issues and talking to the other staff and going through the records.

Sources of Data

- **Primary**

- By interacting with the HODs, executives, Doctors and other employees of the hospital.
- By interacting with the patients and their attendants.
- Through direct observations.

- **Secondary**

- Through registered records
- Through website of the hospital

- Literature available about the hospital like magazines, pamphlets, brochures, CDs, written documents

GENERAL FINDINGS

1. FRONT OFFICE

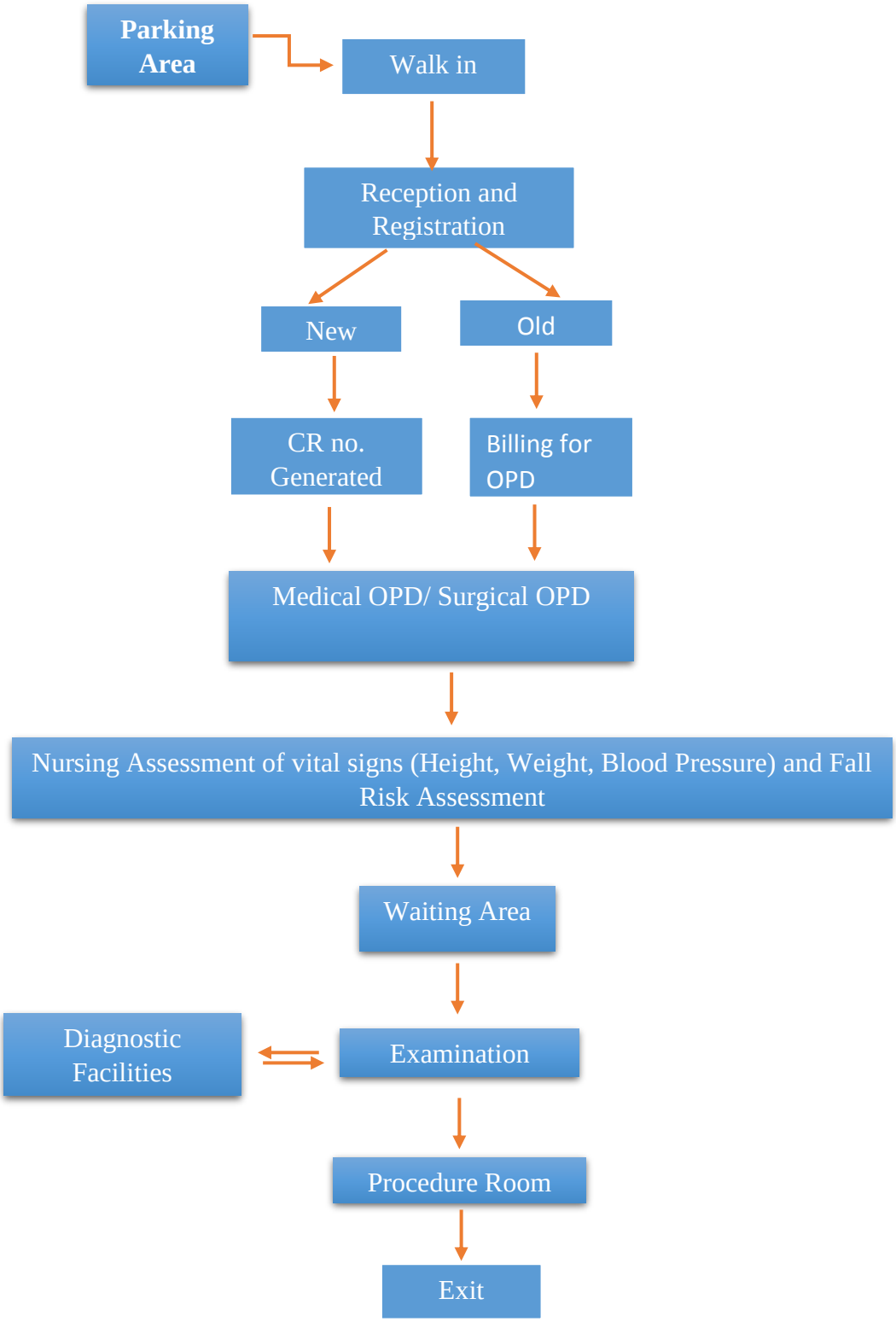
- **First contact point** between the patients / their attendants coming to the facility.
- Gives directions to them about the locations of various departments.
- Helps in planning timely discharge a day before by inquiring about the same from the concerned consultants.
- Performs in patient and out- patient registration.
- Does appointment scheduling of the patients.
- Insurance management.
- Does registration and scheduling of preventive health check-ups.

Challenges

- Shortage of staff.
- Huge rush during peak hours such as morning.

2. OUT PATIENT DEPARTMENT

- Rajiv Gandhi Cancer Institute has two OPD's – Medical OPD and Surgical OPD.
- Each OPD has a procedure room and its own front desk.
- In case of a new patient registration is done through a valid PARAS system and a CR no. is created and a smart/cash card from cash count is given to the patient.
- For all new patients post registration patient is directed to IAU at ground floor where doctors and nursing team takes medical history, do physical examination and check vitals etc thereby reducing the workload of the senior doctors.
- After Initial assessment patient is directed to the concerned OPD i.e., medical OPD or surgical OPD where super specialist doctor do further assessment of patients condition and accordingly advice investigation, treatment on OPD or IPD basis as may be the case.
- In case of old patient, for revisit patient is required to take an appointment for the particular doctor at the appointment desk.


Parking Area
Walk in
Reception and Registration
New
Old
CR no. Generated
Billing for OPD
Medical OPD/ Surgical OPD
Nursing Assessment of vital signs (Height, Weight, Blood Pressure) and Fall Risk Assessment
Waiting Area
Diagnostic Facilities
Examination
Procedure Room
Exit

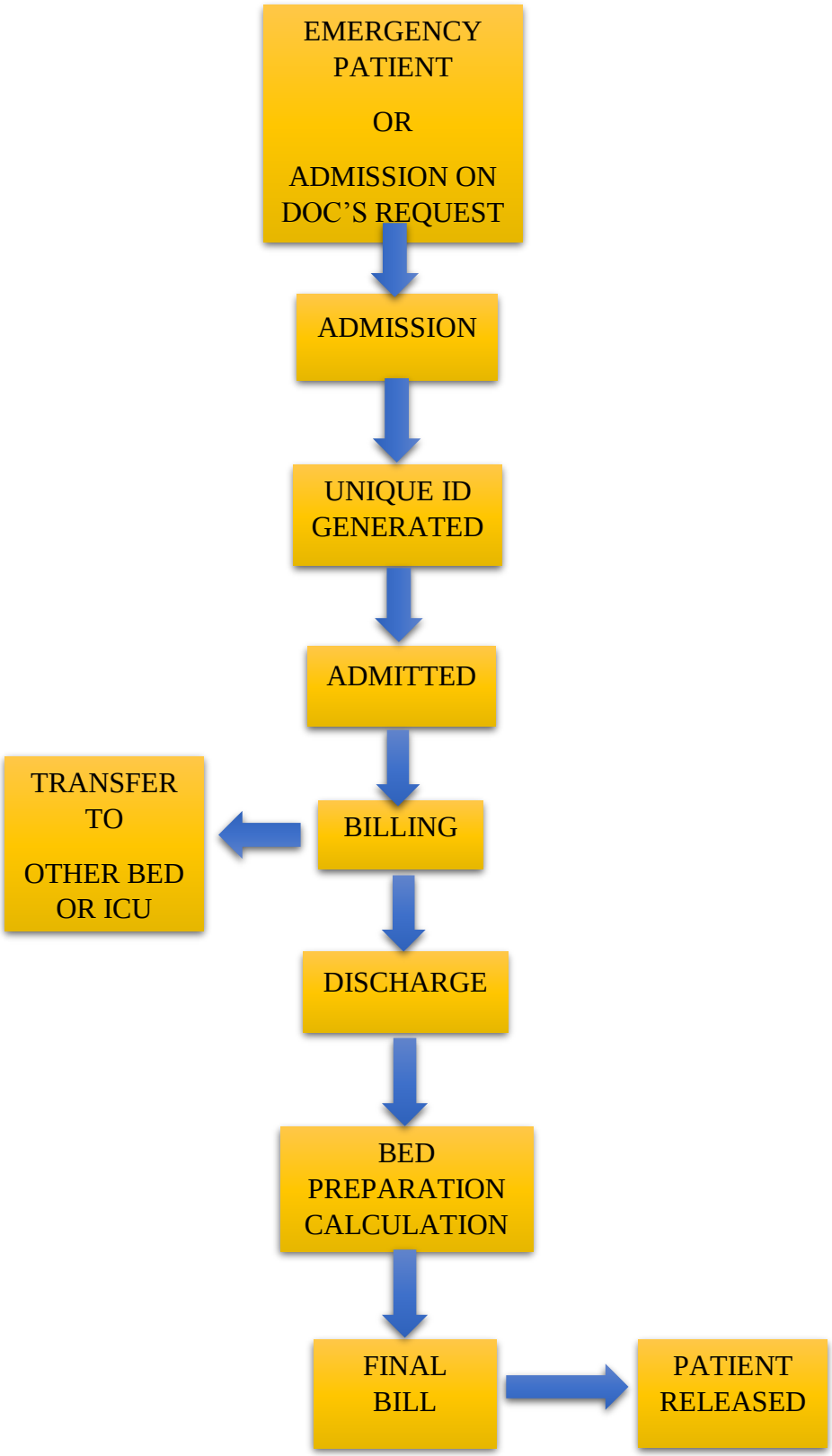
3. IN PATIENT DEPARTMENT

ADMISSION PROCEDURE

- Admissions may be in two ways
- Through emergency department
- Through OPD
- If doctor decides patient requires an Inpatient treatment, patient will then be issued an admission slip with the details of the kind of treatment and expected duration of stay of the patient.
- Doctor also informs patient about the estimated patient on the given admission
- Patient then proceed to the admission counter situated on the ground floor of new building. Admission staff allots the room / bed according to the patient's requirements, if available.

- IPD is distributed over four floors (1^{st} – 4^{th}) in the old and new building of Rajiv Gandhi Cancer Institute including a total number of 302 beds.
- Every bed is provided with oxygen supply, suction facility and nurse call facility.
- The types of rooms available at RGCI & RC:
    - Deluxe suite
    - Deluxe room
    - Private room
    - Semi private deluxe (2 bed)
    - Semi private (4 bed)
    - Economy special
    - General ward
- Every floor has a central nursing station with
    - Information Board covering:
        - Designation & Contact numbers of
            - Duty doctor
            - Administration Staff
            - Ward Secretary
        - Nurses' names with shift timing and designation(8-10 nurses per shift)
    - Crash Cart parked next to the nursing station
    - Computer on wheels (COW) - 2
    - Cupboards with forms- down time form, investigation track sheet, blood request form, PAC sheet, informed consent, inventory files and registers

INPATIENT WORKFLOW



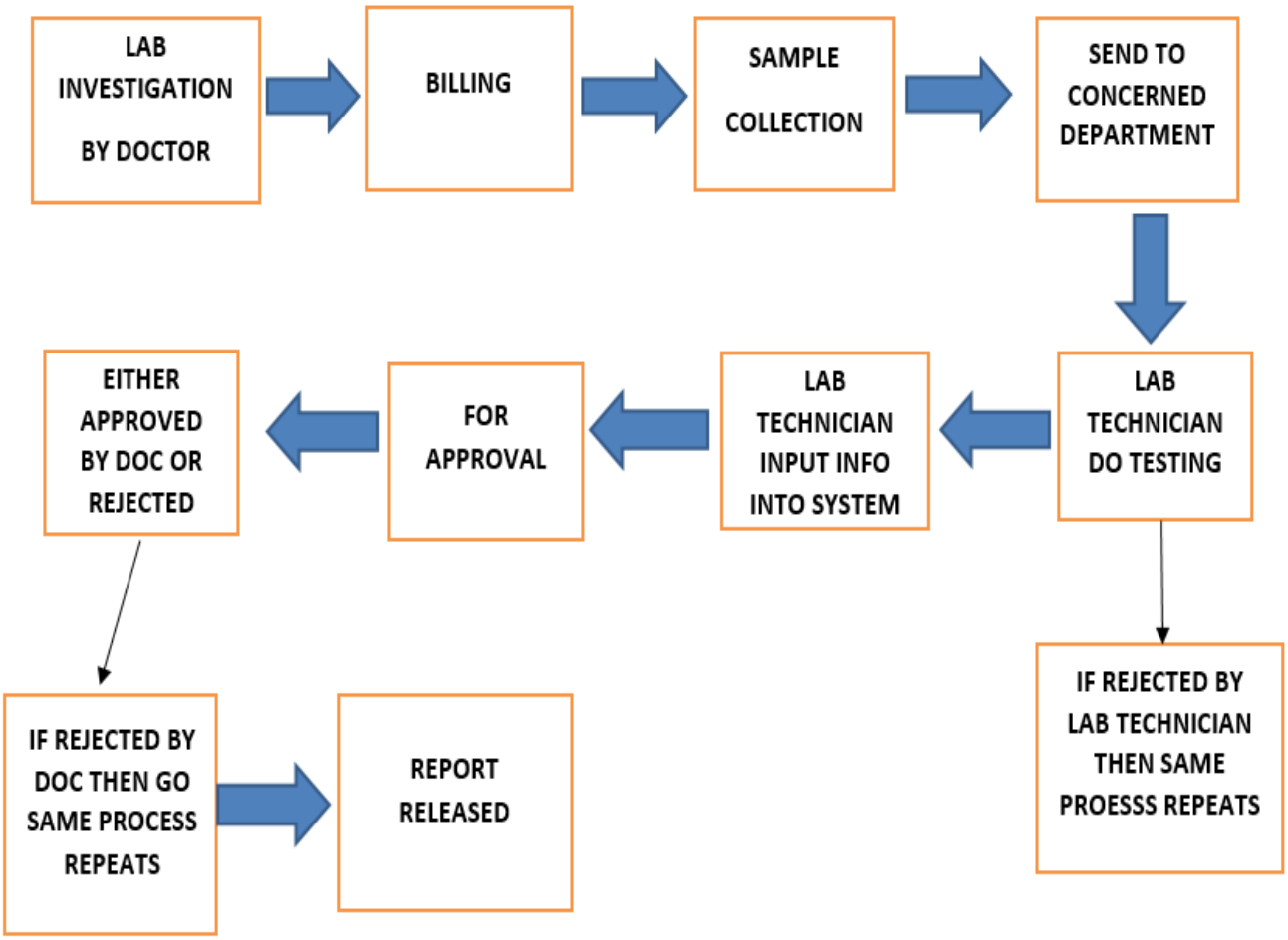
4. DEPARTMENT OF LAB SERVICES

'The department of Laboratory Services plays an important role in supporting the RGCIRC Mission of patient care by providing high-quality services for diagnosis of cancer patients. An ISO 9001 certified lab opens 24 hours a day. It is a high-tech lab with fully automated instrument which are directly interfaced with PARAS system. The prime step to a good clinical practice in cancer care is accurate and early diagnosis which has huge therapeutic implications. Our team of highly trained doctors, medical technologists and other personnel staff assure rapid TAT and efficient reporting of test results.'

The Laboratory Services is further organized into following Deptartments :

1. Histopathology and Cytopathology.
2. Haematology.
3. Microbiology.
4. Transfusion Services.
5. Biochemistry.

LAB WORKFLOW



5. CSSD

The department provides clean and sterile supplies which help in reduction of infection and improving the quality of care. The department provides infection control by educating staff on biomedical waste management, by reviewing surveillance data and identifying areas of intervention, by identifying patients or staff with communicable/ potentially communicable infections and institute appropriate measures in each case.

6. BIOMEDICAL ENGINEERING

The department installs commission and maintains all the medical equipment in an efficient and cost-effective way and makes technical appraisal and recommendation for purchase of new equipment.

7. FINANCE

The department provides accurate relevant and timely financial information necessary in making right business plan and decisions

8. INFORMATION TECHNOLOGY

The department provides IT value to end users with respect to their day to day function. The department provide services to various departments for IT infrastructure, hardware and network, antivirus services, internet services.

9. FOOD AND BEVERAGE

The department provides food and beverages to the esteemed customers and staff as well. The department performs daily audits of the store and kitchen areas, take rounds of the entire service area with and after the service timing, monitoring of services and sales at staff cafeteria and visitor's cafeteria, executive/doctors dining hall.

10. PHARMACY

The goal of the pharmacy is to procure and provide medicines and surgical items to the patient. The pharmacy serves various areas of hospital like day care, ICU's, OT's, IPD's and biomedical. The department services include procurement and providing medicines to the patient.

The department also delivers medicines to the ward like day care and collects the billing amount from the attendant there itself.

11. HOUSEKEEPING

To achieve defect free room with 100% hygiene and cleanliness to maximise patient satisfaction with minimum cost. The department performs activities like cleaning, providing room amenities and pest controlling and waste disposal.

12. QUALITY DEPARTMENT

This department functions to maintain and perk up the standards, Quality Assurances (QA), the activity of providing evidence needed to establish quality in work and the activities that require good quality are been performed effectively. All those planned or systematic actions necessary to provide enough confidence that a product or service will satisfy the given requirements for quality.

13. HUMAN RESOURCE DEPARTMENT

To ensure availability and retention of quality talent to meet organizations goals and objectives. Overall growth and development of employee's orientation and functional training. The department looks into matters like attendance and leave management, appraisal and promotion process, medical benefits, employee welfare programmes, payoff management, grievance handling, medical by laws.

14. MEDICAL RECORD

Medical record department is the custodian of all the discharged/ expired health record charts. The MRD staff ensures confidentiality, preservation, storage and retention of the documents.
The department deals with record collection, codification, storage, analytical evaluation and retrieval of records if needed.

15. RADIOLOGY DEPARTMENT

It is a well-equipped department with state-of-the-art technology which compares with the best in the world. A fully functional PACS with secure private cloud storage in a complete digital environment for all our diagnostic imaging services makes it a unique facility.

SPECIALITIES OF RGCI & RC

1. SURGICAL ONCOLOGY

The Department of Surgical Oncology is a fast-developing speciality at RGCI & RC. The Department consists of units:

- Head and Neck Services
- Breast and Thoracic Services
- Orthopaedic Services
- Uro Gynae Oncology Services
- G I Oncology Services
- Neuro-surgical Oncology Services
- Reconstructive Services

Surgical Oncologist can give special surgical ability in cases new to general specialists. The Surgical Oncology Department goes for the accompanying:

•To enhance personal satisfaction stressing on multimodal treatment
•Practice prove based medication
•To execute insignificant horribleness and almost zero mortality which is adequate by any International standards
•Careful preoperative observing and great readiness and postoperative care'

The personnel of Surgical Oncology comprise of 8 Senior Consultants in different subspecialties, 10 Consultants, Clinical Assistants notwithstanding Residents and DNB understudies.
Surgical Department has 8 noteworthy Operation Theatres, 3 Minor OT's, 28 had relations with Post-Operation Ward and Extensive Intraoperative and Post-operation checking offices round the clock. Post-Operative care is given by specialists and master medical caretakers.

2. RADIATION ONCOLOGY

Radiation Oncology refers to the treatment of cancer patients using radiation, which could be X-rays or gamma rays or electrons. Rajiv Gandhi Cancer Institute & research centre with its tradition of quality and excellence offers comprehensive and modern radiotherapy services it the patients.
The hospitals radiation oncology department is located on the ground floor, in the A block of the hospital and 2nd basement in the C block. the department is equipped with linear accelerators, stimulators, high dose rate remote after loading brachytherapy system, dedicated treatment planning computers and mould room to fabricate lead shields and templates in house. The department has been intricately networked to CT scan and MRI with DICOM image transfer capability that makes it one of the best radiation oncology hospital in India.

Intensity Modulated Radiation Therapy (IMRT)

Rajiv Gandhi Cancer Institute & Research Centre boasts of being the first cancer centre in the country to put IMRT into clinical practice. Intensity Modulated Radiation Therapy (IMRT) is an approach to radiation therapy that delivers a high, conformal dose to the tumor while restricting the exposure to surrounding normal tissue.

Image Guided Radiation Therapy (IGRT)

The Department is equipped with Image Guided Radiation Therapy (IGRT) equipment - ARTISTE from Siemens. IGRT combines the traditional radiation treatment with a simultaneous cone beam CT scan to allow for greater precision and accuracy when targeting and treating tumors.

3. MEDICAL ONCOLOGY

Department of **Medical Oncology** at Rajiv Gandhi Cancer Institute & Research Centre offers state-of-the-art treatment modalities, including autologous and allogeneic Bone Marrow Transplant. There is a substantial patient workload, which is taken care by highly qualified and experienced Medical Oncologists, Pediatric Oncologists and Hematologist, who works full time for this institute. Facilities are available to undertake outpatients' Chemotherapy in specialized day care units. The hospital's medical oncology department includes specially trained nursing staff that assists in administration of Chemotherapy, in both Day Care as well as Inpatients. Chemotherapy Drug mixing is done at a separately designated area, under laminar air flow, to ensure patient & staff safety to prevent health hazards. In order to make administration of chemotherapy safe and more patient friendly, use of central catheters and ports is a routine in the department.

4. PEDIATRIC HEMATOLOGY ONCOLOGY

The Department of Pediatric Cancer treatment and Oncology at RGCI & RC, is unique in India, as it offers comprehensive Oncology Care to all children up to the age of 18 years. It is a place, where doctors send some of their most challenging and sick patients. The Department has a dedicated team of experts in the field of Pediatric Hematology / Oncology. The team constituted by experienced **Pediatric Oncologists**, Hematologist, Pediatric Oncosurgeon, Radiation Oncologist, Pediatric Oncology Residents and Nurses, Child Psychologist and Playroom Teachers' who works hard to ensure, that best care is delivered to every child.

Children with all types of Hematological and Solid Organ Malignancy receive specialized Oncology services here. The various type of Cancers treated in the Department includes Leukemia (ALL, AML, CML), Lymphomas (non-hodgkin’s and hodgkin’s), as well as all Pediatric solid Tumors like Neuroblastoma, Wilms Tumor, Bone and Soft Tissue Sarcoma, Brain Tumor, Hepatoblastoma, Testicular and Ovarian Tumors etc. Patients with different Hematologic problems like severe Aplastic Anaemia, MDS, Hemolytic Anaemia’s, Chronic ITP, etc. are also managed.

A STUDY ON

Treatment and discharge Turnaround time in Day Care

AT

Rajiv Gandhi Cancer Institute and Research Centre ROHINI, NEW DELHI

INTRODUCTION

Cancer, a term that brings out a stun in the nerve endings of each individual touches each nation on the planet. Cancer is one of the illness influencing more than 10 million new cases for each year around the world. In India, commonness of disease is evaluated to be around 3.5 million, with 8, 50,000 new cases and 5, 00,000 deaths for every year. Growth is the second biggest driving reason for death and inability all around the globe. Number of individuals biting the dust because of cancer is more than kicking the bucket from every one of the instances of AIDS, tuberculosis and intestinal sickness. As indicated by World Cancer Report, there is enormous occurrence rate of cancer all through the world and it might reach over 20 million by 2030 (WHO, 2008). In creating nations there is the greater part of new disease patients and 66% of cancer related deaths that happens. Disease has turned out to be one of the significant reasons for deaths in India, consistently around 0.4 million deaths happen in India. In India because of disease (Government of India, 2010), it has been evaluated that around one million new instances of cancers will be analysed by 2018 and about 0.67 million individuals are relied upon to bite the dust. Carcinoma of oral cavity and lungs in males and carcinoma of cervix and breasts in females represent over half of all malignancy deaths in India (Government of India, 2005). Greater part reasons for malignancy are identified just in the propelled stages, when they are hard to follow. With an expected occurrence rate of 8 lakh new cases each year and pervasiveness of 2.4 million cases, the malignancy treatment advertise needs high consideration.

The Indian oncology advertise with the Rs.10 billion is required to develop at a rate of 21 percent for the up and coming five years, a committed oncology setup inside doctor's facilities are in the pipeline to cater around 2 million cancer patients. With such developing number of patients looking for administer to disease has made healing centres understand that treatment of cancer is significant area for growth. Today the mindfulness about cancer has expanded and individuals will go to perceived associations for cancer treatment. Individuals, especially in urban India are perceiving the reality gradually that cancer patients can have an ordinary existence, much the same as it is there with whatever other chronic infection. Thus, more number of individuals will experience treatment, demonstrating a positive pattern.

CHEMOTHERAPY-

Chemotherapy is the use of chemotherapeutic agents or anticancer drugs to destroy cancer cells or may aim to prolong life or to reduce symptoms. There are over 50 different chemotherapy drugs. Some are given as single drug but often involves combination of drugs. The type of chemotherapy given depends on type and stage of cancer. Chemotherapy may

also be given with other types of treatment such as surgery, radiotherapy, hormonal therapy, or a combination of these.

Principles of chemotherapy

1. The first and most crucial decision is whether active specific anti-cancer treatment (surgery, chemotherapy targeted therapy or radiotherapy) is appropriate or not. Factors involved in this decision will include performance status and the patient's own wishes. Patients will also receive palliative/supportive care alongside active treatment, or palliative/supportive care alone where appropriate.
2. Most patients referred to the Unit have disease which is clearly inoperable, but there are exceptions. A key early decision, therefore, is to consider whether there is a possibility that surgery might be appropriate. The decision whether to make a surgical referral can be a difficult one and must be made at consultant or senior registrar level in consultation with radiology colleagues.
3. Where chemotherapy, targeted therapies or radiotherapy is appropriate, the intensity, type and duration of treatment depends on performance status, extent of disease and associated co morbidity. Details of investigations and pre-treatments are contained in individual protocols and these should be checked carefully for each patient on treatment. All patients for chemotherapy, targeted therapy and radiotherapy must sign a consent form after reading and having time to ask questions relating to appropriate written and verbal information.
4. Patients receiving anti-cancer treatment who have progressive disease should discontinue therapy. Standard practice is to assess chemotherapy response using CT after every 2-3 cycles of chemotherapy and at 6 weekly intervals while on treatment.
5. Treatment should also be discontinued if the toxicity is proving unacceptable, even if there is no evidence of progressive disease.

DAY CARE ONCOLOGY

- The Day Care Unit gives the care to individuals who require treatment as day cases and don't require remaining in hospitals as inpatients. Its primary capacity is to evaluate and treat the patients who are getting chemotherapy.
- It gives care to the individuals who are experiencing chemotherapy and need help with identified with their treatment and condition.
- The objectives of day care unit are to enhance quiet wellbeing and prosperity, diminish medicinal services consumptions, and to give brilliance in administration conveyance and solace to patients.
- The cost of methods performed in day care unit is significantly lower when contrasted with patient conceded in an inpatient department, which is for the most part because of the distinction in infrastructure and staffing necessities.
- The treatment methods at day care are performed around the same time and don't require overnight remain. This thus offers greater consistency in the planning. It is to a great degree helpful for the youngsters and the elderly as they don't need to rest in an unfamiliar environment.

GENERAL FINDINGS

- Day Care is situated on First Floor and First Basement of C block of the new building.
- Day care unit is a 22-bedded unit in the new building for the patients who are admitted for chemotherapy or for observation following under minor procedures.
- The Oncology day care is open from Monday to Saturday.
- Timings: - 8:00 AM to 8:00 PM.
- Before chemotherapy is administered the patient is assessed to make sure that he/she understands and consents to the planned treatment. Blood tests are performed to ensure that their levels are at the required limits.
- The time taken to administer chemotherapy varies, some may only take a few minutes while others may take up to a few hours.
- The services that are provided in day care unit are: - All type of Chemotherapies administered, Supportive care, Blood transfusion, Observation following minor procedures.

PATIENT REGISTERED

There are three type of patients that come in the day care.

- **CASH PATIENTS**: - Patients who pay for their treatment and investigations out of their pocket are considered as cash paying patients. They are charged as per the schedule of charge for the cash category.

- **CREDIT PATIENTS**: - Patients who have been referred by the empanel PSU's and form health insurance companies (TPA's) come under this category.
    A. Patients from PSU: The patients are requested to produce an authorization letter from the company, which must be handed over to the billing at the time of admission.
    B. Health insurance beneficiary: Cashless services for all planned medical treatment are subject to pre-admission authorization. In all the credit cases it is responsibility of the beneficiary to inform and procure credit authorization from concern PSU/TPA.

- **ADVANCE PATIENTS**: - Patients of this category are required to deposit an advance cheque with the billing department. Services can be availed till the balance in the account.

REVIEW OF LITERATURE

A thorough literature review reveal focusing on prior researches related to the topic of the study which gives a strong foundation on to base knowledge thus the survey of literature is one of the vital parts of any research endeavour.

As proposed by Santibáñez, Pablo, and et al. this review was embraced to address huge and expanding challenges in regard to the utilization of assets in the Ambulatory Care Unit (ACU) in the Vancouver Centre of the British Columbia Cancer Agency (BCCA). Doctor's office space, administrative support and examination rooms were frequently hard to come by on occasion of pinnacle volume prompting packing, deferrals, and concerns in regard to patient fulfilment. The three disease programs i.e. therapeutic oncology, radiation oncology and surgical oncology direct patient arrangements inside the ACU. Arrangement sorts includes new patient, development and cross program counsels. Normal volume at the VC was 200 patient visits for each day amid the year 2007-08. The ACU additionally fills in as a scholastic educating and research focus. BCCA experts prepare huge quantities of therapeutic understudies, inhabitants and colleagues, and in addition understudies and assistants from numerous different nations. Furthermore, an expanding number of patients take an interest in clinical trials, which brings about popularity for space and staff. ACU arrangements are regularly unpredictable and include oncologists, inhabitants and restorative understudies, notwithstanding different clinicians including medical caretakers, dieticians and advocates.

In this paper the authors have considered a few operational qualities of a disease mind outpatient benefit, the majority of which have been examined some time recently. Rather, they dissected the concurrent effect of booking, operational, and asset designation changes on framework execution. Further, study is recognized by the additional multifaceted nature of dealing with the simultaneous operation of a few facilities, and the preparation of colleagues, inhabitants and medicinal understudies amid patient counsels. With an expanding pattern towards the utilization of wandering consideration offices to give medicinal services benefits, the creators trust this review is especially convenient.[1]

As indicated by Bohni Lianga, Ayten Turkcana, Mehmet Erkan Ceyhanb, Keith Stuarth a discrete reproduction model was produced by Department of Mechanical and Industrial Engineering, North-eastern University, Boston, MA 02115 h Lahey Hospital and Medical Center, Burlington, MA 01805, to display the mind-boggling stream of chemotherapy patients in oncology facilities. The model considered various patient classes with fluctuating routings and asset necessities, unpunctual landings, vulnerabilities in administration and treatment lengths, add on, and cancelations. The model was utilized to assess the execution of a genuine centre and to test elective operational choices to enhance framework execution. Prior recreation ponders, which proposed changing the landing rates to have a smoother workload, did not build up any booking technique to discover a calendar that considers the conditions amongst oncologist and chemotherapy arrangements. Lahey Hospital built up an improvement model to decide an organized arrangement plan for oncology and mixture facilities. The proposed booking technique decided the quantity of oncologist and chemotherapy meetings with the target of limiting

the deviation amongst low and high use schedule openings. The effect of the proposed planning technique was tried utilizing the recreation show that consolidated a few instabilities of a genuine centre condition.[2]

- ***Delay in discharge and its impact on unnecessary hospital bed occupancy.***

  Delayed discharge or 'bed blocking' are terms used to describe the inappropriate occupancy of hospital beds. Delay in discharging surgical patients from hospital is a long-standing and common problem. Delayed discharges have an impact on hospitals' ability to cut waiting lists and deliver healthcare effectively and efficiently. In acute care hospitals, prolonged length of stay (LOS) not only increases cost, but is also associated with increased rates of complications. LOS is being used to analyse surgical performance as part of efficiency drives and financial pressures have emphasised the importance of expeditious hospital discharge. Identification of the barriers to timely discharge may help direct efforts towards reducing unnecessary hospital stay.

  Length of stay for general surgical patients is influenced by many variables. These variables include direct and indirect medical influences such as waiting for investigations and making home arrangements.

  Despite a multidisciplinary approach to patient healthcare and discharge planning, it was anecdotally noted that surgical patients, particularly the elderly, under the care of one surgical team, were experiencing prolonged stays for reasons which were largely avoidable and not directly related to surgical activity.

  With the aim of quantifying this apparent effect, a study was performed to prospectively collect data on LOS and identify the number and cause of days lost for patients under the care of a single surgical unit.[3]

- ***Redesigning cancer care***

  Cancer patients in the UK face long delays before treatment and their survival rates compare badly with those in the US and many European countries. As a response to this, the Department of Health produced the National Cancer Plan, which ranges from prevention to palliative care, and made cancer networks responsible forimprovingcare.Asacentralpartofthis strategy, the cancer services collaborative was set up, initially to improve care in specific areas, and then throughout the NHS. The collaborative involves nine cancer networks,at least one in each English region (see box), covering a population of 14 million, and coordinated by the NationalPatients'AccessTeam.Thisteamispartofthe NHS's Modernisation Agency, funded by the Department of Health to implement various aspects of the NHS's National Plan. In each network we funded a programme director and a facilitator for each of five tumour types: bowel, breast, lung, prostate, and ovary. We also appointed clinical leads to work with the facilitators, and bought clinical sessions when needed. The networks are autonomous but have to submit monthly progress reports to the national coordinating team. Altogether there are a total of 43 cancer specific project

teams in the nine networks. We encourage shared learning with two day residential meetings every six months, a web based list server, and regular teleconferences. The collaborative aims to implement change through an "evidence based" approach. Traditional research methods are difficult to apply to rapidly changing complex healthcare processes, so we decided to use an "improvement science" model. The key components of this are: x A flexible system of testing, adapting, and implementing change x A definition of "best practice" to give project teams something to aim for x A series of plan-do-study-act cycles x Shared learning between project teams.[4]

RATIONALE

Reduction in discharge delay improves client satisfaction and hospital efficiency. The study was conducted to address the steps under standard delay.

RESEARCH QUESTION

a) What are the barriers and challenges in discharge process and what are the reasons behind it?
b) What can be the solutions to improve the discharge process?

OBJECTIVES.

1. To study patients discharge process in the hospital to identify main reasons of discharge delay and the root causes of these reasons.

2. To suggest key strategies to overcome the delay in discharge process.

RESEARCH METHODOLOGY

The type of study performed in Rajiv Gandhi Cancer Institute and Research Centre was observational and analytical. Firstly, the study was based on observations where we observed the main reasons behind the delay in discharge process through bed management system. Secondly, after the observation a questionnaire was formulated for 100 patients (Convenience non- probability sampling) to find out the time taken in a particular procedure that a patient follows in day care to capture the delays in the whole process of day care.

SOURCES OF DATA:

- Primary data: Direct Observation, survey in the form of questionnaire
- Secondary data: medical records, website of the hospital, medical journals

PROCESS: PATIENT DISCHARGE

Among various factors affecting health care systems, discharge process is one of the important factors related to patient satisfaction. It is the process that occurs when the patient leaves the facility. As the final step in the hospital experience, the discharge process is likely

to be the well recommended by the patient.

Mogli defines, "discharge as the release of a hospitalized patient from the hospital by the admitting physician after providing necessary medical care for a period deemed necessary".

Sakarkar defines, "discharge as the release of an admitted patient from the hospital."

Discharge process is defined as the process of activities that involves the patient and the team of individuals from various discipline working together to facilitate the transfer of patient from one environment to another.

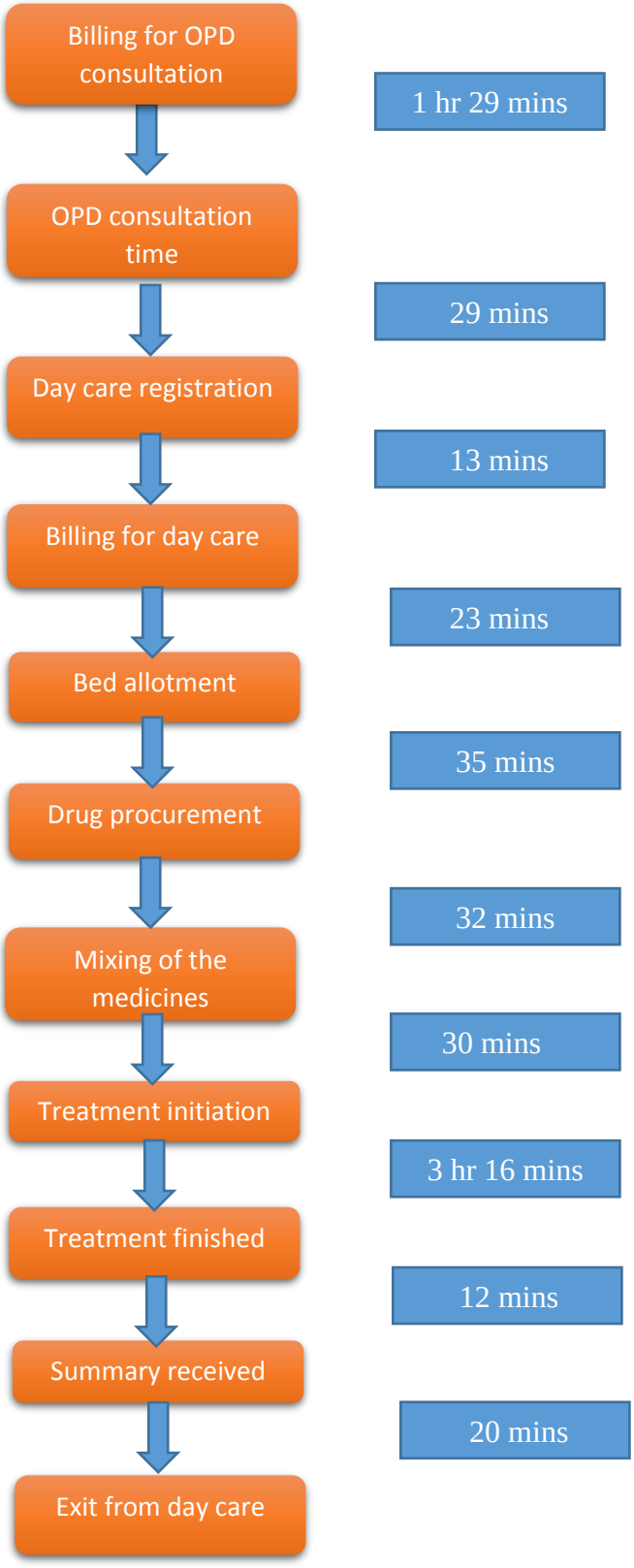
Discharge planning is essential to the concurrent patient care review system conducted as a part of hospital's utilization management effort. If discharge planning is delayed, patient's stay can be unnecessarily be extended. Discharge planning is centralized, coordinated effort to ensure that each patient has a planned program for needed continuing care and follow -ups. When it comes to the discharge subject, it's the moment where the patient pays for the services enjoyed in the hospital and the management receives for the same and there occur some delay which causes patient to wait longer hours for discharge, but for the satisfaction of the patient, minimising the time consumption in billing is again an important factor. Billing and discharge process documents are vital for any hospital. Its importance encompasses the Clinical aspect, Financial aspect, Scientific database for research purpose, Administration both retrospective and prospective, help to improve the functioning of the hospital as well as to make many administrative decisions and these documents are also legally important. Therefore, this study on discharge is undertaken with the aim of giving better services for the patient satisfaction.

By earlier findings it is found that there are some delay in the discharge process, so this study is to find out the reason which causes delay in discharge process and leads to longer waiting hours for patient to leave the hospital.

ANALYSIS AND INTERPRETATION

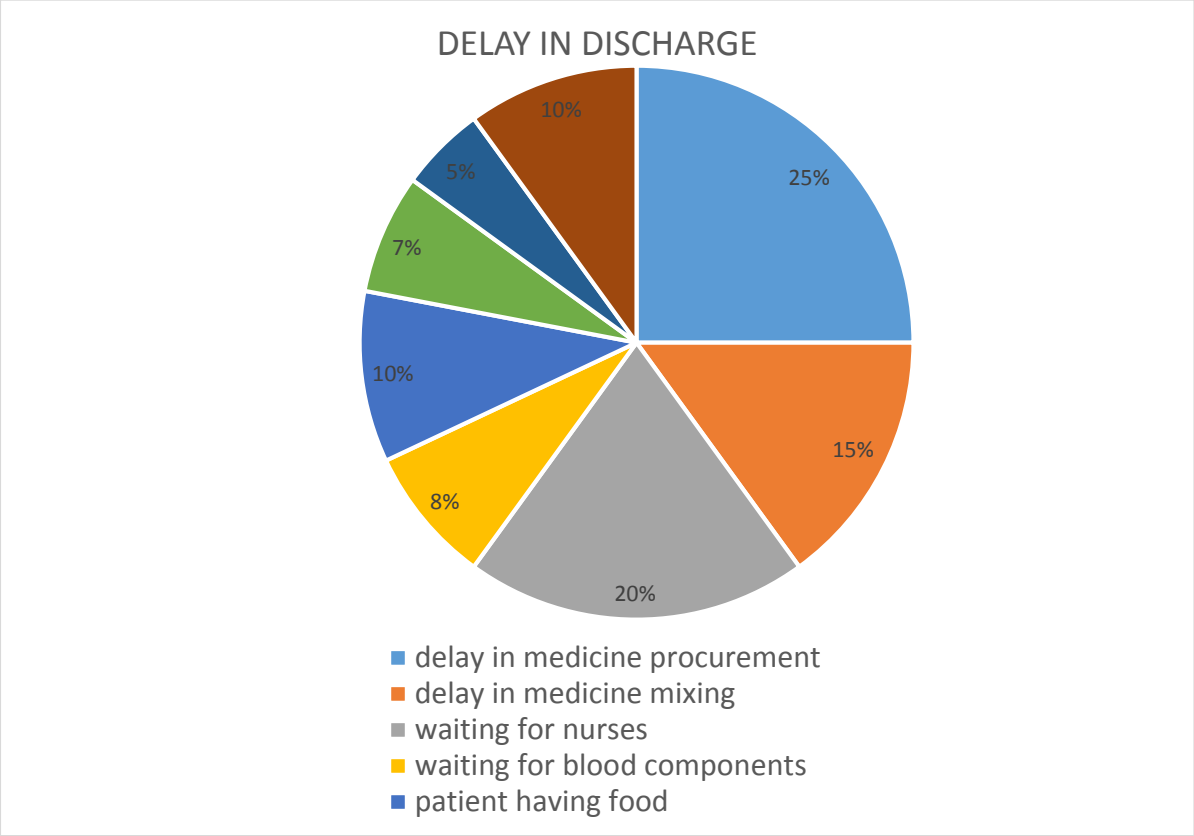
Keeping in mind the objectives of the study, the surveys were being done & following Interpretations were being drawn:

1. **Process flow showing average time taken between the steps is as follows:**



2. CAUSES OF DELAY AND ITS CONTRIBUTION TO OVERALL DELAYS

REASONS FOR DELAY	PERCENTAGE OF OVERALL DELAY
Delay in medicine procurement	25%
Delay in medicine mixing	15%
Waiting for nurses	20%
Waiting for blood components	8%
Patient having food	10%
Patient taking rest	7%
Patient gone for radiotherapy	5%
Others	10%

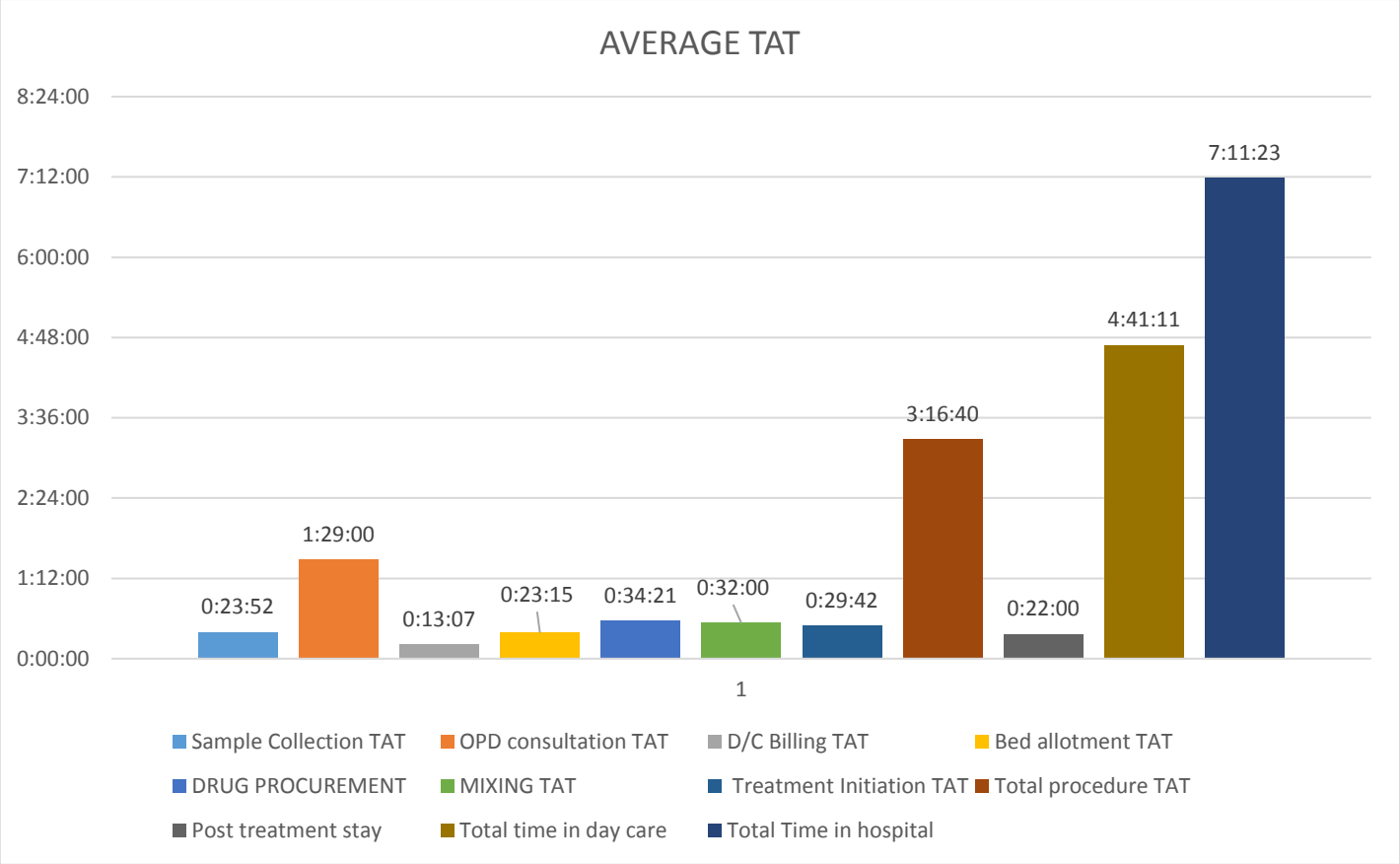


It is evident from the above pie chart that out of 100 patients, 25% patients faced delay in medicine procurement, 20% had to wait for nurses to initiate the treatment, 15% faced delay in medicine mixing, 10% delays were faced due to patient having food, 8% delays were faced waiting for blood components in case of blood transfusion, 7% due to patient having rest post treatment, 5% delays were due to patient gone for radiotherapy and 10% delays were due to other reasons like attendant not available

3. AVERAGE TURN AROUND TIME OF TOTAL PROCEDURE

The graph shows average turnaround time of the steps a patient follows for a day care procedure.

PROCEDURES	TURN AROUND TIME
Sample Collection TAT	0:23:52
OPD consultation TAT	1:29:00
D/C Billing TAT	0:13:07
Bed allotment TAT	0:23:15
DRUG PROCUREMENT	0:34:21
MIXING TAT	0:32:00
Treatment Initiation TAT	0:29:42
Total procedure TAT	3:16:40
Post treatment stay	0:22:00
Total time in day care	4:41:11
Total Time in hospital	7:11:23

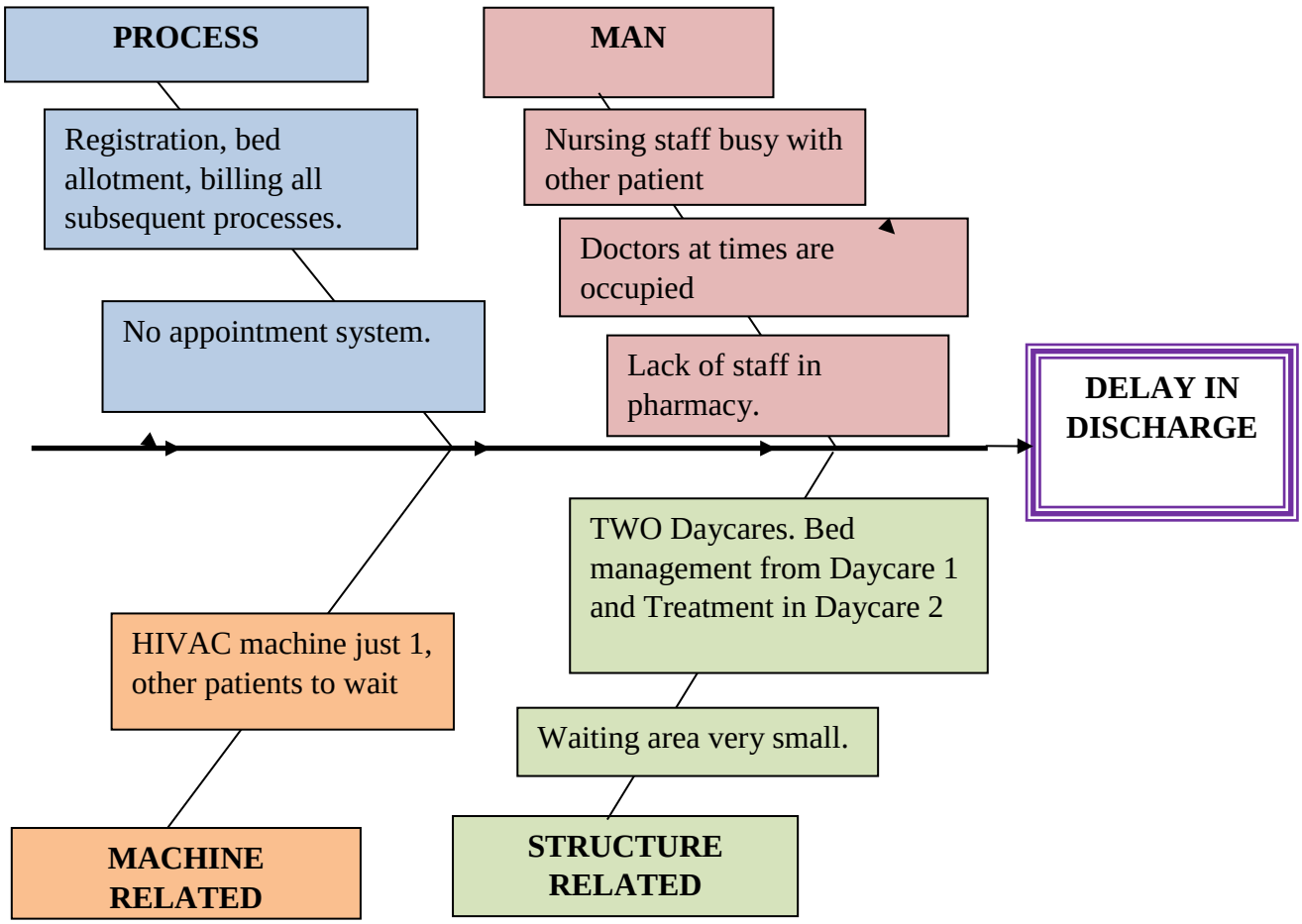


The above graph represents:

1. **Sample collection turnaround time** which is found to be 24 mins. It is calculated by subtracting billing time for investigation from time of arrival in the hospital and the average was calculated for 100 patients.
2. **OPD consultation turnaround time** is found to be 1 hr 30 min. It is calculated by subtracting OPD consultation time from billing for OPD consultation and the average was calculated.
3. **Day care billing turnaround time** is found to be 13 min which is calculated by subtracting billing time for day care from day care registration time and its average was calculated.
4. **Bed allotment turnaround time** is found to be 23 min which is calculated by subtracting bed allotment time from billing time of day care and its average was calculated.
5. **Drug procurement turnaround time** is found to be 34 min which is calculated by subtracting medicine procurement time from bed allotment time and its average was calculated.
6. **Mixing turnaround time** is found to be 32 min which is calculated by subtracting mixing time from medicine procurement time and its average was calculated.
7. **Treatment initiation turnaround time** if found to be 39 min which was calculated by subtracting drug started at from medicine procurement time and its average was calculated.
8. **Total procedure turnaround time** is found to be 3 hr 15 min which was calculated by subtracting summary received at from drug started at and its average was calculated.
9. **Post treatment stay** was calculated by subtracting left at from finished at and it was found to be 22 min.
10. **Total time in day care** is calculated by subtracting left at from bed allotment time and it is found to be 5 hrs approx.
11. **Total time in hospital** is found to be 7 hr 12 min which is calculated by subtracting left at from time of arrival in the hospital and its average was calculated.

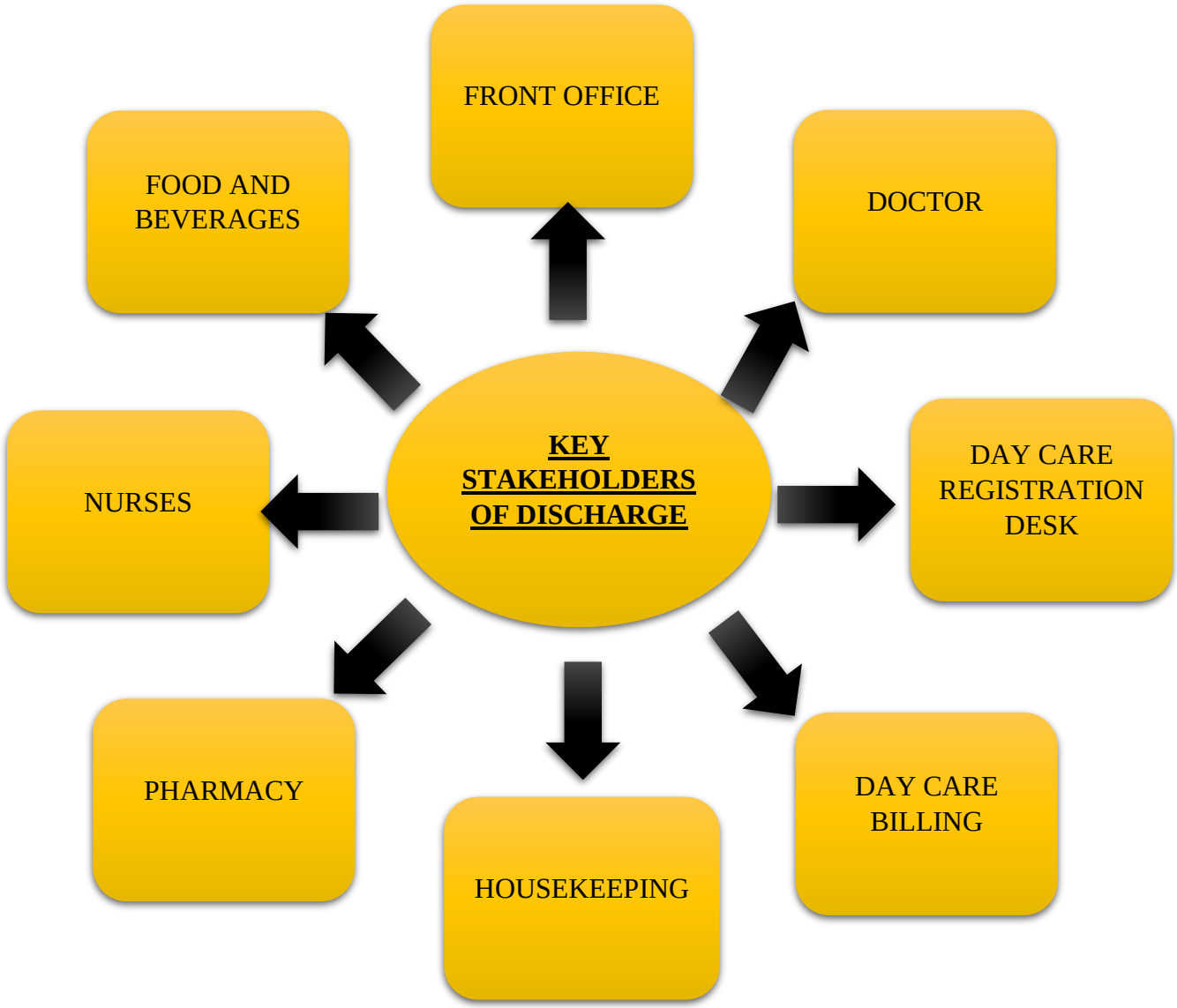
4. FISH BONE ANALYSIS

Critical areas which lead to delay in discharge



5. DIFFERENT STAKEHOLDERS IN DISCHARGE PROCESS

Different stakeholders observed which were involved in discharge process are as follows:



OBSERVATION AND FINDINGS

According to analysis, following observation were made:

Q1. What are the barriers and challenges in discharge process and what are the reasons behind it?

- In this study, we found that majority of the delays were due to delay medicine procurement.
- The other factor responsible for delay was waiting for nurse to initiate the treatment.
- The major reason behind this is that the nurses are occupied with other patients, or patient waiting to be treated by the desired nurse.
- Many of the chemotherapeutic drugs are administered in mixing with other drugs and the mixing is done in cyto admixture unit with full safety, thereby delay occurs in waiting for the medicines after mixing.
- Other reasons which contribute in delay in discharge of patients are patient having rest post treatment, patient gone for radiotherapy, waiting for blood components, attendant not available, etc.
- A data of 100 patients was collected and analysed and the average time of different steps a patient follows in a day care was calculated.
- It was observed that average time for OPD consultation was 1 hr 30 mins which becomes concern for delay.
- The reason patient's time was consumed for OPD consultation are doctors on round, doctors at times are occupied with critical patients, doctor on leave, waiting for their no. during peak hours.
- The average time taken by a patient for the procedure in day care is around 3 hours whereas the average time taken by a patient in day care i.e., from the time of bed allotment to the time patient exit from the day care is around 5 hours.
- Therefore, it is observe that nearly about 2 hours extra is consumed other than the total time taken in procedure of day care.
- This becomes the key factor for the delay in discharge process.
- These 2 hours include time taken for bed allotment, medicine procurement, medicine mixing.
- So delay in any of these above like we observed results in delay in process of the day care.

CONCLUSION

Cancer patients frequently get numerous sessions of chemotherapy in the day care over the more extended timeframe. Services, for example, blood tests, physical examination, drug preparations, and chemotherapy administration are required to be performed in various departments, for example, laboratories, cyto admixture unit, drug stores and treatment rooms.

The services for each patient are performed by different resources, for example, nurses, drug specialists, and medical oncologists. Clinical administrators confront troublesome choice of enhancing productivity in this complex multi-facility condition. The coordination of these services and assets is basic for opportune, proficient and successful treatment of patients.

Oncology is being a to a great degree requesting segment as far as elite desires and work stack comprising of the considerable number of vulnerabilities and difficulties at work, dealing with the substantial footfalls of patients. The day care staff have been devoted totally and functioned as a group together that included capability. In this review my point was to discover the delays due to in proficient care delivery that can be overcome by better coordination, scheduling and planning. Instabilities, for example, unpunctual arrivals, delay in admission of patient, treatment start, total treatment and discharge areas, increment or diminishing in treatment span because of reactions or dosage changes, cancelations, and additional items happen in day care unit. Every one of these uncertainties effect the patient flow and staff work process.

Patients experience long waiting time due to delay in admission, delay in treatment initiation, delay in total treatment and discharge. Reducing patient waiting times should be among the highest priorities for quality improvement and patient satisfaction in day care unit for cancer treatment facilities. Solutions in admission process such as staggering of the day care patient list, standardisation of admission and discharge process, preplanning of patient drug dose with the consultant prior to appointment day etc., would greatly help in reducing the waiting time for the patients and would thereby increase overall efficiency of the hospital and give the patients a good overall experience.

SUGGESTIONS AND RECOMMENDATIONS

Q2. What can be the solutions to improve the discharge process?

- Proper planning of discharge process would ensure an early discharge for a better bed assignment which will improve the efficiency of day care department.
- Reducing the time span for reaching out to the concerned consultant by making a prior appointment.
- The billing for day care procedure at present is done for 0-2 hours, 2-6 hours and more than 6 hours slot and the majority of the patients of 0-2 hrs bed allotment, their time taken for procedure extend beyond 2 hrs, so a billing for 2-4 hr slot can be incorporated to increase the efficiency of day care unit.
- Proper planning of the attending nurse to the patient ratio depending on the footfall of the patient in the day care.
- Proper allotment of nurse shift.
- Reducing the time taken in mixing of chemotherapy drugs in cyto admixture unit and bringing back to the attending nurse.

ANNEXURE

QUESTIONNAIRE- DAYCARE SURVEY

CR No. Treatment type: Date:

QUESTION	TIME/ YES or NO
12. Your time of arrival in the hospital today?	
13. Investigations were done after meeting consultant or before?	
14. Investigations were done in RGCI or outside?	
15. Incase in RGCI, billing time for investigation:	
16. Incase in RGCI, sample collection time:	
17. Reports available time:	
18. Billing time for OPD consultation:	
19. What was the time for OPD consultation:	
20. Daycare registration time:	
21. Daycare billing time:	
22. Bed allotment time:	
23. Drug availability: Yes or No	
24. Outside medicine: Yes or No	
25. Medicine procurement time:	
26. Mixing time:	
27. Drug started at:	
28. Finished at:	
29. Summary received at:	
30. Left at:	
31. Problems faced: • •	
32. Any suggestions to improve day care services: • •	

Mobile No. Signature:

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