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MEDICATION ERRORS IN A TERTIARY CARE HOSPITAL

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As per '**United States National Coordinating Council for Medication Error Reporting**' 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.

Study objectives

To identify nature, extent and causes of Medication Errors in hospital wards and ICU.

To design strategies to prevent medication errors.

To resolve medication errors in order to improve patient safety and therapeutic outcome.

To assess cause of medication errors in general medicine wards.

To design strategies to prevent Medication errors.

Todetermine the predictors of medication errors in general medicine wards.

STUDY DESIGN: Prospective Study has been conducted in 150 bedded Tertiary Care Hospital. Descriptive Format to capture various kinds of errors has been used.

TARGET POPULATION

Target Populations are patients in IPD, Doctors, Nurses and Pharmacists from IPD Pharmacy of the hospital.

SAMPLE SIZE

1200 Inpatient Medication Charts have been reviewed to complete the study.

STUDY METHOD AND DURATION

Various areas of the hospital were visited daily for 6 months to collect the relevant data. Patients were selected on random basis. Medscape Drug Interaction Checker Software

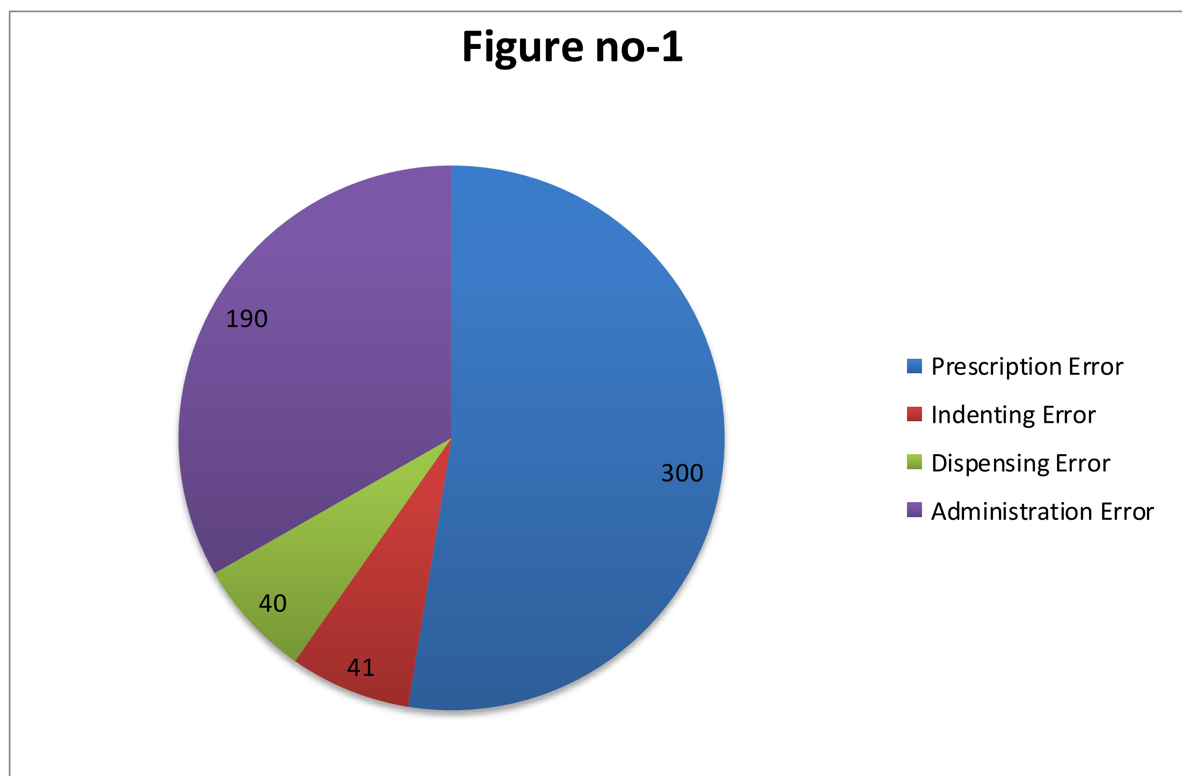
(Version 4.6.2) has been used to check Drug Drug Interactions. A prospective observational study was conducted in medicine wards,surgical ,cardiac & general wards for a duration of 6 months. Data collection was done and was assessed for the medication errors. Predictors of medication errors were determined.

ANALYSIS

Weekly analysis of the findings was done and meetings were called with Incharges of the wards and ICU's to communicate about errors and to plan the improvement steps .

RESULTS

A total of 571 MEs were identified in 390 patients from 1200patients reviewed. The incidence of MEs in GM wards was 20.4%.



Types of Medication errors in Micu, Sicu, Ccu, General Wards.

Strategies to prevent ME's

Monitoring error: Occurs due to insufficient monitoring by clinicians and can be prevented by systematically documenting medical records

Compliance error: Patient counseling by clinical pharmacists and Prescribing in generic name is also useful

Drug duplication: Prescribing by generic name in the treatment chart and prescriptions to avoid confusions

Wrong frequency: Proper treatment chart review by clinical pharmacist and prescribing with consulting clinical pharmacists as needed

Drug use without indication: Drug utilization evaluation may be done for such drugs and results can be presented to hospital authorities.

Descriptive Format used for capturing Data.

MEDICATION ERROR AUDIT-IP		
Name of Patient/ID		
Age/Sex		
Consultant Name		
Area/Diagnosis		
Date of Audit		
PRESCRIPTION PARAMETERS		
Drug name in Capitals	Total Drugs: Missed in:	Total Drugs: Missed in:
Allergies	Y / N	Y / N
Drug Form	Appropriate in:	Appropriate in:
Dose	Appropriate in:	Appropriate in:
Frequency	Appropriate in:	Appropriate in:
Route	Appropriate in:	Appropriate in:
Abbreviations	Abbreviations Used:	Abbreviations Used:
Drug Duplication	Y / N	Y / N
Formulary Drug Prescribed	Out of Formulary:	Out of Formulary:
Possibility of Drug Drug Interaction	Y / N	Y / N
Possibility of Food Drug Interaction	Y / N	Y / N
Doctor Signature	Y / N	Y / N
OTHERS		
Any Administration Error		
Any Indenting Error		
Any dispensing Error		
High Risk Drug Highlighted	Y / N / NA	Y / N / NA
Signature of Administration Staff	Total doses Given Signatures on:	Total doses Given Signatures on:
Signature of Two nurses on High Alert Medications	Y / N / NA	Y / N / NA
Comments		
Signature of Auditor		

OUTCOME OF THE STUDY: Errors captured are divided into following categories**:**

Prescription Errors: which have been further divided into

A. Illegible Prescription
B. Drug Prescribed with Known Allergy
C. Wrong /Missed Dose
D. Wrong/Missed Frequency
E. Wrong/Missed Route
F. Wrong/Missed Form
G. Incorrect Drug Selection for patient
H. Drug Duplication

I. Drug Drug Interaction
J. Use of Prohibited Abbreviations
K. Food Drug Interaction

Indenting Errors: which have been further divided into

A. Indent for wrong patient
B. Wrong medicine Indent
C. Wrong Dose of medicine indented
D. Wrong Form of medicine indented (e.g tablet instead of Injection)
E. Indented without prescription

Dispensing Errors: which have been further divided into

A. Wrong Medicine dispensed
B. Wrong dose dispensed
C. Wrong form dispensed
D. Dispensed without prescription

Administration Errors: which have been further divided into

A. Dose Missed
B. Inaccurate Dose (Extra or Less Dose)
C. Error in Dosing Interval (Early or late administration)
D. Wrong Drug administered to study patient
E. Wrong Route of Administration.
F. Wrong Duration of therapy (Stopped Early or continued without orders)

Improvement measures

- Corrective actions were taken on spot whenever possible. For instance :doses of drugs were adjusted, time of administration was adjusted if Drug Drug Interactions were found.
- Meetings were called between Pharmacy and Nursing staff to remove the communication barriers between them. They could openly discuss the problems faced by them from each other.
- Trainings were given related to Medication Errors.
- Common Drug Drug Interaction list was prepared as per the Drugs available in Hospital Formulary and was distributed to all Doctors and Nursing Staff.
- Shifting/Rotation of the staff for exposure to work environment of various areas.

- Indenting Times have been segregated for various areas in order to avoid rush in pharmacy. Times were segregated after mutual agreement between various In charges of the different areas as per workload of their areas. Indents only in case of emergency are accepted out of turn
- Most common reasons for MEs in medicine wards were routine practice which needs to be more rationalized..
- Most of the MEs can be prevented if patients are followed correctly.
- Hospital authorities must take necessary actions to control MEs which are easily preventable. Strategies to prevent MEs should be designed and affectively implemented.

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