

**Summer Training at
Fortis Memorial Research Institute, Gurgaon
(April 3 to June 2, 2017)**

**Study of Compliance of Administration and Medication Technique at
FMRI To Reduce Incidences of Medication Administration Error**

**By
Ramandeep Singh Bali**

**Under the guidance of
Dr. Monica Chaudhary**

**MBA Hospital & Health Management
2016-2018**


**Institute of Health Management Research
The IIHMR University, Jaipur
2017**

CERTIFICATE

This is to certify that Dr Ramandeep Singh Bali has undergone summer training in Fortis Memorial Research Institute, Gurugram from 3rd April to 2nd June 2017.

The candidate himself completed the project assign to him during summer training. His 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 success in all her future endeavors.



Col. (Dr.) Ashok Kaushik
Dean (Academic & Student Affair)

The IIHMR University, Jaipur



Dr. Monika Chaudhary
Associate Professor

The IIHMR University, Jaipur

2nd June, 2017

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Dr. Ramandeep Singh Bali** has undergone a voluntary internship in
"Quality Department" from 3rd April to 2nd June 2017 at Fortis Memorial Research
Institute, Gurgaon.

During this period he exhibited a high level of professionalism and a tremendous zest for
learning.

We wish **Dr. Ramandeep Singh Bali** all the best in his future endeavours.

With Best Wishes,


Shivani Dhir

Head- Training and Development


DR SAVITAA
Head of the Department
QUALITY



ACKNOWLEDGEMENT

Success can never be achieved single headedly, it needs the efforts of individual and the colleagues and mentors .First of all I would like to thank ALMIGHTY GOD, for providing me all the platforms to work upon.

A special note of thanks and love to the IIHMR UNIVERSITY for making me capable of working on assigned projects and giving me opportunities at all the levels to groom my skills.

My heartfelt thanks to DR. MONICA CHAUDHARY for all the guidance and enlightenment not only concerning the project but also from the beginning of this course.

Working in reputed institute like FMRI Gurgaon was a special experience to give me outlook of a hospital system where I look forward to work.

Special thanks to DR. SIMERDEEP SINGH GILL (Regional Director) for giving me the golden opportunity to work with the India's leading health care provider.

Word of thanks to DR. SAVITAA SHARAM Head quality dept. FMRI, Gurgaon, who was kind enough to spar her time to teach me and guide me at every step of my study.

Not to forget the staff of the hospital and especially the quality department who encouraged me in all the hard times and made my journey in hospital a beautiful experience, there teachings and thoughts will be of great help to me in my future.

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ACRONYMS / ABBREVIATIONS:-

- ❖ FMRI – Fortis Memorial Research Institute
- ❖ ED – Emergency Department
- ❖ CSSD – Central Sterile Services Department
- ❖ CT – Computerized Topography
- ❖ ECG – Electrocardiogram
- ❖ FMS – Facility Management and safety
- ❖ HR – Human Resource
- ❖ ICU – Intensive Care Unit
- ❖ IPD – In-patient Department
- ❖ IT – Information Technology
- ❖ MICU –Medical Intensive Care Unit
- ❖ OPD - Out-patient Department
- ❖ OT – Operation Theatre
- ❖ DICOM –Digital Imaging and communication in medicines
- ❖ RFID – Radio Frequency Identification
- ❖ CPOE – Computerized physician order entry
- ❖ EMR – Electronic Medical Record
- ❖ PHC – Preventive Health Check-up
- ❖ FOS – Fortis Operating System
- ❖ MGPS- Medical Gas Pipeline system

FORTIS HEALTH CARE LIMITED

Fortis health care limited is a leading integrated healthcare delivery service provider in India. The health care verticals of the company primarily comprise hospitals, diagnostics and day care speciality facilities.

Currently, the company operates its healthcare delivery network in Dubai, India, Mauritius, Sri Lanka with 45 healthcare facilities (including projects under development), approximately 10,000 potential beds and over 330 diagnostic centres.

In a global study of the 30 most technologically advanced hospitals in the world, its flagship, the Fortis Memorial Research Institute was ranked no. 2 by topmasterinhealthcare.com and placed ahead of many other outstanding medical institutions.



FORTIS MEMORIAL RESEARCH INSTITUTE

BRIEF HISTORY

- FORTIS HEALTHCARE LTD. Was incorporated in 1996 to develop a world class system of health care delivery in India, comprising super speciality areas along with multispecialty care at tertiary level.
- Late Dr.Parvinder Singh's dream was carried by his sons, Malvinder M. Singh and Shivender.M. Singh.
- Dr. Parvinder Singh was a visionary, a strategist, a thinker, an entrepreneur and leader par excellence. He was a rare personality, who always thought beyond his time and realized many of his dreams in life.
- The Indian pharmaceutical industry's entire strategy of globalisation starts from Ranbaxy and Dr. Singh.
- Fortis is the manifestation of Dr. Parvinder Singh's ideology and has been very rapidly growing through a combination of acquisitions,Greenfield,Brown field and management contracts.
- Fortis is in collaboration with the renowned hospital escorts and has created history by acquiring 10 hospitals from Workhardt giving it a strong pan India presence this was one of the largest deals in health care industry.
- In 2005, announced its first International foray jointly with Mauritius based partner and came into existence "**Fortis Clinique Darne**".

OUR LEADERS

Mr.Malvider Mohan Singh- Executive Chairman

He graduated from St. Stephens College, New Delhi, a major in Economics and later earned his MBA from the FUQUA school of Business, Duke University.

Mr.Shivinder Mohan Singh -Executive Vice Chairman

He completed his BSc Mathematics Honours and MBA in healthcare from Duke University. He is promoter and dynamic driver of Fortis Healthcare's aggressive growth.



FORTIS MEMORIAL RESEARCH INSTITUTE

Fortis memorial research institute (FMRI) is multispecialty, quaternary care hospital with an enviable international faculty, reputed clinicians, including super-sub-specialists and speciality nurses, supported by cutting edge technology.

A premium referral hospital, it endeavours to be the “Mecca of Healthcare” for Asia Pacific and beyond. Set on a spacious 11 acre campus with 1000 beds, this “Next Generation Hospital” is built on foundation of “Trust” and rests on four pillars.

- TALENT
- TECHNOLOGY
- SERVICE
- INFRASTRUCTURE

TALENT

Fortis Memorial Research Institute’s comprehensive medical programme is driven by reputed doctors, super- sub- specialists and speciality nurses committed to combining their exceptional medical expertise, technology and innovation to offer the best treatments.

TECHNOLOGY

Fortis Memorial Research Institute is equipped with a complete spectrum of diagnostic and therapeutic technology, including several state-of the-art technologies that are among the **first in India, in Asia and the world.**

- Radiation Therapy: A global first - collaboration between leading technology innovators, Brain Lab and Elekta.
- 3- Tesla Digital MRI –The World's first digital broadband MRI.
- Stem Cell - India's first stem cell lab in a hospital in collaboration with Totipotent Rx a, US based cell Therapy Company.
- Open Lab - India's first ever 'see – through' glass lab, with instant collection and real time processing of blood - samples.
- e- ICU- An advanced patient management system with two - way audio visual communication. It allows clinicians to access patient 24x7. The first of its kind in the world.
- 256 Slice CT - A state of the art 256 Slice Brilliance iCT Scanner with the ability to capture an image of the entire heart in just two heart beats.
- Bi- Plane Cath Lab - State-of-the-art cardiac cath lab to address cardiac and vascular interventions
- Brain Suite - One of its kind CT based Brain Suite, equipped with intra operative CT for brain and spine.
- Time of flight PET CT - An installation with Time of flight (TOF) reconstruction for exceptional image quality. It has the ability to detect lesions as small as 0.1 inches.
- Voice Modulated & Integrated Operating rooms - Two modular operating rooms integrated with equipment and controlled by a common control panel

INFRASTRUCTURE

- With landscaped greens, tranquil water bodies, sculptures, sunlit interiors, Fortis Memorial Research Institute adapts a design philosophy aimed at healing. The hospital has been built in view of all round wellness – mind, body and soul. Simultaneously, the hospital meets the simple needs of the caring attendants through facilities such as the Tummy Luck, Meditorium, R&R Lounge, Holistic Health, Mamma Mia, Retail Therapy, Crèche, Health4U and Fortiplex.

SERVICE

- Woven into the fabric of the hospital are innovative services, designed to provide our patrons with care and special attention.
- **Angel:** A welcoming face at the hospitality desk to make visitors feel special.
- **Genie:** A friendly and helpful companion to assist patients navigate the hospital.
- **Concierge:** A facilitation desk to assist patrons with various needs in and outside the hospital.

SIGNIFICANCE OF LOGO



“A HEALING PASSION”

The Fortis Healthcare Limited Logo defines the commitment to patient care. The logo reflects their endeavour to achieve excellence in healthcare delivery system by bringing together the best of technology, medical expertise and patient care. The logo also implies the human values that govern every facet of our organisation.

The two nurturing hands along with a red dot on the top depicts- “nurturing hands caring for human life”

GREEN is a colour of healing and depicts WELLBEING and RED is symbolic of steadfast focus, dynamic zeal and enthusiasm.

VISION

To be the ultimate healthcare destination - "Mecca of Medicine"

MISSION

To provide quaternary care to the community in a compassionate, dignified, and a distinctive manner.

VALUES:

They serve as a guideline for the routine conduct of each Fortisian. The core values of Fortis healthcare are:

● Commit to ‘best outcomes and experience’ for our patients ● Treat patients and their caregivers with compassion, care and understanding. ● Our patients’ needs will come first.	Patient centricity
● Be principled, open and honest. ● Model and live our values. ● Demonstrate moral courage to speak up and do the right things.	Integrity
● Proactively support each other and operate as one team. ● Respect and value people at all levels with different opinions, experiences and backgrounds. ● Put organisation needs’ before department / self-interest.	Teamwork
● Be responsible and take pride in our actions. ● Take initiative and go beyond the call of duty. ● Deliver commitment and agreement made.	Ownership
● Continuously improve and innovate to exceed expectations. ● Adopt a ‘can do’ attitude. ● Challenge ourselves to do things differently.	Innovation

ACCREDITATION AND TYPES

"A public recognition of the achievement of accreditation standards by a healthcare organization, demonstrated through an independent external peer assessment of that organization's level of performance in relation to the standards".



- Presently FMRI is NABH accredited.
- JCI accreditation will be September 2017.

GENERAL LAYOUT OF HOSPITAL

-  Area of Hospital-10.76 Acres
-  Entry & Exit Points- 4
-  Built up area- 750,000 sq.ft
-  Height of Hospital- 27.95 meters
-  Lifts and Dumb Waiters- 10 and 3 respectively
-  Staircases-10
-  Floors-9
-  MGPS- Medical Gas Pipeline system

HOSPITAL INFRASTRUCTURE

TOTAL AREA	10.76 ACRE / 12,79,000 SQ.FT.	SUBSTATION (2000 *2)	4000 KVA
BUILT UP AREA	7,50,000 SQ.FT.	SANCTIONED LOAD	3000 KVA
HEIGHT OF THE BUILDING	27.95 METRES	SPLIT UNITS	56
LOWER GROUND FLOOR	104512	CHILLER PLANTS	1600 Ltr
UPPER GROUND FLOOR	84657	DG (1500 KVA X 3)	45000 KVA
FIRST FLOOR	73498	FIRE (OHT)	64 KL
SECOND FLOOR	73661	FIRE (UGT)	325 KL
THIRD FLOOR	39832	HSD TANK	30 KL
FOURTH FLOOR	39832	SEWERAGE TREATMENT PLANT	360 KL / DAY
FIFTH FLOOR	39832	EFFLUENT TREATMENT PLANT	360 KL / DAY 11000 Litres
		LIQUID MEDICAL OXYGEN	360 KL / DAY 11000 Litres

HOSPITAL TOUR

BASEMENT

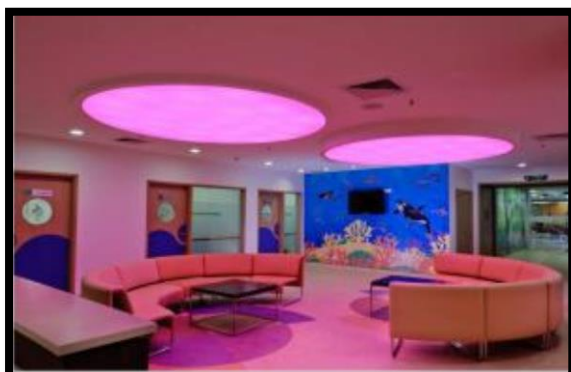
1. Engineering and Biomedical
2. Contractual Staff Dining
3. Materials and Purchase
4. PTS blower room
5. Stores: Pharmacy, Kitchen & General store
6. Radiation Oncology: ELEKTA's 2 Linear Accelerators with navigation system Synergy and Axese.
7. First collaboration between Brain lab & Elekta in radiation oncology department
8. MRD
9. Mortuary
10. Nursing training room
11. Parking for staff and visitors



LOWER GROUND

- Radiology with:
 - Asia's first Ingina's 3 Tesla MRI
 - 256 Slice iCT scan with Skylight
- NIC
- Nuclear medicine with PET-CT & Gamma camera
- Emergency
- CSSD
- In house Laundry
- SRL's Open Laboratory
- Fortis TotipotentRx
- 60 OPD's for Oncology, Paediatrics, Orthopaedics, Neurology and other medical and Surgical OPD's
- Staff entry, Fire control room & Mammamia

CLINICAL AREA PICTURES



UPPER GROUND FLOOR

- “Health 4 u” Preventive health Check
- Medi Mart, Medi Rent and Fila
- Chicco, Bouncing Babies, Religare Wellness Pharmacy& Being Human, Baby Oye, Fortibakes ,chai thela
- IPD admissions and International Patient Services
- Tummy Luck-Subway, Haldiram’s, Baskin Robbins and Whole Foods, Crunch box , Joost Food Ventures.
- Fortiplex- 36 seater Mini Theatre.
- VIP lounge
- Mother and Child, Breast Clinic and IVF
- Kitchen
- Administrative offices



FIRST FLOOR

- 4 Labour Delivery Suites with 02 Labour Rooms
- Meditorium- a 111 seat auditorium
- 40- Bedded Nightingale ward
- Paediatric Unit with 9 beds
- 11 bedded Dialysis Unit
- 10 bedded Chemotherapy Unit
- In-house blood bank
- Pathology Lab
- Rest and Relaxation (R &R) Lounge, with 76 recliners and 31 cubicles
- 13 Neonatal ICU warmers / incubators with a 5 bedded Well Baby Nursery

SECOND FLOOR

- Intensive Care Unit: 8 ICUs with Philips' Intellivue
- Clinical Information Portfolio (ICIP)
- Operation Theatre: 10 Modular Operating Rooms (12 in total: 1 in ER & 1 in 1st Floor)
- Catheterization Laboratory, Single Plane and Neuro cath lab (12 bedded, Pre/Post Cath)
- Six Bone Marrow Transplant units.
- Three Endoscopy Suites, (5 bedded Pre/post endo)
- 98 Beds in ICU's including NICU (Excluding Cath lab and endoscopy suites)
- 7 Beds in Liver Transplant ICU

THIRD AND FORTH FLOOR

- 23 Single Beds on 3rd Floor and 24 Single Beds on 4th Floor
- 44 Double Beds on 3rd Floor and 44 Double Beds on 4th Floor
- Nuclear Medicine Therapy room on 3rd floor
- Discharge Area on each floor
- Patient Attendant waiting Lounge on each floor
- Three wings T1, T2 and T3
- One Central Nursing Station on each Floor

CLINICAL INFRASTRUCTURE:

NICU and Nursery	18	Operation Theatres	12
Dialysis	11	Cath Labs	2
Chemotherapy	10	LINAC	2
Pre & Post Cath	12	LDR Suites	4
ER Beds	14	Delivery Rooms	2
Labour beds	3	Endoscopy Suites	3
Pre-OP	6	Nightingale ward	40
Pre post Endo	5	Double Bed Rooms	88
ICU beds	98	Single Bed Rooms	47
Operating Rooms	12	Deluxe Rooms	8
Operating Beds (Internal Info Only)	288	Suites	4
		Signature Apartment	1
		Maharaja Suite	1

SIGNATURE FLOOR

- 1 Signature Apartment
- 1 Maharaja Suite Room
- 4 Suite Rooms
- 8 Deluxe Rooms
- Express check-in and check out
- Executive Offices & Board room

Cutting Edge Specialities are: - Organ Transplant, Robotic Surgery, and Stem Cell Therapy.

DEPARTMENTAL PROFILE

QUALITY DEPARTMENT

Quality Objectives

To practice patient centric approach
To ensure safety of patients, employees and other service providers.
To monitor, measure, assess and improve our performance to achieve service and clinical excellence and patient satisfaction.
To provide a platform for continuous learning at all levels of the organization.
To empower and involve all employees in continuous quality improvement

Quality Policy

FORTIS: To provide tertiary/quaternary care to the community in a compassionate, dignified and distinctive manner.

Motto: “**Best is the Least We Can Do**”

FMRI is committed to treat all patients and caregivers with compassion, integrity, teamwork and honesty. We endeavour to achieve high standards of medical care through a quality improvement system. We continuously strive to improve and sustain patient satisfaction, patient safety and clinical outcomes.

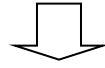
OPD

Functions:-

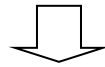
- o Reception/Information
- o Appointment
- o Registration-OPD, Diagnosis
- o Billing-OPD, diagnostics, emergency
- o Report/document delivery
- o Customer feedback

REGISTRATION PROCESS OF OPD:-

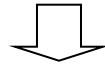
PATIENT ENTERS INTO THE HOSPITAL



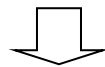
PATIENT APPROACHES THE OPD REGISTRATION



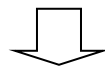
PATIENT FILLS THE REGISTRATION FORM



INFORMATION IS ENTERED IN TO THE HIS OF THE HOSPITAL



THEN, UHID (UNIQUE HOSPITAL IDENTIFICATION) IS
GENERATED



BILLS ARE PROCESSED

HR DEPARTMENT:-

Functions:

- o Development of HR policies and strategies
- o Manpower planning
- o Recruitment and selection
- o Employee training
- o Salary determination
- o Performance appraisal

- o Personnel data entry and record maintenance
- o Consultation and advisory services to management and employees
- o Grievance handling

MEDICAL RECORD DEPARTMENT:-

Functions:

- o Proper storage and maintenance of medical records. Maintenance of integrity and confidentiality of medical records. Submission of required data to government. Classify the medical files as per ICD-10 obtaining missing patient files.

IT DEPARTMENT: -

Functions: Maintenance of all the software's in the hospital. Modifications of the software are as per the requirements of the department. It covers the following modules:-

IPD Billing

OPD Billing

Administration

House Keeping

Ward/Nursing

Diet

Visitor's Pass

Stores

Purchase

Laboratory Information System

Radiology Information System

ACCIDENT AND EMERGENCY DEPARTMENT:-

The ED in a hospital plays a very important role for all people who are in acute need of immediate care. The ED at FMRI is 6 bedded along with 8 beds in observational room. Also there is a procedure room to conduct simple surgical procedure.

ED has separate entry, far away from the general entry and is quite spacious in order to allow free movement of stretchers/trolleys from ambulance to the emergency room.

While bringing in the patient from ambulance, TRIAGE is done so patients are placed according to the triage beds.

The TRIAGE pattern followed here is:-

- 1 red bed for category 1 patients i.e. critically ill.
- 2 yellow beds for category 2 patients who need to be admitted.
- Remaining category 3 patients are kept in observation room.

A code blue team is designated which consists of:-

- a) Critical care team
- b) Emergency team
- c) Cardiology team
- d) Anaesthetist team

BLOOD BANK:-

A blood bank is a bank of blood and blood components, gathered as a result of blood donation or collection, stored and preserved for later use in blood transfusion.

LICENSE: - Blood bank of FMRI, Gurgaon is located on first floor. It is NABH and NACO accredited and was able to get the accreditation within six months of the functioning of the hospital. The blood bank has a valid license from Central Drugs Standard Control Organisation (CDSCO) and approved by Drug Controller General (INDIA), central license approving authority under Drug and Cosmetic Rules-1945 with further amendments.

The blood bank is run by the FMRI in order to provide blood and blood components to its patients and is licensed by Drug Controller of India.

LABORATORY:-

The laboratory here at Fortis is outsourced to SRL Lab and all the routine investigations are carried out here only. The samples are received from both IPD and OPD patients. The sample is received in boxes from departments and the house keeping staff carries the same. Also, for emergency investigations, a red seal is marked on the sample so as to give it a priority. Also, all the equipment's in the lab are automated i.e. they are linked to computers and so all the test results are automatically transferred in the computer and a report is generated. The laboratory has LIS. It is connected to the HIS of the hospital in which the entire information like- patient's name, IPID or UHID, test to be done and the reports is stored. Also, to maintain employee safety i.e. prevent occupational hazard, when an infected sample or any chemical bottle breaks in the laboratory, HAZMAT(Hazardous Material) team is called and immediately the spillage is cleaned up.

CSSD:-

CSSD stands for central sterile supply department. It is the department that is solely responsible for sterilization of all the instruments used all over the hospital.

CSSD has three zones:

- a) Dirty/Receiving area
- b) Clean area
- c) Sterile area

- a) In dirty area all used instruments from IPD and OPD are received. This movement takes place manually, while it is received through a dumb waiter from OT. Here, an ultrasound cleaner is located. This is a fully automatic machine in which the used instruments are dipped in a solution and are sterilized. This machine produces vibrations which sterilize the instruments. After the above procedure is over, the sterilized instruments are washed under running water. After this, the sterilized instruments are dipped in preserve solution for 10-15 minutes.
- b) In clean area the sterilized instruments are kept packed in a double wrapped green colour cloth.
- c) In Sterile area there is 1 autoclave machine that is used to sterilize the used

instruments. It is a double door machine. Through one door the unsterile instruments are loaded and through the other door the instruments are de-loaded after the procedure are over.

Temperature is set according to the instrument to be sterilized.

After the sterilization process is over, the sterilized instruments are packed and batch monitoring labelling is done through a labelling gun. This labelling consists of:-

- ✓ Expiry Date
- ✓ Packaging Date
- ✓ Machine No.
- ✓ Loading No.
- ✓ Sterilization Date

ICU:-

ICU is located at the second floor of the IPD building making it accessible to all the outside services like lab, diagnostics, OT's etc.

There are 7 different types of ICU's in the hospital which are as follows:-

- Neurology, orthopaedic, polytrauma
- Cardiology and Transplant
- CTVS
- Medical ICU
- Bone Marrow Transplant
- Paediatrics ICU
- NICU

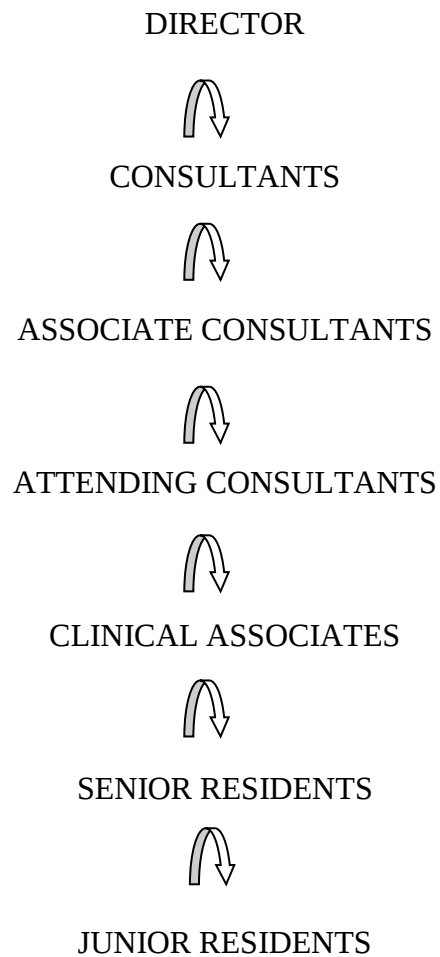
The nursing station is centrally located in the ICU and the nurse to patient ratio in ICU is 1:1 or 1:2 as per the requirement.

Also, here at FHN, Barrier nursing is practiced in ICU's so as to minimize the risk of Hospital Acquired Infection (HAI).

Equipment's used in ICU- a) Ventilator b) IABP (Intra-Aortic Balloon Pump) c) Suction d) ICD (Inter Costal Drainage System) e) Portable Ultrasound-ray (when needed) f)

DVT (Deep Vein Thrombosis) Pump g) Bi-pap to give oxygen to patient. There are 98 beds (52 ventilated) cubicles.

ORGANOGRAM FOR ICU:-



OPERATION THEATERS

The operation theatres are located on the 2nd floor of the OPD building having a direct connectivity with ICU (2nd floor of IPD building) so that patient is easily and quickly shifted to and from the ICU'

At FMRI, there are 8 OT's-

- 1) OT 1- Orthopaedics & Liver Transplant OT
- 2) OT 2 & OT 3- Neurosurgery OT
- 3) OT 4- Major & General
- 4) OT 5- Cardiac & Transplant
- 5) OT 6- Planned & emergency cases
- 6) OT 7- MIS, Minor day care & emergency
- 7) OT 8- Minor surgeries

ZONING:-It is basically dividing the OT area according to the hygiene maintained in the different zones. Here we observed three zones:-

- a) DIRTY ZONE i.e. outside corridor, changing rooms.
- b) CLEAN ZONE i.e. supply store, scrub area, pre-op room.
- c) ASEPTIC ZONE i.e. operation theatre, sterile preparation.

This zoning is very essential in OT's as it helps to prevent infection.

WASTE DISPOSAL POLICY AT FMRI

Black	Red	Yellow	Blue	Black with cytotoxic symbol	Sharp container
ALL GENERAL WASTE	INFECTED PLASTIC AND NON PLASTIC	ANATOMICAL WASTE	UNBROKEN GLASS WASTE		ALL SHARPS (USED AND UNUSED)
PAPER, PACKAGING MATERIAL	TUBINGS HAND GLOVES, BOTTLES WITH IV TUBES, CATHETERS, GLASS INTRAVENOUS SETS, CONTAMINATED COTTON/GAUZE ETC	BODY PARTS, PLACENTA	UNBROKEN AMPULES	ALL CYTOTOXIC WASTE	NEEDLES SCALPELS BLADES
DISPOSABLE TEST GLASSES, PLATES ETC	WASTE FROM CLINICAL SAMPLES ,PATHOLOGY, BIO CHEMISTRY, HAEMATOLOGY , BLOOD BANK ,LABORATORY CULTURES ,STOCKS OR SPECIMENS OF ATTENUATED VACCINES	HUMAN TISSUES			BROKEN GLASS AMPULES

SAFETY CODES AT A GLANCE

CODE	EVENT	DIAL
CODE BLUE	CARDIAC ARREST/UNCONCIOUS UNRESPONSIVE PERSON	1234
CODE RED	FIRE	7777
CODE PINK	INFANT/CHILD ABDUCTION	7777
CODE PURPLE	PHYSICAL ALTERCATION	7777
CODE YELLOW	EXTERNAL DISASTER	7777
CODE GREY	INTERNAL DISASTER	7777
CODE ORANGE	HAZMAT SPILLS	7777

How to announce code blue

Dial “1234” from any hospital landline

You will hear a beep

After the beep record your message with location

Repeat your message thrice

Press *

Call automatically disconnects in 3-4 sec

Call will be sent to the code blue responders

**A Project Report on Study of Compliance Of
Administration And Medication Technique At
FMRI To Reduce Incidences Of Medication
Administration Error**

ABSTRACT

Nurses are responsible for ensuring safety and quality of patient care at all times. Large amount of risk is associated with most of nursing tasks, and no doubt medication administration arguably carries the greatest risk.

Unfortunately, patients are frequently harmed or injured by medication errors. Some suffer permanent disability and for others the errors are fatal.

To prevent the errors **NINE RIGHTS** of medication administration are followed.

1. Right patient
2. Right drug
3. Right route
4. Right time
5. Right dose
6. Right documentation
7. Right action
8. Right form
9. Right response

Medication administration in acute care settings is a high volume and potentially an error prone activity.

Nurses have a great role in medication administration process (MAP) multiple times per day in a hectic hospital environment. This requires a great deal from the nurses in order to accomplish the demanding task of avoiding the adverse drug reactions.

From QUALITY perspective medication administration process plays an important role in prevention the various unfortunate incidences like wrong drug, wrong time, wrong dose ,wrong route, wrong route all of which can prove fatal to the patient and raise a question mark on the quality of services provided by the organisation.

LITREATURE REVIEW

When we go into the earlier studies that have been done on the topic of the medication administration and errors related to it. What all factors affect the medication administration and what all conditions be it related to emotional, psychological, social or work stress lead to these errors.

Many studies have been done to unveil the major causes and factors .some of the studies have been reviewed here under.

In one of studies the authors found nurses overrode BCMA alerts for 4.2% of patients charted and for 10.3% of medications charted. Possible consequences of the workarounds include wrong administration of medications, wrong doses, wrong times, and wrong formulations. There are some shortcomings in BCMAs' design, implementation, and workflow integration encourage work arounds. So integrating BCMAs within real-world clinical workflows requires attention to *in situ* use to ensure safety features' correct use.(1)

It has been noted by studies that interruptions also play a significant role in the errors of medication. A study reveals that each interruption results in 12. % increase in procedural error and 12.7% increase in clinical error. (2)

Some of the causes have been noted by literature it states injectable administration, lack of nurses' standardized protocol for the preparation and administration of drugs, incomplete or illegible prescription and nurse's workload were analysed as potential risk factors of MAEs in multivariate logistic regression analysis (3).

Numerical data of a study quotes that of 5,744 observations in 851 patients, 187 (3.3%) medication administration errors were detected. the therapeutic classes most commonly associated with errors were vasoactive drugs 61 (32.6%) and sedative/analgesics 48 (25.7%). The most common type of error was wrong infusion rate with 71 (40.1%) errors (4)

Of the total medication error reports, just 68.2% resulted in serious patient outcomes and only 9.8% were fatal. Out of total 469 fatal medication error reports, 48.6% occurred in patients over 60 years. Th most common cause of death in admin startion (40.9%), administering the wrong drug (16%), and using the wrong route of administration (9.5%). Common causes for errors are performance and knowledge deficits (44%) and communication errors (15.8%).(5). Another article describes the results of a large-scale survey designed to assess nurses' perceptions of the reasons why MAE may not be reported. The companion article compares nurses' estimates of the extent to which MAEs are reported with the actual reported medication error rates. Nurses in 24 acute-care hospitals were surveyed to determine perceptions of reasons why medication errors may not be reported. The factor analysis reveals four factors explaining why staff nurses may not report medication errors: fear, disagreement over whether an error occurred, administrative responses to medication errors, and effort required to report MAEs. It was concluded that there are potential changes in both systems and management responses to MAEs that could improve current practice. These changes need to take into account the influences of organizational, professional, and work group culture.(6)

Slips and lapses were the most commonly reported unsafe acts, followed by knowledge-based mistakes and deliberate violations. Error-provoking conditions influencing administration errors included inadequate written communication (prescriptions, documentation, transcription), problems with medicines supply and storage (pharmacy dispensing errors and ward stock management), high perceived workload, problems with ward-based equipment (access, functionality), patient factors (availability, acuity), staff health status (fatigue, stress) and interruptions/distractions during drug administration. Few studies sought to determine the causes of intravenous MAEs. A number of latent pathway conditions were less well explored, including local working culture and high-level managerial decisions. Causes were often described superficially; this may be related to the use of quantitative surveys and observation methods in many studies, limited use of established error causation frameworks to analyse data and a predominant focus on issues other than the causes of MAEs among studies.(7)

Survey results suggest that nurses should double check medication administration in known high-alert situations. Snowball survey was used to collect error details from nurses in a non-reprimanding atmosphere, helping to establish standard operational procedures for known high-alert situations. (8)

In all, 91 unique studies were included. The median error rate (interquartile range) was 19.6% (8.6–28.3%) of total opportunities for error including wrong-time errors and 8.0% (5.1–10.9%) without timing errors, when each dose could be considered only correct or incorrect. The median rate of error when more than 1 error could be counted per dose was 25.6% (20.8–41.7%) and 20.7% (9.7–30.3%), excluding wrong-time errors. A higher median MAE rate was observed for the intravenous route (53.3% excluding timing errors (IQR 26.6–57.9%)) compared to when all administration routes were studied (20.1%; 9.0–24.6%), where each dose could accumulate more than one error. Studies consistently reported wrong time, omission, and wrong dosage among the 3 most common MAE subtypes. Common medication groups associated with MAEs were those affecting nutrition and blood, gastrointestinal system, cardiovascular system, central nervous system, and anti-infective. Medication administration error rates varied greatly as a product of differing medication error definitions, data collection methods, and settings of included studies. Although MAEs remained a common occurrence in health care settings throughout the time covered by this review, potential targets for intervention to minimize MAEs were identified. (9)

The study shows that the rate of intravenous drug errors was high. Although most errors would cause only short term adverse only few serious. A combination of reducing the amount of preparation on the ward, training, and technology to administer slow bolus doses would probably have the greatest effect on error rates. (10)

INTRODUCTION

Medication administration provides the basis for the prevention of all types of the medication errors. Medication administration process starts right from time when the nurse follows the prescribed time of medication for the patient and also takes into consideration the various rights of the patients' drug administration.

A systematic protocol has to be followed for the medication administration to prevent the medication error and to prevent the infection spread to the patient.

This helps curb large amount of medical errors which in turn play a significant role in decreasing the mortality and mortality rates.

Medication administration process flow starts when nursing staff prepares for administering drug to the patient.

Following are the steps that are mandatory for the nursing staff to follow while in drug administration process.

There are five stages of medication process;

- Ordering/prescribing
- Transcribing and verifying
- Dispensing and delivering
- Administering
- Monitoring and reporting

Prescribing/ordering:

This step mostly initiates the series of errors, that results in receiving the wrong dose or wrong medication. Attitude, workload and knowledge of prescriber are significantly associated with the ADEs.

However if nurses or pharmacists question about prescription, they can be confronted with aggressive behaviour, which may inhibit future questioning and clarification.

Transcribing, dispensing and delivering.

One study found that while dispensing errors were 14 percent.

Examples of errors that can be initiated at the transcribing, dispensing and delivering stages include failure to transcribe the order, incorrectly filling the order, and failure to deliver the correct medication for the correct patient.

MEDICATION ADMINISTRATION

Nurses are primarily involved the process of medication. Nurses are even involved in the preparation and dispensing of the medicine.

Early researches suggest an error of 60%, mainly in the form of wrong time, wrong dose, and wrong rate. Injectable drugs were the most common cause of death, wrong dose was most common error and administering to the wrong patient was the second most common error. Most common cases were the human factors followed by miscommunication.

Nurses are not the only ones to administer the medication.

Doctors, technicians and patients family members also play a role in the medication administration. There should be clear differentiation between the administrators of the medication. Nurses spend around 40% of their time in the medication administration that makes one reason for predominance of nurses in the medication error.

According to a study conducted by the US state board of nursing it was assessed that whether there were some common characteristic to the nurses that committed medication administration error.

Three significant factors were pointed out:

1. Age of staff
2. Educational qualification of staff
3. Employment setting of staff

Besides the patients' rights of medication administration, the complexity of this process has led to the formulation of the rights of the nurses in the area of the medication administration. The essential environmental conditions conducive to safe medication process include:

- The right to completely and clearly written orders that clearly specify, the drug, route and dose.
- The right to have correct drug dose dispensed from pharmacies.
- The right to have access to the drug information.
- The right to have policies on the safe medication.
- The rights to administer medication safely and to identify problems in the system.
- The right to stop, think and be vigilant when administering medications.

EFFECT OF WORKING CONDITIONS

1. **LATENT CONDITIONS:** Managerial decisions, organisational processes and elements in the system such as staff shortages and even environment, turnover, medication administration protocol.
2. **Errors producing conditions:** Environmental, team, individual or task factors such as distractions or interruptions mishandling of med, transporting patients and performing ancillary services.
3. **Active failures:** Errors involving slips (recognition or selection failure), lapses (failure of memory or attention), and mistakes (incorrect choice of path) compared to violations, where rules of correct behaviour are consciously ignored.

IMPACT OF WORKING CONDITIONS ON MEDICATION ERRORS

Medication safety for patient is dependent upon systems, process, and human factors which can vary significantly across health care settings.

It can influence medication process including the staffing levels, nursing skill mix, shift length, patient acuity, and organisational culture. According to 3 literature reviews and 13 articles the major organisational factors include:

- **NURSING STAFF**
- **WORKLOADS**
- **ORGANISATIONAL CULTURE**
- **POLICIES, PROCEDURES AND PROTOCOLS**
- **PROCESS FACTORS**
- **DISTRACTIONS AND INTERRUPTIONS**
- **DOCUMENTATION**
- **COMMUNICATION**
- **COMPLEXITY**
- **EQUIPMENT FAILURE WHILE ADMINISTERING**
- **MONITORING AND ASSESSING**
- **EFFECT OF FATIGUE AND SLEEP LOSS**

NEED FOR STUDY

Medication administration is very important aspect of the quality, in prevention of the medication error including

1. Administration error.
2. Dispensing error
3. Prescription error
4. Transcription error
5. Wrong time
6. Wrong dose
7. Wrong patient
8. Double dose.

In the previous few years it was observed and seen that there was some percentage of the medical errors due to administration fault.

To reduce the errors a study was conducted whose results were not quite satisfactory, this helped the tracking down of the various reasons for the medication administration error.

To reduction of medication error was the main cause of worry for the administration.

So an intervention programme was designed and implemented to get the desired results.

INTERVENTION PLAN

An intervention plan was successfully prepared and implemented, following steps were implemented.

A meeting and training session for the nursing staff for improving the medication administration process.

Training for the better and enhanced communication between doctors and the nurses.

Training to doctors for the prescription writing.

Effective training to the doctors and nurses for proper medication knowledge.

All these steps were implemented and further assessed by the observational study in the mid of April 2017.

AIM OF STUDY

To study the reasons for administration error and to reduce the number of medication errors by observing medication technique of nurses in nightingale, insignia and executive floor.

OBJECTIVE

The study is to increase the compliance of the staff towards following process of the drug administration and to reduce the medication error to least possible.

PARAMETERS TO BE AUDITED

Medication time prescribed on file Vs actual time at which medicine was administered.

Whether nurses carry file to patient bed side or not.

Whether file is signed immediately after the medication or not.

Whether nurses explain to patient about medicine being given or not.

If UID bands of patients are checked for confirmation

Whether medicine is given in cup or not.

RESEARCH METHODOLOGY

STUDY DESIGN - Observation

DATA COLLECTION TOOL – Checklist

SITE: FORTIS MEMORIAL RESEARCH INSTITUTE GURUGRAM HARAYANA

SAMPLE SIZE -

- TOTAL NO OF FLOORS - 3
- TOTAL NO OF PATIENTS – 260
- TOTAL NO OF OBSERVATIONS - 260

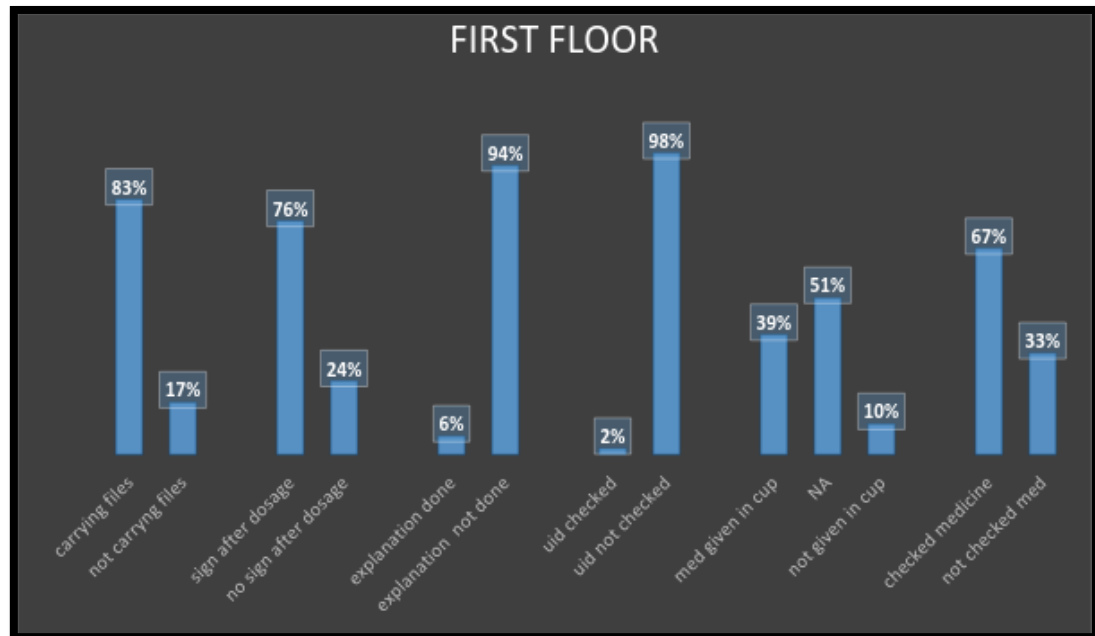
SAMPLE TYPE- Purposive sampling

TIME PERIOD- Fifteen days.

FLOOR WISE ANALYSIS

FIRST FLOOR:

ANALYSIS:



INTERPRETATION:

PARAMETER 1: 83% of the nurses carried files to the patient bed side.

17% of the nurses did not carry file to the patient bed side.

PARAMETER 2: Only 76% of the nurses signed immediately after dosage.

24% of nurses did not sign immediately after administration.

PARAMETER 3: Only 6% of nurses explained to patient about the medication.

94% of the nurses did not consider it as important'

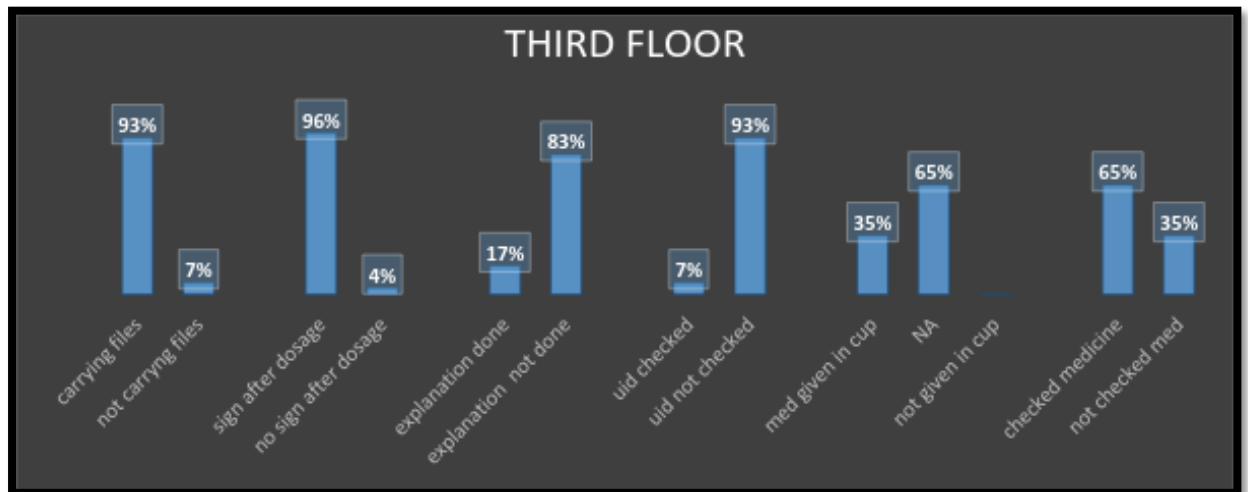
PARAMETER 4: Only 2% of the nurses checked the UID band before administering, they only rely on the check from file.

PARAMETER 5: 10% of nurses did not give medicine in cup.

PARAMETER 6: 33% of nurses did not check the medicine before administration.

THIRD FLOOR:

ANALYSIS:



INTERPRETATION:

PARAMETER 1: 93% of the nurses carried files to the patient bed side. 7% increase can be done with special training programmes for nurses.

PARAMETER 2: 96% of the nurses signed the file immediately after medication administration. There is need to increase the compliance by providing proper education and training to the nurses.

PARAMETER 3: Explanation about the medication dose, benefit, side effect was done only in 17% of the cases, while in 83% cases it was not done.

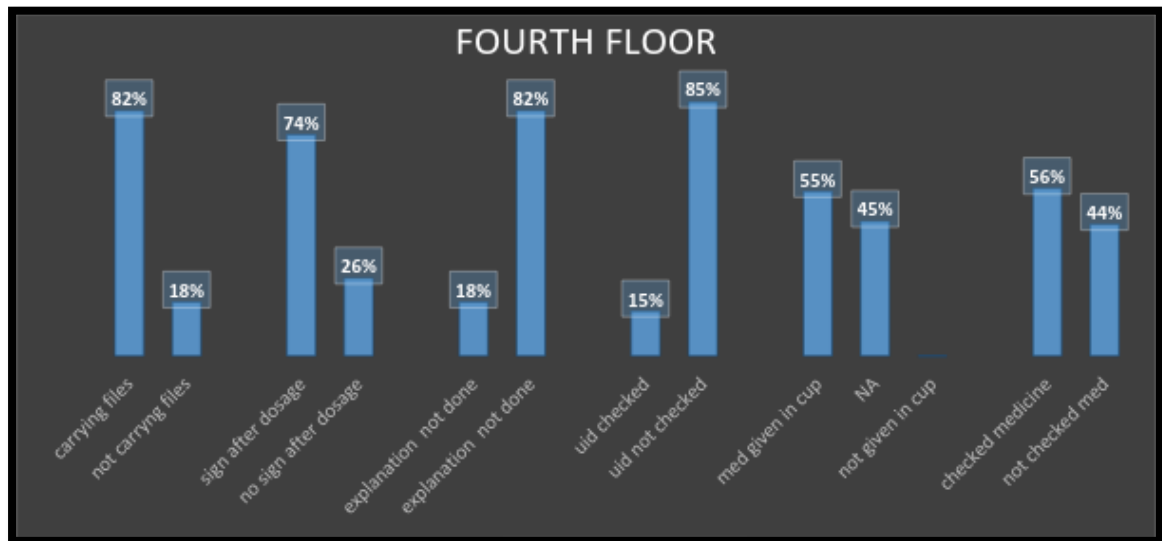
PARAMETER 4: UID band was checked for identification only in 7% of cases, while in 93% cases UID band was not checked for identification of patient during medication administration.

PARAMETER 5: In 35% of the applicable cases the medicine was given in cup

PARAMETER 6: In 65% of the cases the nurses checked the medicine for accurate dose and route before administration. Whereas in 35% of the cases the medicine was not checked for details before administration.

FOURTH FLOOR:

ANALYSIS:



INTERPRETATION:

PARAMETER 1: 82% of the nurses were observed carrying files to the patient room while drug administration, while in remaining 18% cases nurses didn't carry the file to the patient room.

PARAMETER 2: In 74% cases nurse signed immediately after the medication administration, while in remaining cases nurses signed the file later after sometime.

PARAMETER 3: It was observed that only in 18% of the cases the nurse explained the patient about the details of the medication being provided, and in remaining cases direct administration of the medication was carried out.

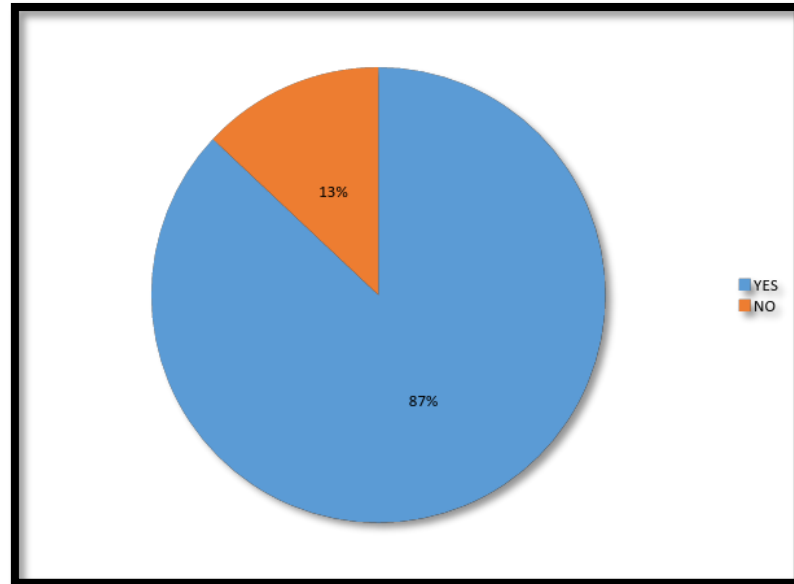
PARAMETER 4: It was observed that only 15% of the nurses checked the UID band for proper identification before medication administration, and in remaining 85% cases the nurses administered medication on the basis of checking name and UID from patient file only.

PARAMETER 5: In all the applicable cases the medication was given properly in cup.

PARAMETER 6: In 56% cases nurse carefully checked the medicine details before administration to the patients, and in remaining cases the medicine check was not done before administration.

ANALYSIS OF THE DATA

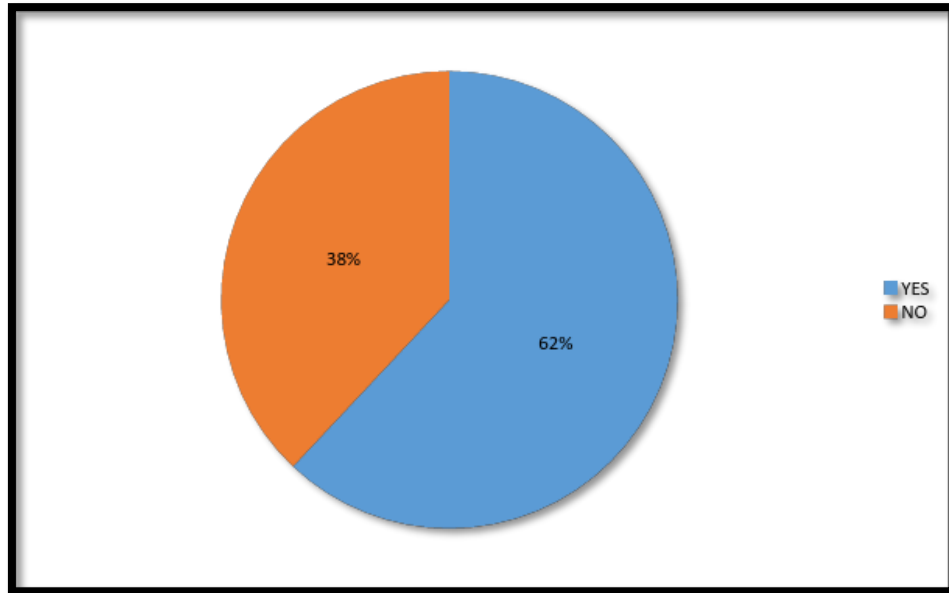
PARAMETER 1: NURSES CARRYING FILES TO PATIENT ROOM.



INTERPRETATION:

Carrying files is one and first step in the medication administration process. It was observed in the study only 87% of the nurses carry the files to the patient bed side.

PARAMETER 2: CHECKING MEDICINE BEFORE ADMINISTRATION



INTERPRETATION:

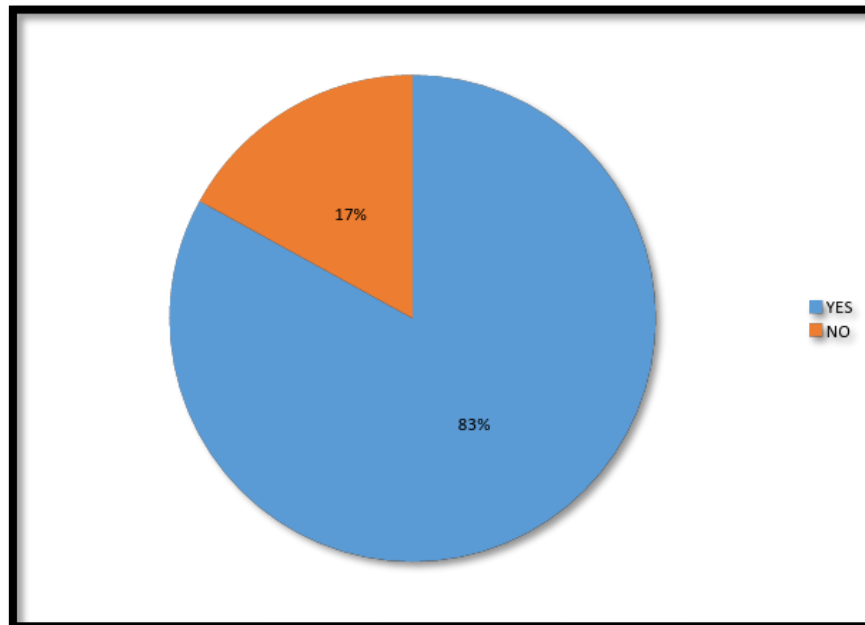
Checking the medicine before administration is yet another important step in the medication administration process.

Checking medicine can support reducing much of errors related to wrong dose.

62% nurses checked the medicine before administration

38% nurses did not check the medicine before administration.

PARAMETER 3: SIGNATURE ON FILE IMMEDIATELY AFTER MEDICATION



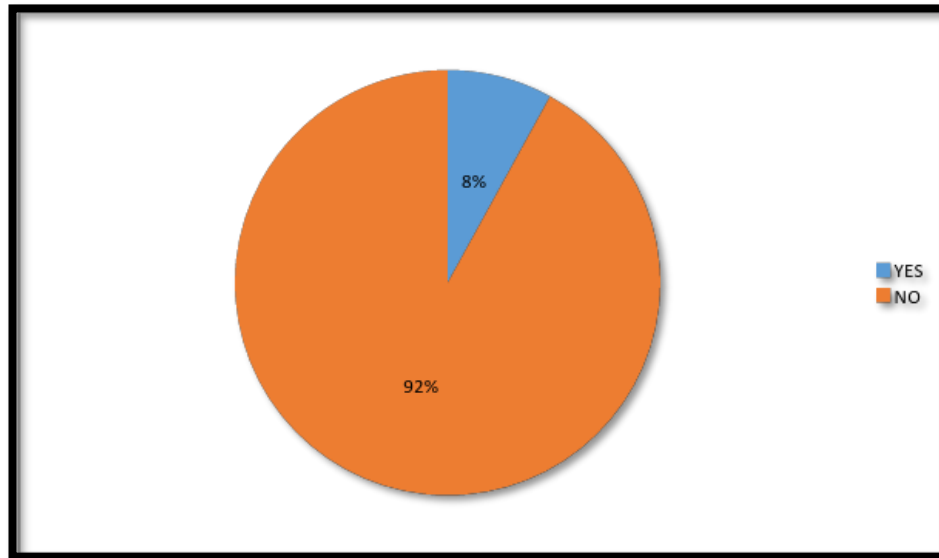
INTERPRETATION:

It was observed that 83% of the nurses sign immediately after administration, although rest 17% of the nurses do not sign immediately after administration, they took their leisure time to sign all the files.

INTERVENTION:

Nurses should be made aware about the medication error especially the double dose which most often happens due to missing signature from the file.

PARAMETER 4: EXPLANTION TO PATIENTS ABOUT MEDICINE



INTERPRETATION:

Only 8% of the nurses explained about medication benefits, uses, side effects and other information related to the medication. This explanation constitutes very important part of patient education.

Patient education is very important to understand the fears and needs of the patient.

More than 90% nurses in overall hospital did not explain to the patients about the medication.

This practice needs a lot of improvement.

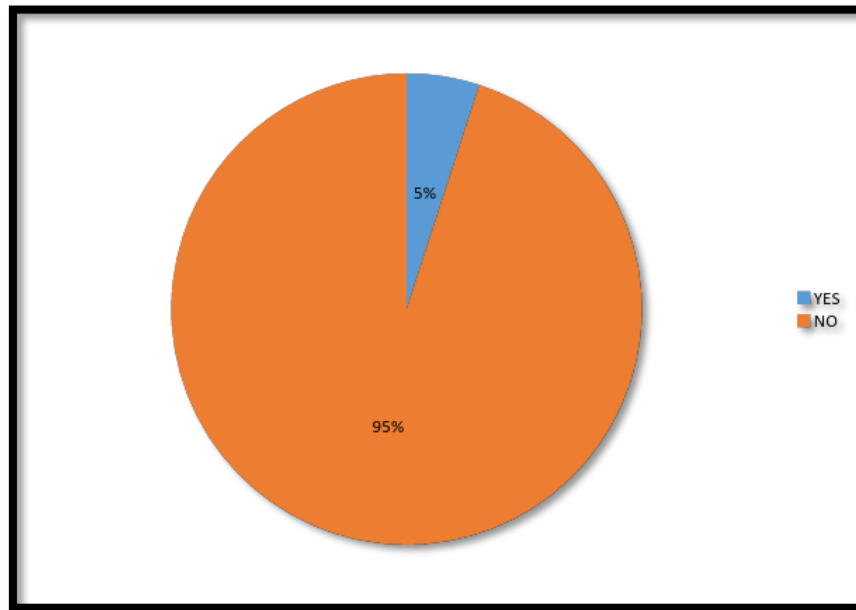
INTERVENTION:

Keeping in view the workload of nurses and other system factors, a simple intervention is designed and suggested.

Keep constant reminders of nurses that medication has to be explained to the patients.

Small posters depicting correct methods and steps for the drug administration, so that every time a nurse goes for medication administration he/she is reminded of the major responsibility that counts a lot.

PARAMETER 5: UID BAND CHECKING BEFORE DRUG ADMINISTRATION
ANALYSIS



INTERPRETATION:

UID band checking is one of the most important indicator of patient identification.

To the surprise it was observed that only 5% nurses follow the UID band checking for patient identification.

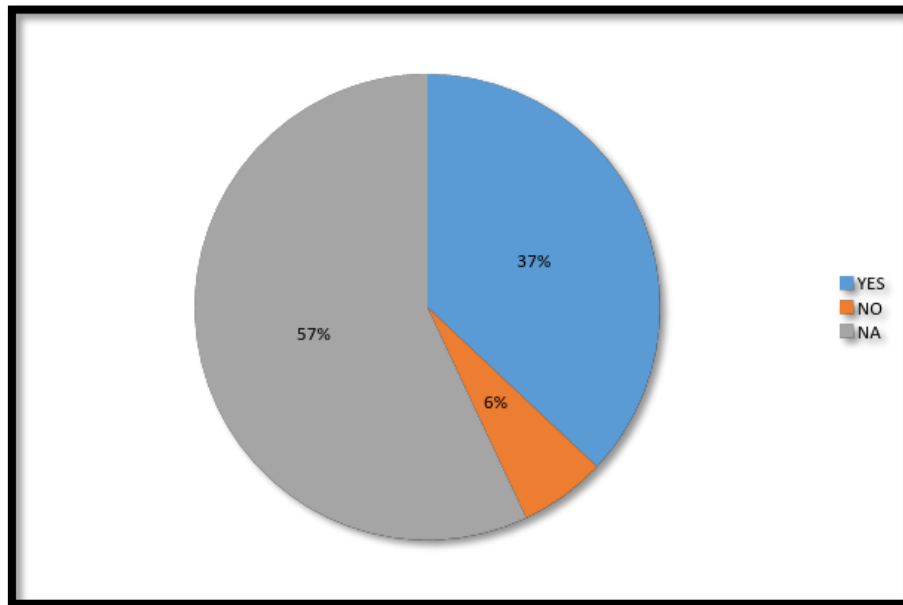
It can lead to increase in number of the medication errors.

Nurses mostly depend on their memory map for patient identification, which no doubt works most of times but it increases the risk for medication error.

INTERVENTION:

Conduct trial drills like nukkad nataks, dramas, for nurses to depict the importance of the UID as an patient identification indicator.

PARAMETER 6: MEDICINE GIVEN IN CUP



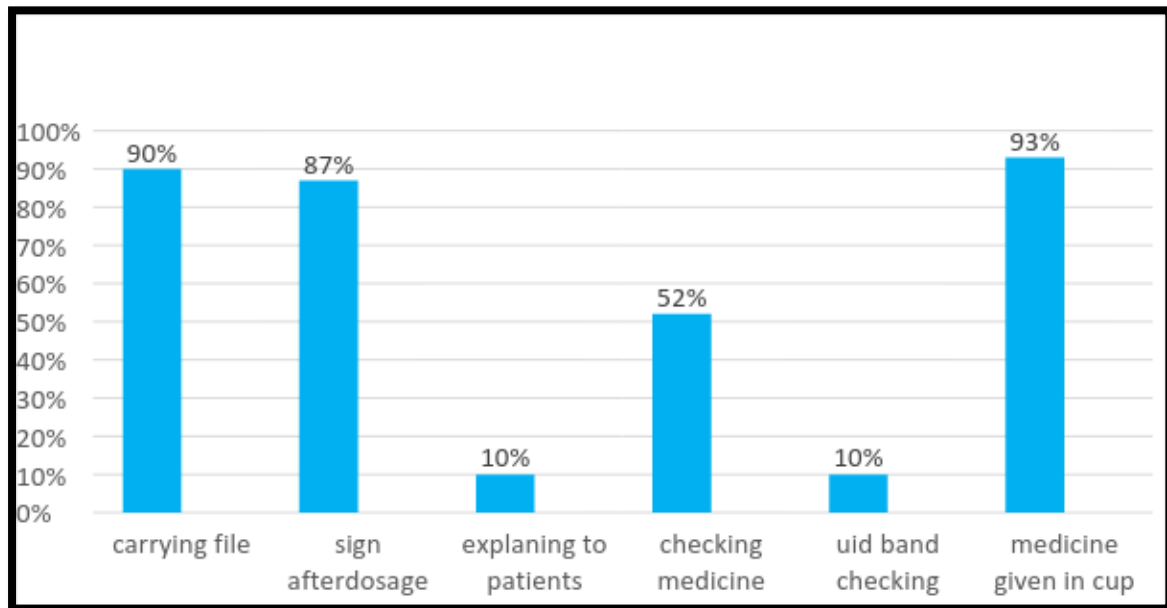
INTERPRETATION:

Out of all the cases only 6% cases were observed in which the oral medicine was not given in cup, medicine was given directly in the hands of the patient or the attender or the nurse directly used hands to give medicine to the patients.

It is important to make it 100% as it depicts the quality practices at the hospital'

To improve upon this factor innovative methods should be used to keep nurses following the methods like for example live demonstration by senior faculty or renowned faculty or some nursing idol.

COMPILED RESULTS



CONCLUSION

The study regarding the medication administration process at FORTIS MEMORIAL RESEARCH INSTITUTE depicted that most of the nurses do follow the protocol for the administration of medication. The small percentage of the nurses who do not follow the protocol for the medication administration are responsible for the medication errors that happen.

Explanation to the patients and UID band checking were the too big loop holes found in the study which showed decrease from the previous years, there is a dire need to improve on this category and recommendations and intervention plan was framed to improve on the lacking categories.

IMPROVEMENT PLAN

It is recommended to the hospital that to improve on the “explanation to patients” :

Train the nurses to increase the compliance for the explanation to the patients.

Place poster on patient bed side as a reminder for nurses.

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