Internship Training
At

Aakash Healthcare, Dwarka, New Delhi
(05 Feb – 05 May 2018)

By
Dr. Vaishali Sharma

Under the guidance of
Dr Pankaj Talreja

Post-Graduate Diploma in Health and Hospital Management
Batch 2016-18

International Institute of Health Management Research,
New Delhi
2018

To study the incidence of Medication Errors and Identify the Opportunities of Improvement in a Super Specialty Hospital. (Aakash Healthcare, Dwarka, New Delhi)

(05 Feb - 05 May 2018)

Internship and Dissertation Report Submitted in Partial Fulfilment of the Requirements for the Award of

Post-Graduate Diploma in Health and Hospital Management

Batch 2016-18

By

Dr. Vaishali Sharma
PG/16/068

Under the guidance of

Internal Mentor
Dr Pankaj Talreja
Professor
IIHMR, Delhi

External Mentor
Dr Tushar Palchoudhury
Aakash Healthcare, Dwarka, New Delhi

ABSTRACT

Introduction: Nowadays, any hospital's success is determined by quality of services offered by hospitals and also depends on patients' belief, interpretation, and decision. To meet the requirement and expectation of patients, the aim of hospitals is to provide quality care services. Quality embedment is needed in hospitals to achieve this important aim. In our country, patients have started looking for a Healthcare institution with top quality services. Therefore, to accomplish more support, competitive edge over the competitors and long-term profits better service qualities can be considered as a means.

Objective: To study the Incidence of Medication Errors in a super specialty hospital and to identify the areas of improvement.

Method: Patients admitted in the ward of Aakash Super speciality Hospital from Feb to April 2018 were studied.
A total of 100 prescriptions were audited for the study and total of 100 Patient Safety Events were examined.

Results: Medication errors were highest in month of January. Reason for this increase could be sudden increase in number of patients. Again there is increase in medication error rate because hospital was in process of shifting from manual medication writing to computerized medication order entry. The most common medication errors was during the administration stage (18), followed by transcription stage, (7). Errors during Prescription and dispensing were: 4The Medication error Rate was highest in January (7.16) followed by December (5.89), February (5.31), April (5.29), November (4.55), March (2.18), and October (1.93).In Prescription Audit, the Parameter with lowest compliance is allergies noted prior to prescription (22%), followed by drugs written in capital (27%), Registration no. of Doctor Written (36%), Time Written (40%), Name of the doctor mentioned (40%), Prescription written at appropriate location (43%), Whether do not use abbreviation used in prescription(55%), Date written(72%), route written (85%), Prescription order are clear and illegible(88%), Doctors signatures done(94%), Frequency written(96%), Dose written(96%), Prescribed time is appropriate(97%), Name of Medication Written (99%), Prescribed by registered Clinician(100%).

Conclusion: According to report, administration errors have the highest error rate. More training of staff is required to avoid Medication Errors. Reporting system should be promoted so that more and more events should be reported and corrective and preventive actions should be taken to avoid such errors in near future. Prescription audit parameters such as Allergies not noted and drugs should be noted in capital letters shows the lowest compliance percentage. This should be communicated to staff and more training should be conducted. EMR is already in place. Motivation of staff is required for fully implementing the system.

(Completion of Dissertation from respective organization)

The certificate is awarded to

Dr. Vaishali Sharma

in recognition of having successfully completed her

Internship in the department of

Quality Department

and has successfully completed her Project on

To Study the incidence of Medication Errors in a Super specialty Hospital

From 05 Feb –05 May 2018

Aakash Healthcare, Dwarka, New Delhi

She comes across as a committed, sincere & diligent person who has a strong drive and zeal for learning.

We wish her all the best for future endeavors

T. Palchoudhury

Dr Tushar Palchoudhury
GM- Quality and Compliance
Aakash HealthCare
Dwarka, New Delhi

TO WHOMSOEVER IT MAY CONCERN

This is to certify that Vaishali Sharma student of Post Graduate Diploma in Hospital and Health Management (PGDHM) from International Institute of Health Management Research, New Delhi has undergone internship training at Nakash Super Speciality Hospital from 05.02.2018 to 05.05.2018.

The Candidate has successfully carried out the study designated to him during internship training and his approach to the study has been sincere, scientific and analytical.

The Internship is in fulfillment of the course requirements.

I wish him all success in all his future endeavors.

Dr Supten Sarbadhikari
Dean, Academics and Student Affairs
IIHMR, New Delhi

Mentor
IIHMR, New Delhi

Certificate from Dissertation Advisory Committee

This is to certify that **Dr. Vaishali Sharma,** a graduate student of the **Post- Graduate Diploma in Health and Hospital Management** has worked under our guidance and supervision. He is submitting this dissertation titled **To study the incidence of medication errors in a Super Speciality Hospital in Aakash Healthcare at IIHMR, New Delhi**in partial fulfillment of the requirements for the award of the **Post- Graduate Diploma in Health and Hospital Management.**

This dissertation has the requisite standard and to the best of our knowledge no part of it has been reproduced from any other dissertation, monograph, report or book.

Dr SuptenSarbadhikari
Dean (Student Affairs and Academics)
IIHMR, New Delhi

18.05.2018.

Dr.PankajTalreja
Associate Professor
IIHMR, New Delhi

CERTIFICATE OF APPROVAL

The following dissertation titled ***"To Study the Incidence of Medication errors in a Superspeciality Hospital "*** is hereby approved as a certified study in management carried out and presented in a manner satisfactorily to warrant its acceptance as a prerequisite for the award of Post Graduate Diploma in Health and Hospital Management for which it has been submitted. It is understood that by this approval the undersigned do not necessarily endorse or approve any statement made, opinion expressed or conclusion drawn therein but approve the dissertation only for the purpose it is submitted.

Dissertation Examination Committee for Evaluation of Dissertation.

Name	**Signature**
DR. PANKAJ TALREJA	18.08.2018.
Dr. Malati Tiwari	

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Dr Vaishali Sharma** student of Post Graduate Diploma in Hospital and Health Management (PGDHM) from International Institute of Health Management Research, New Delhi has successfully completed internship training at Quality Department at Aakash Health Care, Dwarka, New Delhi from 05 Feb 18 to 05 May 18.

During his tenure with the organization he has successfully completed the project on the topic

"To Study the incidence of Medication Errors in a Super specialty Hospital"

During the tenure of her association with the organization, I found her sincere, hardworking and focused in the tasks and assignments allotted to her. Throughout the training she was found to be a keen learner and her performance during training was found to be excellent.

I wish her all success in all his future endeavors.

T. Palchoudhury 25/05/2018

Dr Tushar Palchoudhury
External Mentor
GM- Quality and Compliance
Aakash Health Care
Dwarka, New Delhi

INTERNATIONAL INSTITUTE OF HEALTH MANAGEMENT RESEARCH, NEW DELHI

CERTIFICATE BY SCHOLAR

This is to certify that the dissertation titled ....To study the incidence of Medication Error in a Superspecialty Hospital.... and submitted by (Name) ....Vaishali Sharma..... Enrollment No. ....PGP/16/068..... under the supervision of ....Dr. Pankaj Taneja..... for award of Postgraduate Diploma in Hospital and Health Management of the Institute carried out during the period from ....05.02.2018.... to ....05.05.2018..... embodies my original work and has not formed the basis for the award of any degree, diploma associate ship, fellowship, titles in this or any other Institute or other similar institution of higher learning.

Vaishali

Signature

FEEDBACK FORM

Name of the Student: Dr. VAISHALI SHARMA

Dissertation Organisation: AAKASH HEALTHCARE SUPER-SPECIALITY HOSPITAL, DWARKA, NEW DELHI-110.075.

Area of Dissertation: QUALITY DEPT.

Attendance: SINCERE & PUNCTUAL.

Objectives achieved: SHE HAS COMPLETED THE TASK VERY EFFICIENTLY AND IN A HIGHLY PROFESSIONAL MANNER.

Deliverables: HER PROJECT RECOMMENDATIONS SHALL BE HIGHLY HELPFUL FOR ANY HEALTHCARE ORGANIZATIONS.

Strengths: A DEDICATED EXECUTIVE WITH PROFOUND KNOWLEDGE & PLEASANT PERSONALITY.

Suggestions for Improvement: TO STUDY MORE BOOKS ON HEALTHCARE QUALITY.

Suggestions for Institute (course curriculum, industry interaction, placement, alumni): INSTITUTE SHOULD INCLUDE "HEALTHCARE QUALITY" AS ONE OF THE MAJOR SUBJECTS IN THE CURRICULUM.

Signature of the Officer-in-Charge/ Organisation Mentor (Dissertation)

T. Palchoudhury

Date: 09.05.2018
Place: NEW DELHI

ACKNOWLEDGEMENT

I, Dr. Vaishali Sharma, would like to extend my sincere and heartfelt obligation towards all the personages who have helped me in this endeavour. Without their active guidance, help, cooperation and encouragement, this dissertation would not have been possible.

I am highly obliged towards **Dr. Tushar Palchoudhury**, General Manager, Quality, Aakash Healthcare for allowing me to pursue my Dissertation project from Aakash Healthcare, Dwarka, Delhi.

In this institute I have had the privilege to get to know many people who generously shared their experiences and knowledge with me.

I wish to express my deep gratitude and regards **to Dr. Apurva Relan,** Assistant Manager, Quality for conscientious guidance, constant supervision and encouragement to accomplish the project.

I would also like to express my sincere gratitude to **Ms. Dolly Singh,** Manager Quality Aakash Healthcare for being helpful and guiding me throughout my training and answering the queries that came along the way.

I am also very thankful to all the staff of Aakash healthcare for their attention towards my work and helping me, which greatly added to my project. The administrative staff of the hospital has been very helpful to me and I would like to express my deep gratitude to all.

A special thanks to my Mentor **Dr. Pankaj Talreja** without whom this project would have been a distant reality. I am thankful for their aspiring guidance, invaluably constructive criticism and friendly advice during the project work.

Dr. Vaishali Sharma

TABLE OF CONTENTS:

ACRONYMS / ABBREVIATIONS

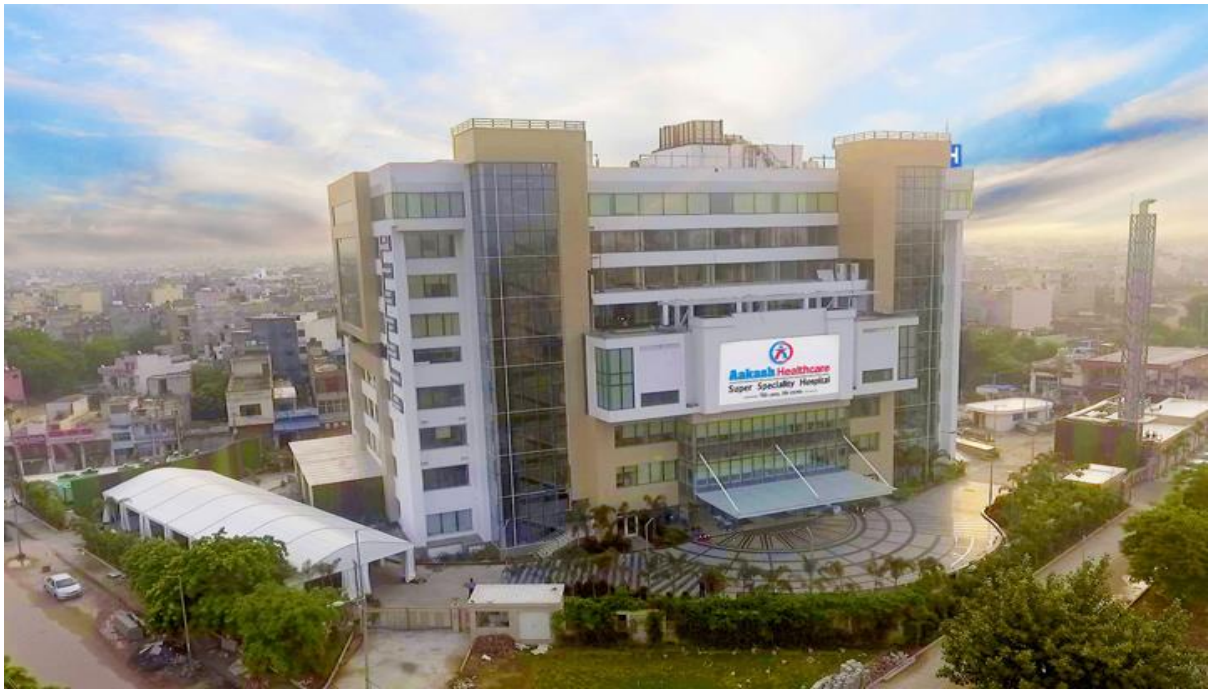
1. IPD- In Patient Department
2. NABH- National Accreditation Board for Hospitals & Healthcare Providers
3. JCI- Joint Commission International
3. ENT- Ear Nose Throat
4. ICU-Intensive Care Unit
5. CCU- Critical Care Unit
6. CTVS- Cardio Thoracic Vascular Surgery
7. IT-Information Technology
8. HDU – High Dependency Unit
9. OPD-Out Patient Department
10. NHS- National Health Scheme
11. IOM- Institute of Medicine
12. HAI- Hospital Acquired Infection
13. HIS – Hospital Information System
14. NCCMERP- National Coordinating Council for Medication Error Reporting and Prevention.
15. ISMP- Institute of Safe Medication Practices
16. LASA- Look Alike and Sound Alike drugs

AAKASH HEALTH CARE

BACKGROUND

WE CARE, HE CURES

Aakash Healthcare is a subsidiary of the Aakash Group and is a state of the art healthcare facility and the first smart hospital in Dwarka. Its patient-centric policy, erudite doctors and compassionate staff offer the best in class healthcare for everyone.



Aakash Healthcare:

Dr. Aashish Chaudhry envisioned a smart orthopedic clinic for the people of Dwarka, New Delhi. In November 2011

Aakash Healthcare is a multi-super specialty hospital, with state of the art infrastructure, path breaking technology, offering unrivalled healthcare services.

Dr. Aashish Chaudhry, the founder and Director of Aakash Healthcare, aims to make Aakash Healthcare the most preferred healthcare brand by providing compassionate, inexpensive, and world class healthcare services, with a talented team of doctors, and ultra-modern technology, ensuring speedy recovery.

VISION, MISSION & CORE VALUES

VISION-To become the most desired healthcare brand by providing compassionate, caring and world class services with the help of talented team of doctors, professionals and latest technology.

MISSION- To achieve highest patient satisfaction index by delivering patient-centric, best healthcare services amongst the local and the extended community

COREVALUES-

Infrastructure Highlights

- 230 Beds in Phase 1.
- 70 Bedded Medical and Surgical Critical Care Unit.
- 24x7 Cardiac Emergency & Trauma Services.
- 15 Bedded Dialysis Unit
- Advanced Neonatal ICU.
- Ward Bed Options - Suite, Deluxe, Twin Sharing and Economy.
- 8 Modular OTs.
- Flat Panel Cath Lab.
- State-of-the-art diagnostic equipments that include - 3.0 Tesla MRI, 128 slice CT scan, Flat panel C-Arm, and 4-D Ultrasound to name a few.
- Automated Waste & Laundry Management System for efficient waste management.
- Pneumatic Tube System.

SCOPE OF SERVICES

KEY SPECIALITIES-

Orthopaedics & Joint Replacement

Cardiology & Cardiac Surgery

Mother & Child

General & Minimal Access Surgery

Ophthalmology & Refractive Surgery

Nephrology

OTHER SPECIALITIES

- Anesthesiology & Pain Management
- Blood Bank & Transfusion Medicine
- Radiology
- Medical Oncology
- Neurology Interventional Radiology
- Endocrinology/Diabetes & Metabolic Disorders
- Pulmonology & Respiratory Medicine
- Hearing And Speech
- Lab Medicine
- ENT
- Gynecology
- Neurosurgery
- Dental Sciences
- ER & Trauma
- Obstetrics Cosmetology & Plastic Surgery
- Urology
- Critical Care
- G I Surgery
- Preventive Health Check Up
- Rheumatology
- Mental Health & Behavioral Sciences
- Physiotherapy &Rehabilitation
- Gastroenterology & Hepatobiliary Sciences
- Dermatology
- Internal Medicine

HOSPITAL DEPARTMENTS AND SERVICES-

CLINICAL SERVICES	SUPPORT SERVICES	UTILITY SERVICES
• OUT PATIENT DEPARTMENT • INPATIENT DEPARTMENT • ACCIDENT AND EMERGENCY DEPARTMENT • INTENSIVE CARE UNIT • DAY CARE UNIT • OPERATION THEATRE	• RADIOLOGY • PATHOLOGY LAB • PHARMACY • BLOOD BANK	• LAUNDRY SERVICES • HOUSEKEEPING • FOOD AND BEVERAGES

Hospital Facilities

(a)**Rooms**: At Aakash Healthcare there are various room categories as under :

(i) **Suite:** Suite at Aakash Healthcare has an adjacent living room with a separate washroom, Wi-Fi Connectivity, small refrigerator, a TV, a microwave, two lockers for safekeeping and personal belongings, full time nursing staff, a housekeeper, and integrated dining facility.

Deluxe: Deluxe room at Aakash Healthcare has an attendant bed, Wi-Fi Connectivity, small refrigerator, a TV, two lockers for safekeeping 4

And personal belongings, integrated dining facility for the attendant and full-time nursing staff available.

(ii) **Single Room:** Single room at Aakash Healthcare has an attendant bed, Wi-Fi connectivity, small refrigerator, a TV, a locker for personal belongings, and integrated dining facility.

(iii) **Twin Sharing:** Twin sharing rooms at Aakash Healthcare has a bed for attendant, a TV and a locker for personal belongings.

(iv) **Multi Bed Room:** Multi bed room at Aakash healthcare has chairs and a locker for personal belongings and essentials.

(b) **Cafeteria**: Cafeteria of Aakash Healthcare opens all day and night, with an assorted range of food and beverage options to choose from. It is located at the ground floor and is open to employees and visitors. Another healthy food corner setup by Pappa Curry is open from 8:00am to 9:00 pm.

(c) **Laundry Services**: Provision of Laundry services have been catered for in the hospital.

(d) ATM.

(e) **Lounge for visitors**: Easy chairs have been provided on the 2nd floor.

(f) **Internet Access**: The entire facility is Wi-Fi enabled.

(g) **Travel Desk**: Aakash Healthcare has provision of travel desk.

(h) **Pharmacy**: Aakash Healthcare has a 24x7 pharmacy located on the ground floor, and one can get medicines anytime one wants.

(i) Prayer and meditation room.

PART- B

DISSERTATION

INTRODUCTION

Nowadays, any hospital's success is determined by quality of services offered by hospitals and also depends on patients' belief, interpretation, and decision. To meet the requirement and expectation of patients, the aim of hospitals is to provide quality care services. Quality embedment is needed in hospitals to achieve this important aim. In our country, patients have started looking for a Healthcare institution with top quality services. Therefore, to accomplish more support, competitive edge over the competitors and long-term profits better service qualities can be considered as a means.

Hospital Management and healthcare providers do not share whenever any mishap or event occurs in a hospital. As a result, the same error occurs again and again in many healthcare institutions and patients keep on to be suffering from these avoidable errors. Reporting system helps in identifying the problem area and also to identify any process flaws. This will help in improving the efforts of healthcare providers and chances of such errors shall be reduced.

(NCCMERP) defines a "Medication Error" as follow

"A medication error is any preventable event that may cause or lead to inappropriate medication use or patient harm while the medication is in the control of the health care professional, patient, or consumer. Such events may be related to professional practice, health care products, procedures, and systems, including prescribing, order communication, product labeling, packaging, and nomenclature, compounding, dispensing, distribution, administration, education, monitoring, and use."

The Council realized the need for a standardized categorization of errors. On July 16, 1996, the NCC MERP adopted a **Medication Error Index** that classifies an error according to the severity of the outcome. It is hoped that the index will help health care practitioners and institutions to track medication errors in a consistent, systematic manner.

ISMP MERP is an internationally recognized program for healthcare professionals to share potential or actual medication errors that occurred at their workplace. Reporting an error or hazardous condition is simple and confidential.

Source: http://www.nccmerp.org/types-medication-errors

Classification of Medication errors

Based on stage of medication use process:

1. Prescription error

2. Transcription error

3. Dispensing error

4. Administration error

Cause of Medication Errors:

- Lack of training of Staff
- Lack of information of the patient
- Lack of communication between and with patients

Factors associated with computerized information systems

- Difficult processes for generating first prescriptions (e.g. drug pick lists, default dose regimens and missed alerts)
- Difficult processes for generating correct repeat prescriptions

Detection methods used to investigate medication errors and adverse events: Patient monitoring, Direct care observation, Computer monitoring, Voluntary reporting, Incident reporting (sentinel events).One of the ways to find out medication errors is through Prescription Audit.

Prescription Errors are one of the most common errors. Errors can occur during choosing of drugs, dose, and route of administration and frequency of administration. Reasons for inappropriate prescription could be inaccurate writing, illegible handwriting, using “do not use abbreviations” etc.

General Objectives: To study the Incidence of Medication Errors in a super specialty hospital and to identify the areas of improvement.

Specific Objectives:

1. To study the medication errors from reporting of Patient Safety events.
2. To study the prescription errors with the help of prescription audit.
3. To study and analyze the compliance for appropriate prescription.

RATIONALE OF STUDY:

Medication errors are one of the main contributors to adverse events of patients. Medication Errors prolongs hospital stay. The importance of reporting the medication errors is to prevent the future events. Error reporting helps in knowing the reason of event, Root cause analysis helps in identifying the possible process flaws that causes adverse events and also helps in identifying corrective and preventive actions taken to improve in near future.

Prescription error is one of the commonest medication errors. Prescription error include over prescription, under prescription or inappropriate prescription including illegible handwriting. Prescription audit is one of the important tools to avoid misuse of drugs and improve rational use of drugs. The performance of the health care providers related to appropriate use of drugs can be assessed by analyzing the different prescribing indicators. There is a need to standardize the prescribing patterns so that all essential information is included and will be helpful for better patient care.

REVIEW OF LITERATURE:

Medication Errors: An Overview for Clinicians
(Christopher M. Wittich, MD, PharmD; Christopher M. Burkle, MD, JD; and William L. Lanier, MD)
This article gave insight that clinicians face many consequences after medication errors, like lack of patient trust, civil actions, and criminal charges etc. medication errors can be reduced by using computerized system for medication errors, medical reconciliation, better labeling of drugs. Whenever such event occurs, patient wants that hospital should tell the patient and family clearly and timely, followed by apology from the hospital and efforts and assurance by staff to prevent such future events. Learning more about medication errors will increase clinician's knowledge about medication errors and this will increase their ability to provide safe medication to the patients. Factors like look alike and sound alike medication (LASA), do not use abbreviations, medications with low therapeutic index, cognitive biases will further increases the chances of medication errors.

Medication errors in the Middle East countries: A systematic review of the literature
Zayed Alsulami & Sharon Conroy & Imti Choonara

The main aim of this systematic review is to review all the studies on medication error incidence and types of medication errors and other contributing factors that lead to medication errors. Database used are Embase, Medline, Pubmed, the British Nursing Index and the Cumulative Index to Nursing & Allied Health Literature. The common findings are: prescription errors with incorrect dose have the highest incidence, followed by wrong frequency and wrong strength. The main intervention was computerized physician order entry and intervention by clinical pharmacologist. Inadequate knowledge of drugs was one of the factors responsible for the prescribing and administration errors. Most of the errors were related to antihistamine drugs antibiotic medications and anticoagulant drugs. In addition, medications reported in studies conducted on paediatric patients found that antihistamines, paracetamol, electrolytes and bronchodilator drugs were the most common drugs associated with errors.

Statistical Analysis of Medication Errors in Delhi, India
Pankaj Agrawal, Ajay Sachanb, Rajeev K Singlac, Pankaj Jain

The main objective of this study was to find out the occurrence of medication errors and risk factors responsible for medication errors in inpatient settings in general hospitals of Delhi. In this study 20 doctors, 30 nurses, 45 pharmacists, 500 patient charts were involved in the study. Around 88 cases were resulted in adverse drugs reactions out of 1063 prescription causing 8.2% of cases. This shows that 82 cases were resulted in adverse drug reaction out of 1000 cases, in the inpatients of OPD settings of general hospitals and clinics in Delhi. So this shows high occurrence of medication errors in this study. Study shows younger generation was at high risk of medication errors whereas male and female were at equal risk. Most commonly drugs responsible for adverse reactions were Diclofenac and Ceftriaxin.

Medication error prevalence

Ana Bele´n Jime´nez Mun˜ oz, Antonio Muin˜o Miguez, Marı´a Paz Rodriguez Pe´rez and Marı´a Dolores Vigil Escribano Hospital General, Universitario Gregorio Maran˜ o´n, Madrid, Spain, and Marı´a Esther Dura´n Garcia and Marı´a Sanjurjo Saez Pharmacy Department, Hospital General, Universitario Gregorio Maran˜ o´n, Madrid, Spain

In this study Medical reconciliation was found to be one of the important factors for medication errors. Doctors didn't check the previous medication that was already taken by the patient. There are various ways of identifying the medication errors but self reporting of errors, sentinel event reporting are most common. In this study most common errors were occurred during the transcription phase followed by prescription phase and then dispensing and administration. Among the prescription errors most common reason were unclear medical orders, use of abbreviations, illegible handwriting, and inappropriate knowledge of medication of doctors. This study also highlight that administration errors were most severe as they were identified after drug has been given to the patient. Most common error was administration omission.

Medication Errors and their Effect on the Healthcare System: A Comparative Analysis

Jonathan Papazides

Adapted model for a medication error reduction program. Displays the inputs, Outputs and outcomes of a successful medication error-reduction program based on the three Models discussed in this paper. Adapted by J. Papazides from "Pediatric medical errors part 2: Case commentary. A source of tremendous loss," by A. Catlin, 2004, *Pediatric Nursing, 30*(4), p. 333; "A system to describe and reduce medical errors in primary care," by V. Kaprielan et al., 2008, *Agency for Healthcare Research and Quality*, U.S. Department of Health and Human Services, 4(1), p. 145 "Using the FDA's MedWatch program," by J. McKee, 2011, *American Academy of Ortopaedic Surgeons*, p. 1; and "FDA's MedWatch program turns 20: What's new?" by B. Rose, 2013, *American Pharmacists Association,* p. 1.

METHODOLOGY:

Study period: The study duration was from 05 Feb to 05 May. First two weeks of the study period was utilized for gaining work experience and on the job training. Thereafter collection and analysis of data on the selected topic for dissertation was done in addition to the job being done as a Management Trainee.

Study Population: Patients admitted in the ward of Aakash Super speciality Hospital from Feb to April 2018.

Sampling Technique: Simple Random Sampling was used.

Sample Size:
A total of 100 prescriptions were audited for the study.
A total of 100 Patient Safety Events were examined.

Study Tool/ Data Collection Tool: suitably evolved checklist keeping in view the quality guidelines.

Data Source:

- Secondary data was obtained for prescription audit by collecting required information from the active files in ward from Feb2018 to April 2018.
- Secondary data was obtained for examining medication errors from Patient Safety Events data.

Data Analysis: The Data was analysed with the help of Microsoft Excel 2007.

Formula for calculating Medication Error Rate:

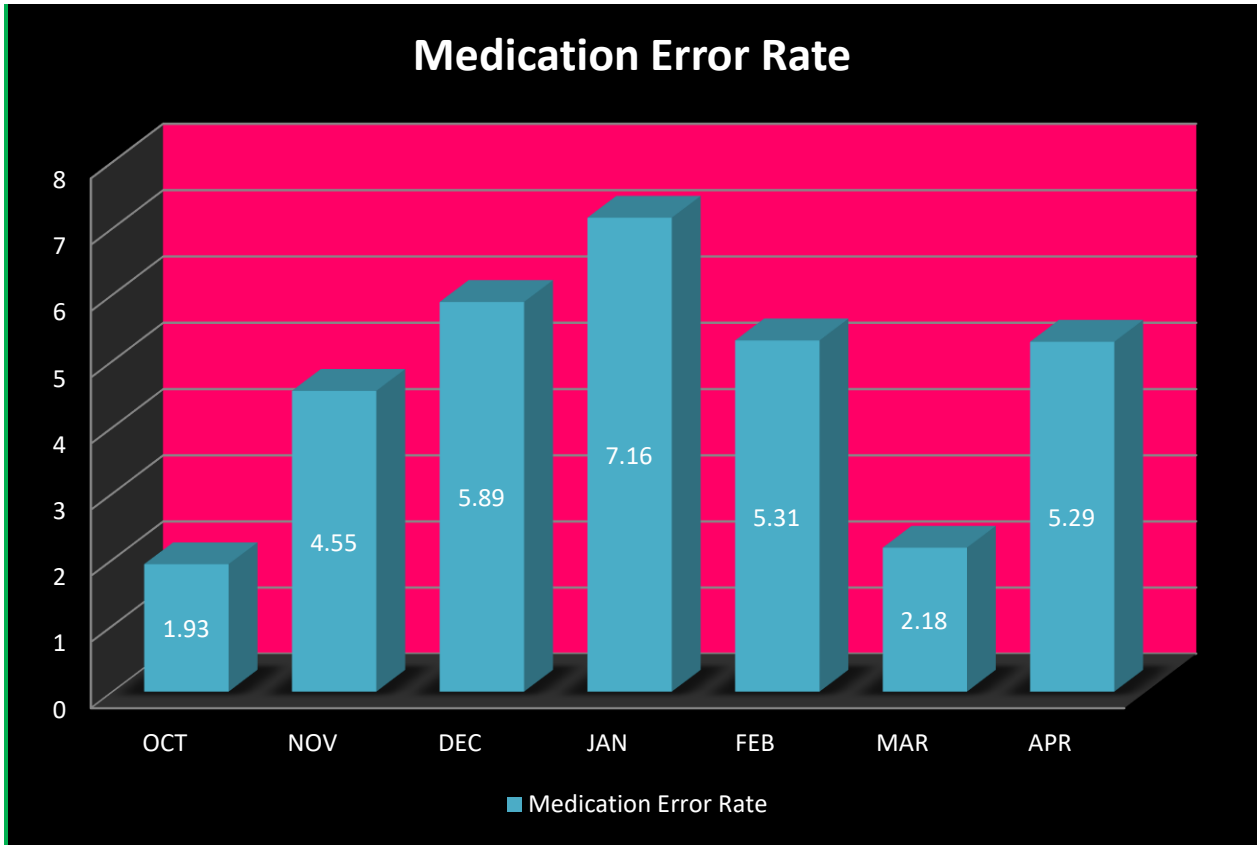
$$\text{Incidence of Medication Error} = \frac{\text{Total number of Medication Errors}}{\text{No. of Patient Days}} * 1000$$

RESULTS AND FINDINGS:

1. **No. of medication Error Rates: : Medication error rate in Oct was 1.93, Nov (4.55), Dec (5.89), Jan(7.16), Feb(5.31), March(2.18), April(5.29)**

Month	No. of Medication Errors	No. of In Patients days	Medication Error Rate
OCT	1	518	1.93
NOV	3	658	4.55
DEC	4	678	5.89
JAN	8	1117	7.16
FEB	6	1228	5.31
MAR	3	1375	2.18
APR	8	1510	5.29

Table: 1



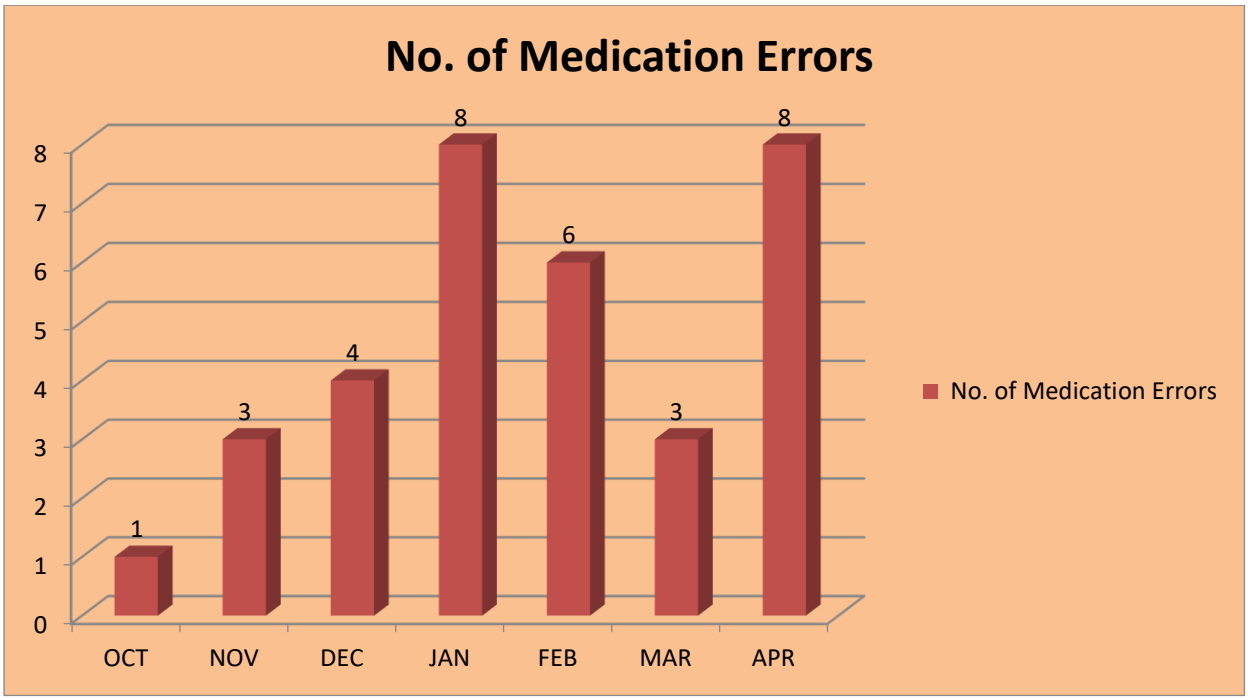
Graph: 1

2. No. of Medication Errors from October 2017- April 2018

No. of medication errors in Oct(1), Nov(3), Dec(4), Jan(8), Feb(6), March(3), April(8).

Month	No. of Medication Errors
OCT	**1**
NOV	**3**
DEC	**4**
JAN	**8**
FEB	**6**
MAR	**3**
APR	**8**

Table: 2



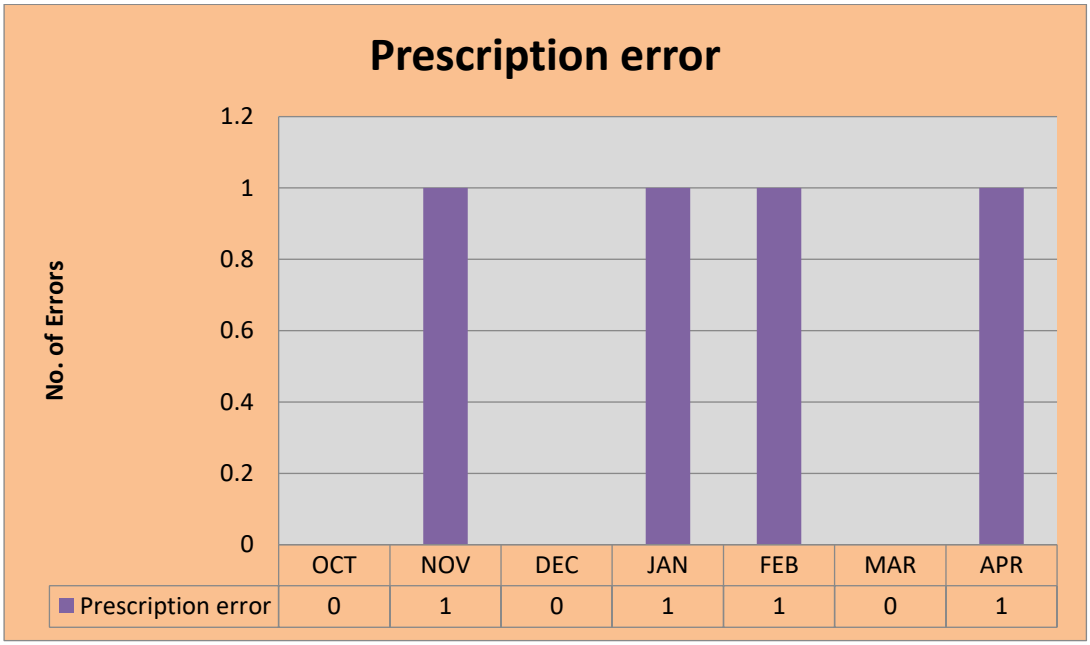
Graph: 2

3. Types of Medication Errors Month wise:

1. **Prescription Error: No. of Prescription errors in Oct (0), Nov (1), Dec (0), Jan (1), Feb (1), March (0), April (1).**

Month	Prescription error
OCT	0
NOV	1
DEC	0
JAN	1
FEB	1
MAR	0
APR	1
Total	**4**

Table: 3

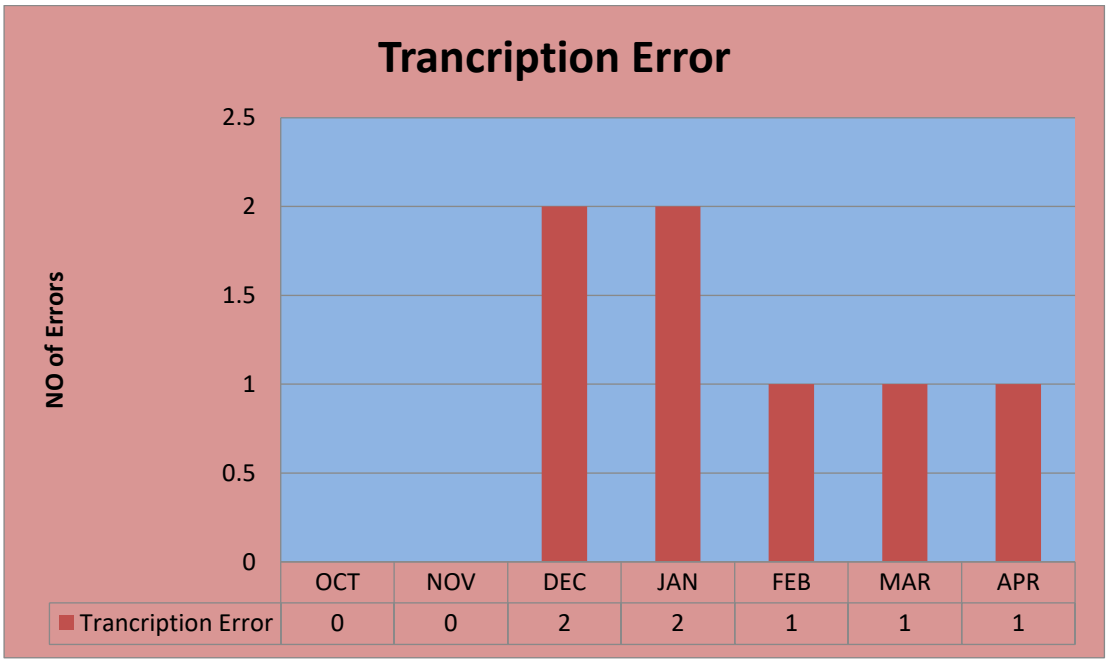


Graph: 3

2. **Transcription Error: No. of Transcription errors in Oct (0), Nov (0), Dec (2), Jan (2), Feb (1), March (1), April (1).**

Month	**Transcription Error**
OCT	0
NOV	0
DEC	2
JAN	2
FEB	1
MAR	1
APR	1
Total	**7**

Table:4

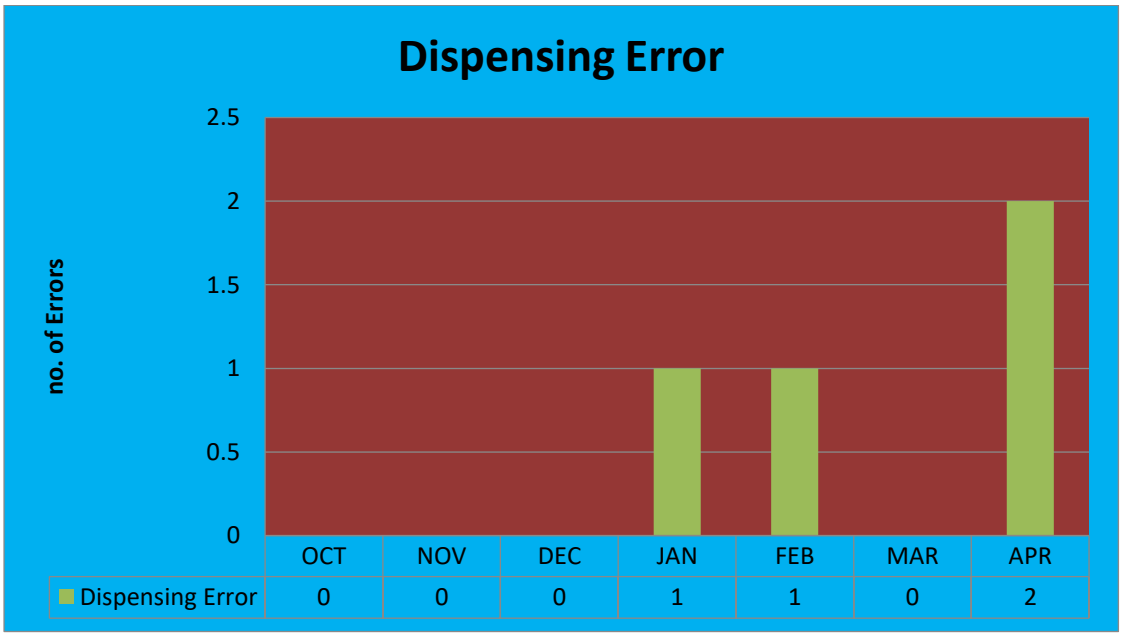


Graph: 4

3. Dispensing Error**: No. of Dispensing errors in Oct (0), Nov (0), Dec (0), Jan (1), Feb (1), March (0), April (2).**

Month	**Dispensing Error**
OCT	0
NOV	0
DEC	0
JAN	1
FEB	1
MAR	0
APR	2
	4

Table: 5

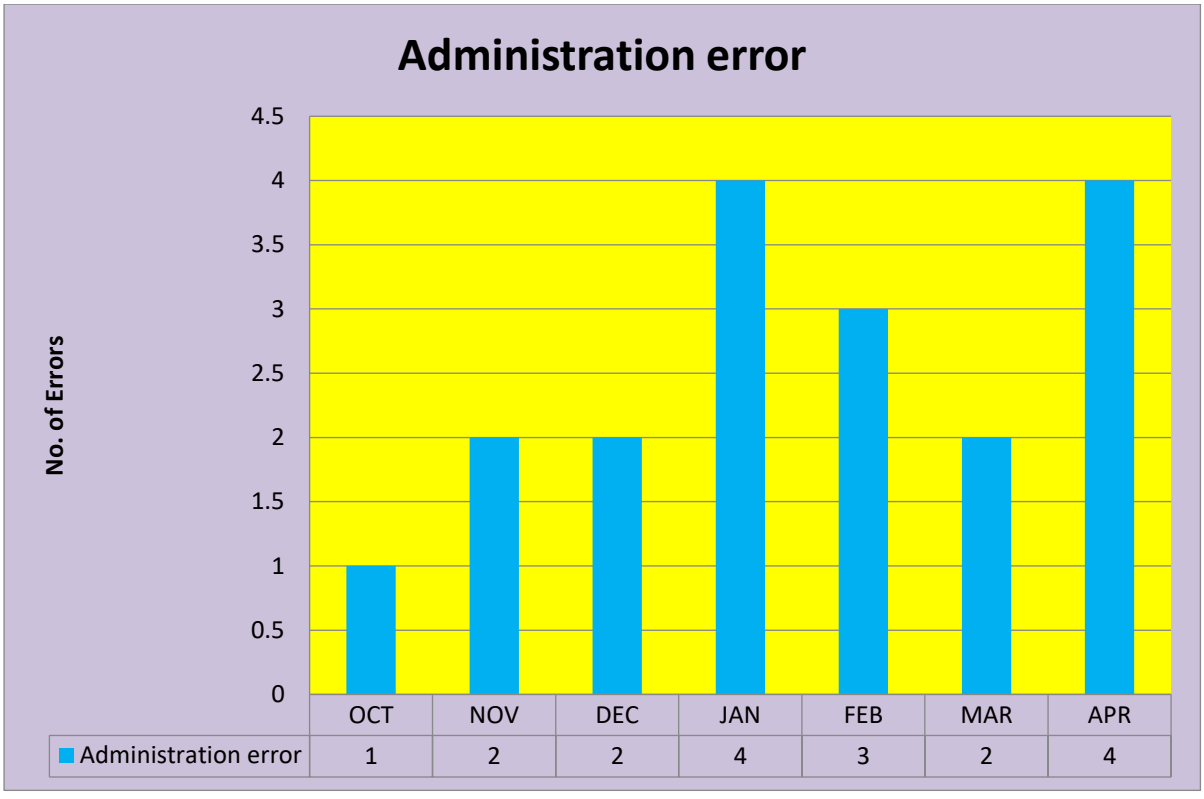


Graph: 5

4. Administration Error: **No. of Administration errors in Oct (1), Nov (2), Dec (2), Jan (4), Feb (3), March (2), April (4).**

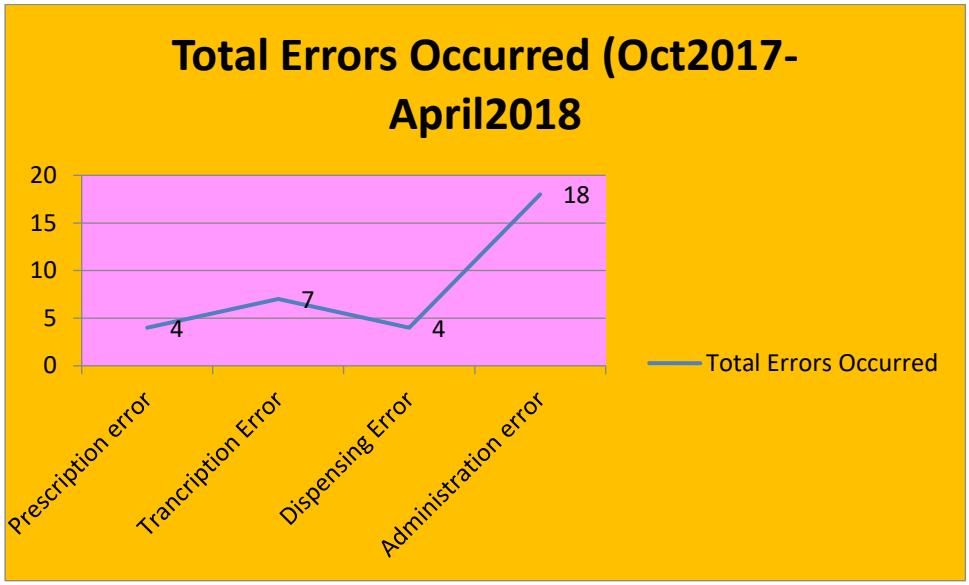
Month	**Administration error**
OCT	1
NOV	2
DEC	2
JAN	4
FEB	3
MAR	2
APR	4
	18

Table: 6



Graph: 6

Chart showing Trends of various types of Medication Errors:

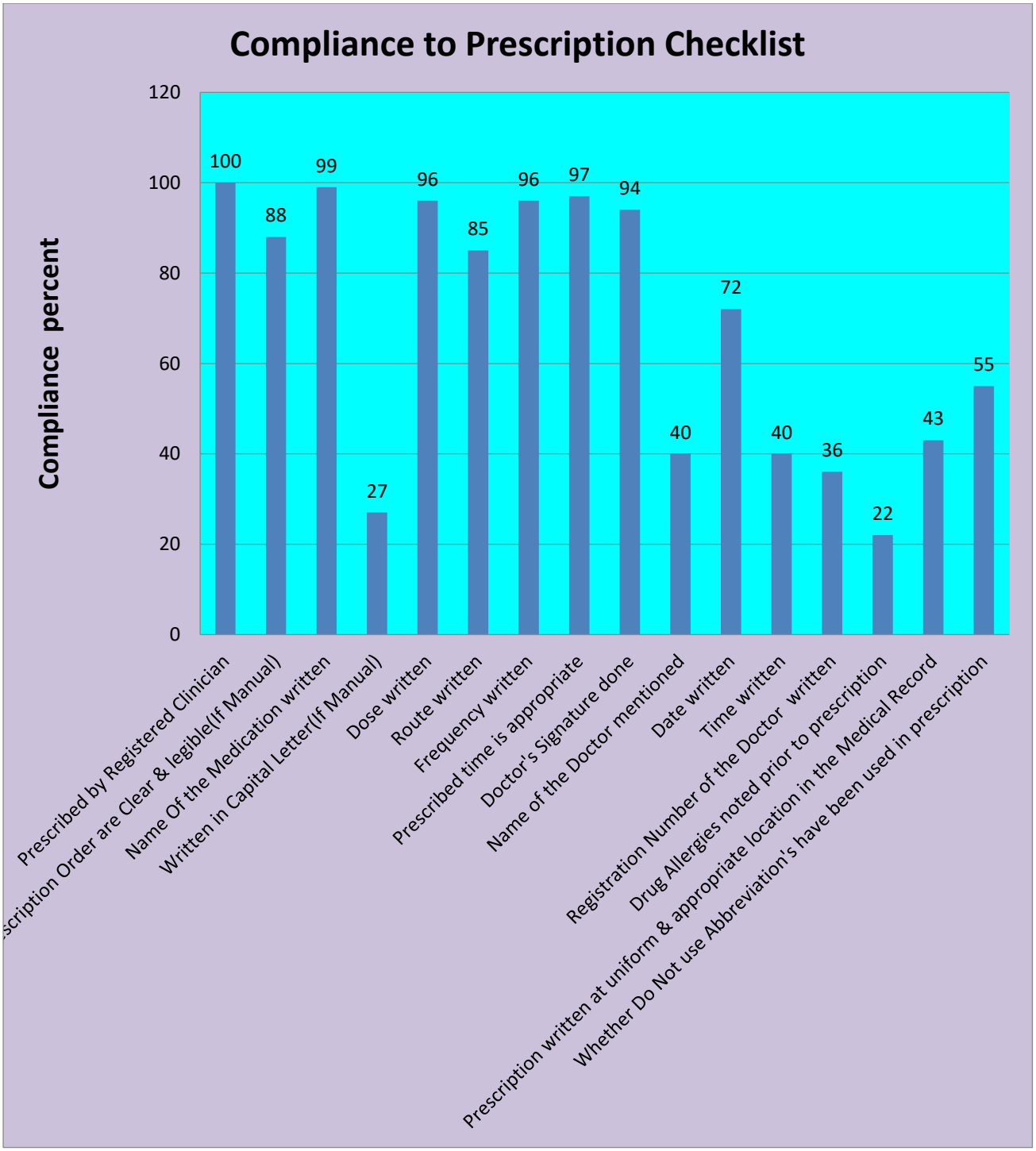


Graph: 7

Compliance of Appropriate Prescription:

SR NO:	Audit Parameter	Compliance %
1	**Prescribed by Registered Clinician**	100
2	**Prescription Order are Clear & legible(If Manual)**	88
3	**Name Of the Medication written**	99
4	**Written in Capital Letter(If Manual)**	27
5	**Dose written**	96
6	**Route written**	85
7	**Frequency written**	96
8	**Prescribed time is appropriate**	97
9	**Doctor's Signature done**	94
10	**Name of the Doctor mentioned**	40
11	**Date written**	72
12	**Time written**	40
13	**Registration Number of the Doctor written**	36
14	**Drug Allergies noted prior to prescription**	22
15	**Prescription written at uniform & appropriate location in the Medical Record**	43
16	**Whether Do Not use Abbreviation's have been used in prescription**	55

Table: 7


Compliance to Prescription Checklist
Compliance percent
120
100
80
60
40
20
0
100
88
99
27
96
85
96
97
94
40
72
40
36
22
43
55
Prescribed by Registered Clinician
scription Order are Clear & legible(If Manual)
Name Of the Medication written
Written in Capital Letter(If Manual)
Dose written
Route written
Frequency written
Prescribed time is appropriate
Doctor's Signature done
Name of the Doctor mentioned
Date written
Time written
Registration Number of the Doctor written
Drug Allergies noted prior to prescription
Prescription written at uniform & appropriate location in the Medical Record
Whether Do Not use Abbreviation's have been used in prescription

Graph: 8

Key Findings of Prescription audit:

- 12% of the prescriptions were not clearly written.
- 73% of the prescriptions were not written in capital letters.
- In 60% of cases, Name of the Doctor was not written.
- In 60% of Cases, Time was not written.
- In 64% of Prescription, registration No. of doctor was not written.
- In 78% of cases, Allergies were not documented in Prescription.
- Do not use Abbreviations were used in 45% of Cases.

Analysis:

- Medication errors were highest in month of January. Reason for this increase could be sudden increase in number of patients.
- Again there is increase in medication error rate because hospital was in process of shifting from manual medication writing to computerized medication order entry.

DISCUSSION:

The most common medication errors was during the administration stage (18), followed by transcription stage, (7). Errors during Prescription and dispensing were: 4

The Medication error Rate was highest in January (7.16) followed by December (5.89), February (5.31), April (5.29), November (4.55), March (2.18), and October (1.93).

In Prescription Audit, the Parameter with lowest compliance is allergies noted prior to prescription (22%), followed by drugs written in capital (27%), Registration no. of Doctor Written (36%), Time Written (40%), Name of the doctor mentioned (40%), Prescription written at appropriate location (43%), Whether do not use abbreviation used in prescription(55%), Date written(72%), route written (85%), Prescription order are clear and illegible(88%), Doctors signatures done(94%), Frequency written(96%), Dose written(96%), Prescribed time is appropriate(97%), Name of Medication Written (99%), Prescribed by registered Clinician(100%).

RECOMMENDATIONS:

- For increasing the compliance of name of doctor written in prescription audit, every doctor should be given stamp comprising of Name, designation, registration number.
- Overwriting in prescription should be avoided as it can lead to confusion.
- Updated list of current medication should be listed in patients file and shall `be updated at each visit.
- Avoid problematic abbreviations.
- To promote medical reconciliation.
- Although we are using EMR, but CPOE shall be promoted more robustly for avoiding medication errors.
- Allergies shall be asked from Patients before writing any prescription.
- For avoiding the missed doses, active drug order sheet shall be taken out before administration of drugs.

CONCLUSION:

- According to report, administration errors have the highest error rate.
- More training of staff is required to avoid Medication Errors.
- Reporting system should be promoted so that more and more events should be reported and corrective and preventive actions should be taken to avoid such errors in near future.
- Prescription audit parameters such as Allergies not noted and drugs should be noted in capital letters shows the lowest compliance percentage.
- This should be communicated to staff and more training should be conducted.
- EMR is already in place. Motivation of staff is required for fully implementing the system.

LIMITATIONS:

1. Sample size was small.

2. Retrospective study was conducted, so whatever event has happened can't be reversed. Whatever harm is done to patient; it's not possible to reverse that.

Annexure: I

Prescription Audit Checklist		UHID	UHID	UHID	UHID	UHID
S.No.	**Checkpoints**					
1	Prescribed by Registered Clinician					
2	Prescription Order are Clear & legible (If Manual)					
3	Name of the Medication written					
4	Written **in** Capital Letter (If Manual)					
5	**Dose** written					
6	**Route** written					
7	**Frequency** written					
8	Prescribed time is appropriate					
9	Doctor's **Signature** done					
10	**Name of the Doctor** mentioned					
11	**Date** written					
12	**Time** written					
13	**Registration Number** of the Doctor written					
14	Drug Allergies noted prior to prescription					
15	Prescription written at uniform & appropriate location in the Medical Record					
16	Whether Do Not use Abbreviation's have been used in prescription					

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