



A sustainable approach to reduce repeated medication error in a multispecialty tertiary care hospital



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INTRODUCTION

Medication Error is a preventable event. Controlling and preventing the medication error is of high importance for patient safety. However, repeated medication error has a tendency to pass through the preventive mechanism of a hospital and reach patient, causing patient harm. That's why focusing on repeated medication error and preventing the same has great impact on patient safety.

PROBLEM STATEMENT

"Investigate and propose a sustainable approach to significantly reduce the occurrence of repeated medication errors in a multispecialty tertiary care hospital, with the aim of enhancing patient safety, improving healthcare outcomes, and promoting a culture of continuous improvement within the organization."
There were total 134 medication errors during the period Apr'22 to Jun'22 out of that 72 were transcription errors and 50 were prescription errors.

MATERIAL & METHOD

We have analyzed the prescription, transcription, dispensing and administration errors over a period of 6 months. Statistical tools like RCA, FMEA are used to analyse these errors. The trend is also discussed in hospital drug and therapeutic committee and appropriate strategies are developed for error reduction.

Objectives

- Identify the repeated medication error.
- Prevention of the repeated medication errors.

Project design

Hospital based prospective observational study.

Data Collection Method

Online incident report system - AIRS (Apollo Incident Reporting System) and hard copy of the data collection form.

Project Subject/ Materials

- Patient hospitalized with complaints of Medical/Surgical ailments.
- Demographic details - Age, gender, weight, allergic history.
- Drug data - Drug (Brands Name, Generic name), Dose, Documentation of Drug dose, route & frequency, Route of administration and frequency of dosing will be recorded.
- Medication Errors - Prescription Error, Transcription Error, Dispensing Error³ & Administration Error.

Inclusion criteria

Medication Error pertaining to Prescription Error, Transcription Error, Dispensing Error & Administration Error as per the standard definition happened in the Hospital premises.

Exclusion criteria

- Medication Error outside of the Hospital premises.
- Medication error related to Homeopathy, Ayurvedic preparation and Unani medicine.
- Any information deemed not fit as per the definition.

Project Period

April'22 to Sep'22

Strategy

- All medication charts, transcribed into computer module, dispensing module and drug administration details in medication charts are being audited by clinical pharmacists, as per below discussed pathway
- Prescription is audited in the Medication Chart thereby detecting Prescription Errors.
- Transcription is being monitored in the transcription module in the computer system by clinical pharmacists and thereby detecting transcription errors.
- Dispensing error is monitored and detected by clinical pharmacists while dispensing done by pharmacist.
- Drug administration Error is detected by checking the drug administration details in the medication chart by clinical pharmacists.
- Analysis of the error on regular monthly basis and understanding the repeated medication error by clinical pharmacologists and Quality Team of the hospital.
- Repeated Medication Error trend identification and preventive strategies are formulated by clinical pharmacologist, Quality with the direction of Drug & Therapeutic Committee.

Statistical Analysis

Descriptive statistical analysis was used to determine whether or not the errors had decreased in number. The data were obtained through the online AIRS (Apollo Incident Reporting System) portal for incident reporting and converted into an MS Excel sheet for organizing, analyzing various aspects of medication errors, and finally summarizing the data sets in an understandable format, like charts, graphs, and tables. Also, the hard copy of the data is tallied for data validation.

Ethical Considerations

It is a prospective observational study where only observation on medication error are happened and no patient related activities are done. No patient identification disclosed. Interventions are done only on processes of medication management.

AS IN PROCESS

1

- Patient gets admitted in the hospital.

2

- Medication prescription is written by doctor in the medication chart.

3

- Transcription of the prescription is done in the computer module by ward pharmacists which reflects to the prescription audit team module for approval.

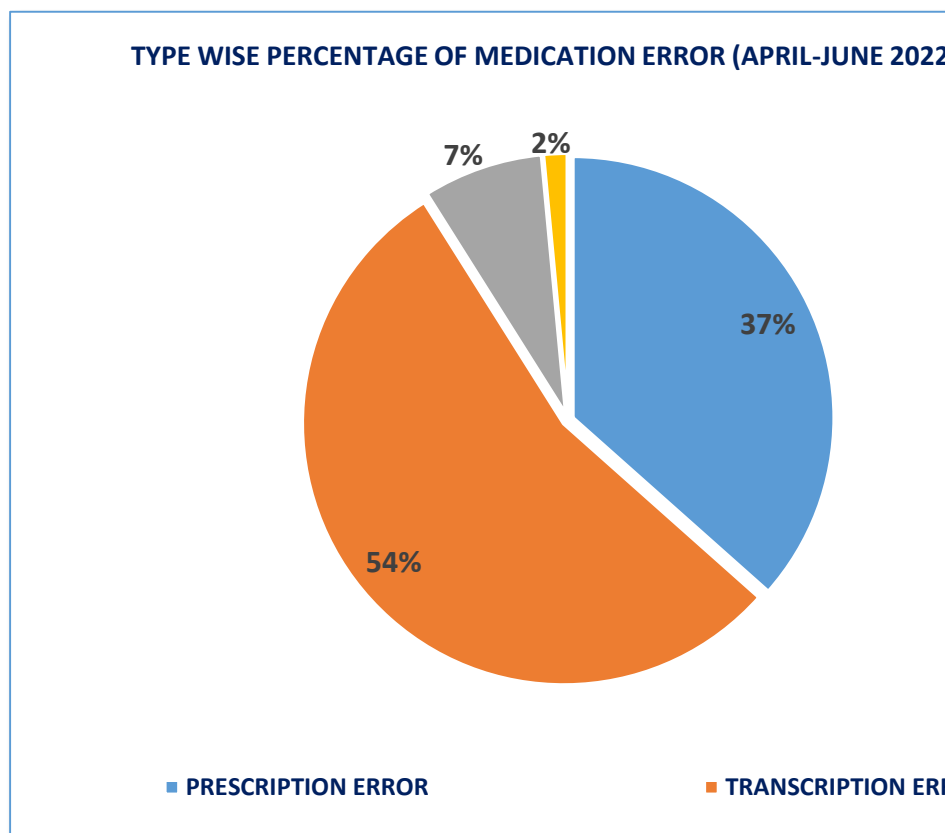
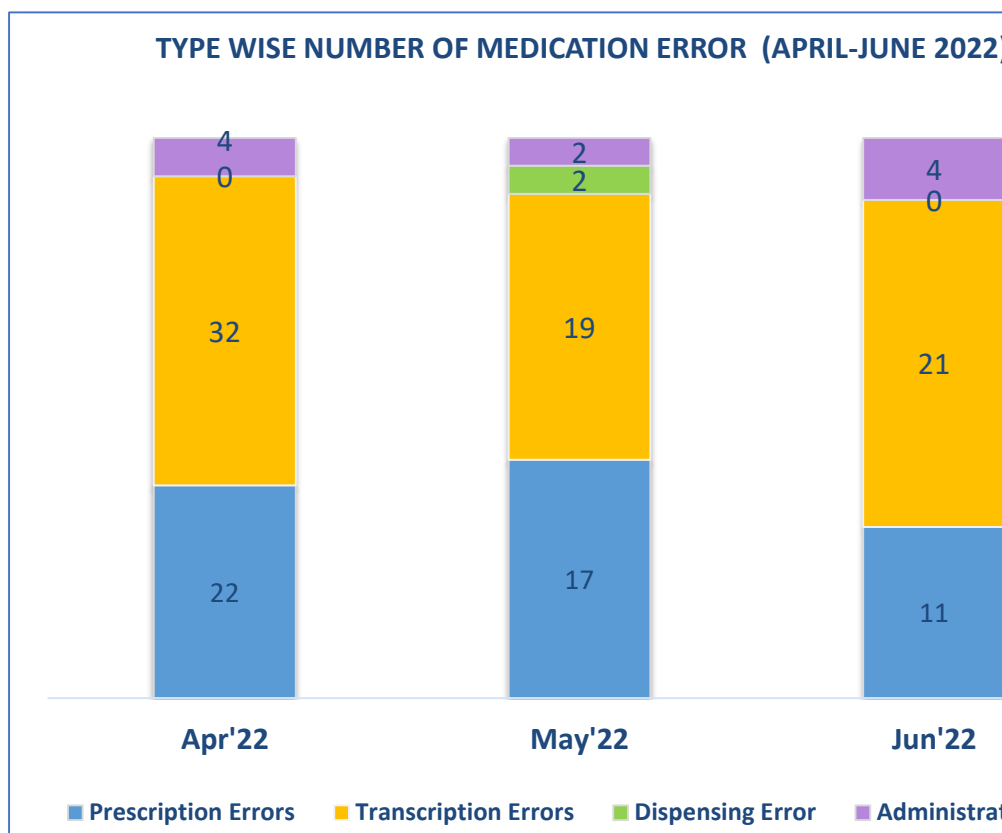
4

- After approving the prescription by prescription audit team, the dispensing is done to the respective ward drug delivery team.

5

- Medication are received by the nursing team and as per the prescription medications are administered by following standard administration guidelines.

ANALYSIS



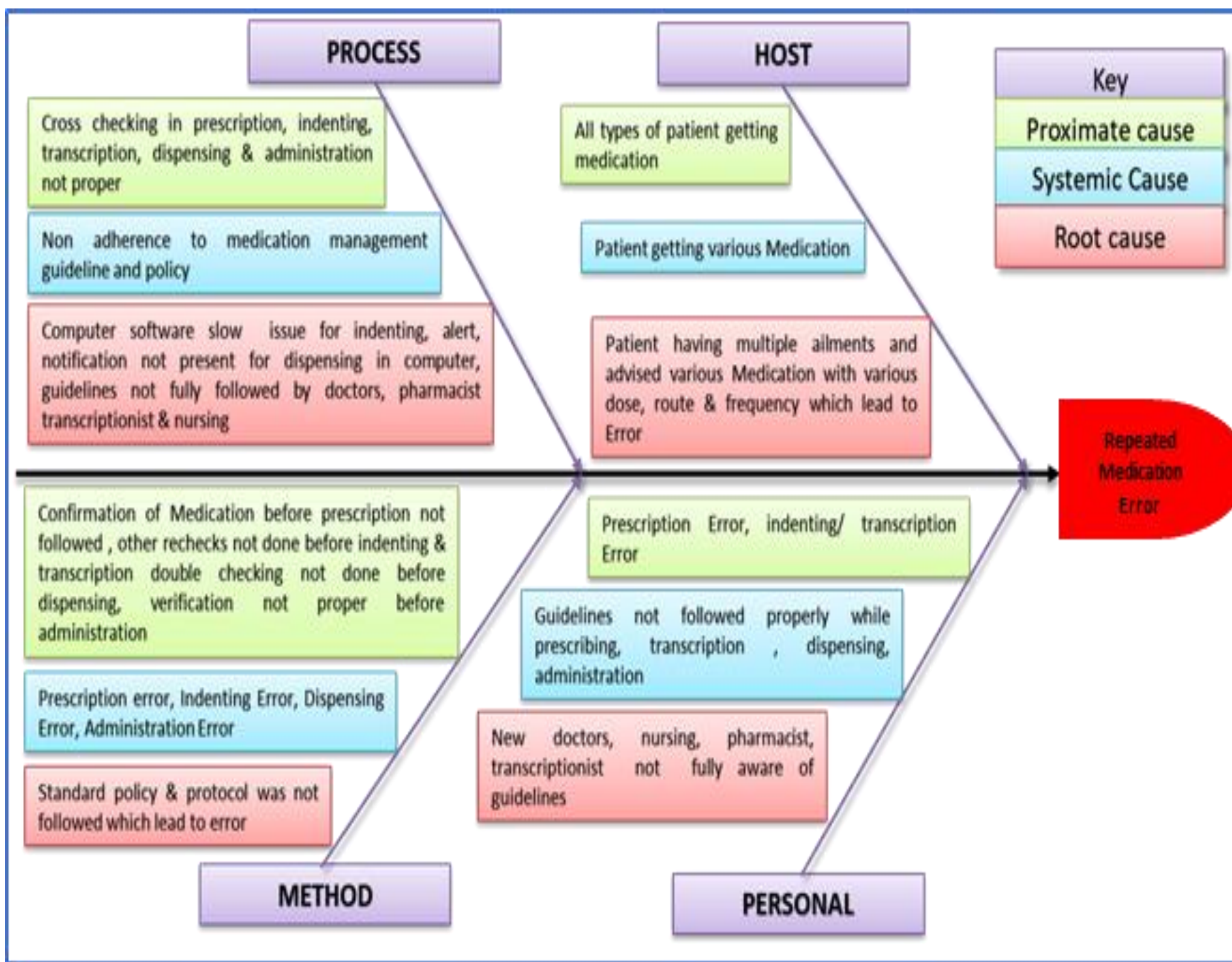
Department Wise



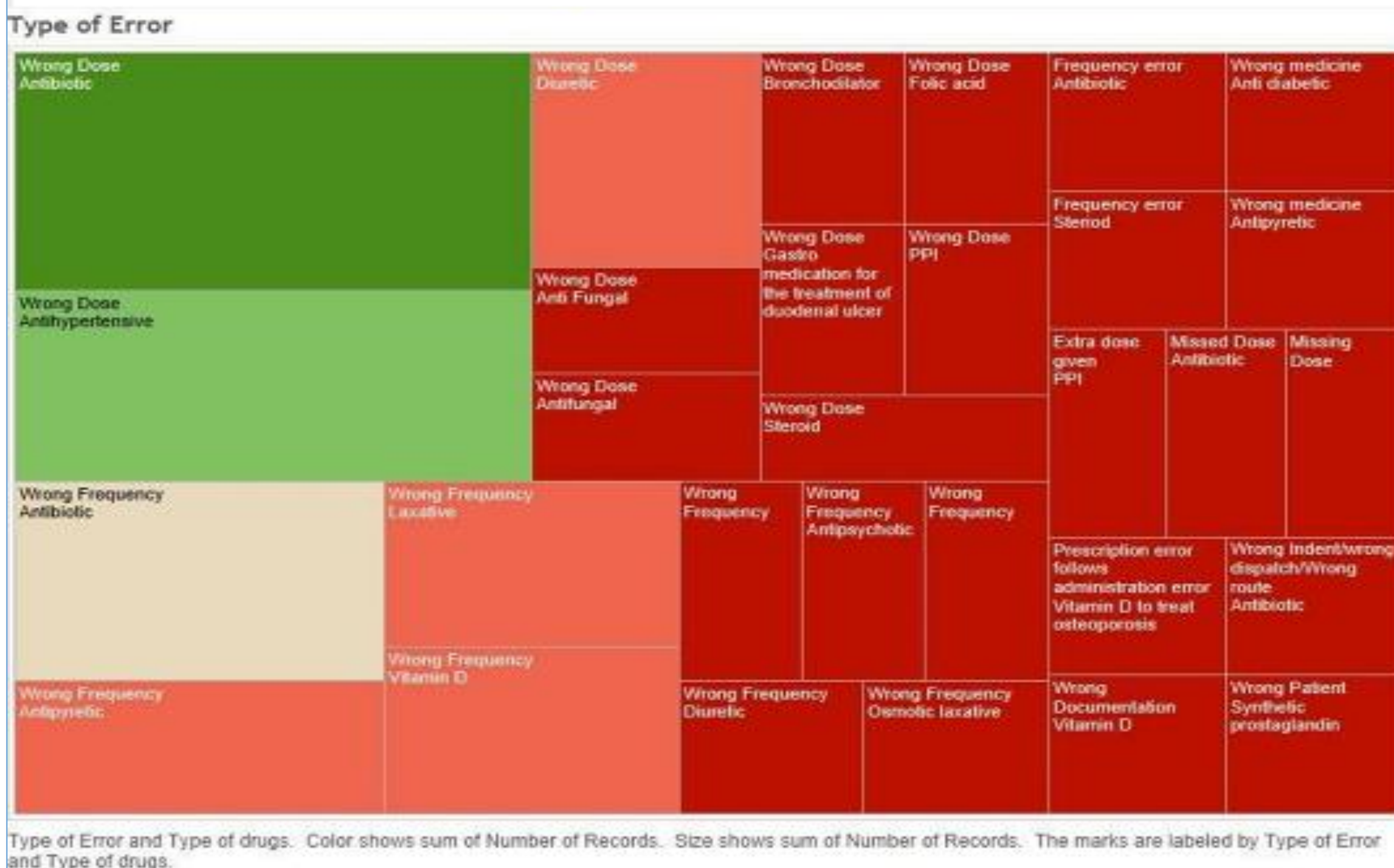
Location Wise



VARIOUS CONTRIBUTING FACTORS FOR HIGH REPEATED MEDICATION ERRORS



Type of error



INITIATIVES

During the period from April to June 2022, a concerning trend of repeated medication errors was observed. Among a total of 134 errors, 72 were attributed to transcription errors, and 50 were prescription errors. To gain a comprehensive understanding of the errors' origins and associated causes, a thorough analysis was conducted. In response, several measures were adopted to address and correct these issues. These included the introduction of a Medication Error Response Form, floor audits, medication huddles, a medication safety week celebration, and the digitalization of the medication system. Following the implementation of the aforementioned strategies, a notable improvement was seen. Specifically, during the subsequent quarter (July to September 2022), there was a significant 55% reduction in repeat medication errors.

1

Medication error reporting & action taken form for the person involved in the incident

2

Daily medication huddle on the floor

3

Digitalized approach towards medication management

4

"Thank You" card for reporting medication error

5

Focused activities on medication management on every 29th day of the month

INITIATIVES

Medication error reporting & action taken form for the error causing individual

Medication error reporting & action taken

Error Date & Time: Reporting Date & Time:

Error Location: Type of Error (Select only ONE)

Errors involved: (May select more than ONE)

Error made by: (Select only ONE)

Interventions:

Reported by: Clinical Pharmacist

NEW DRUG MAPPING MODULE

Pharmacy > Item Master Setup > Region

Item Name: NERVEN 10

Formulation: P-PHARMA

Manufacturer: PHARMACEUTICALS

Category: PHARMACEUTICALS

Search

TRANSCRIPTION MODULE WITH MANDATORY FIELDS IN HIS

MediCLIK

Pharmacy

Search

Classification

Medication

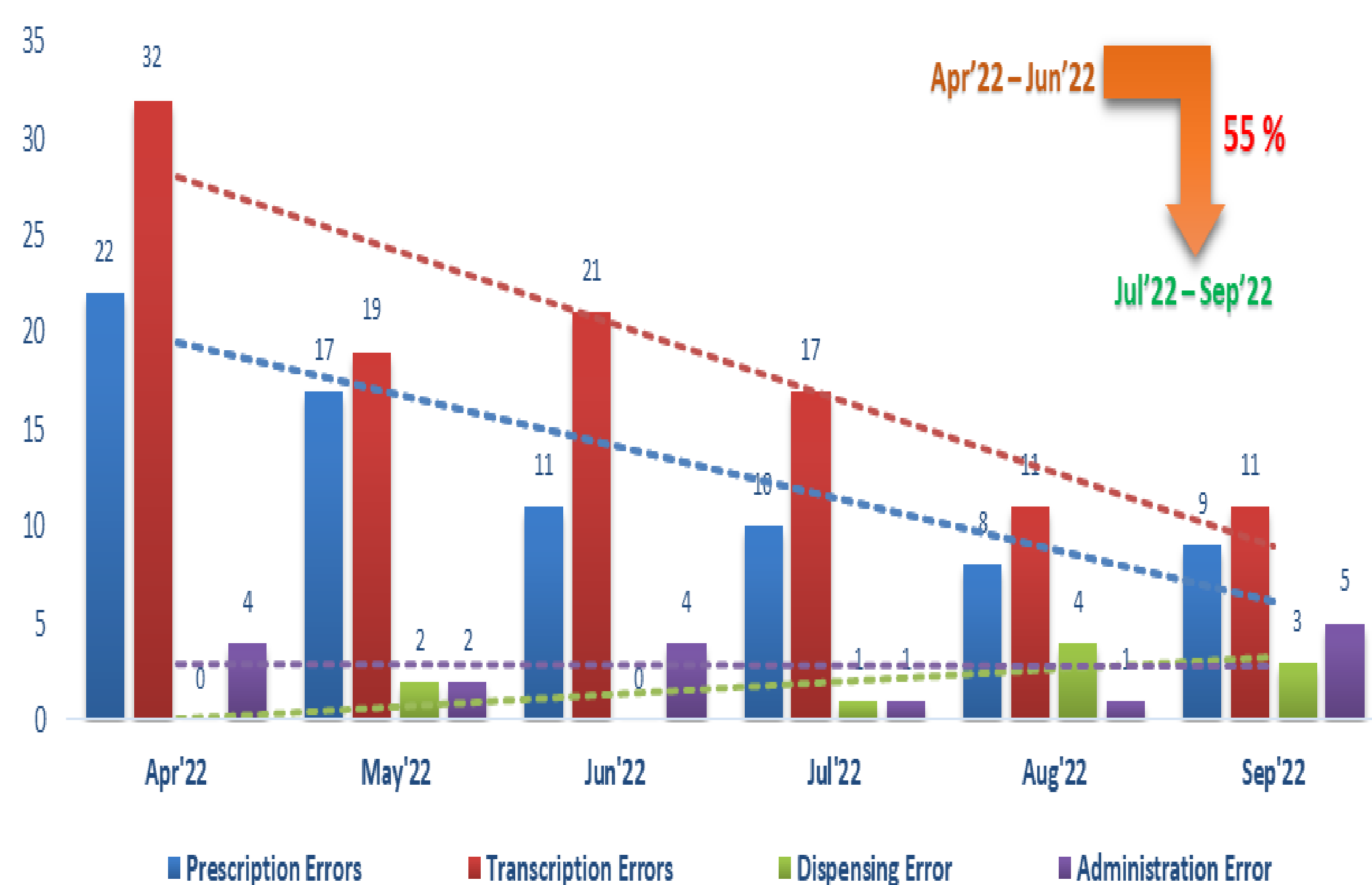
Transcription



OUTCOME

CONCLUSION

TYPE WISE NUMBER OF REPEATED MEDICATION ERROR (APR'22- SEP'22)



Transcription Error	Apr - Jun 2022		July- Sep 2022	
	Locations	Medication	Elements of Transcription	
Locations	Oncology	15	Second Floor	11
	Third Floor	11	Fourth Floor	8
	First Floor	10	First Floor	6
	Second Floor	9	Third Floor	4
Medication	Fourth Floor	8	Oncology	2
	Antibiotic	10	GIT Drug	5
	Anti-Depressant	7	Antibiotic	4
	GIT Drug	7	Anti-Depressant	3
Elements of Transcription	Chemotherapy Drugs	5	Chemotherapy Drugs	0
	Vitamins	4	Vitamins	0
	Frequency	21	Name of Drug	12
	Dose	11	Frequency	11
	Name of Drug	10	Dose	3
	Route	8	Unit	1
	Unit	6	Route	1

Prescription Error	Apr - Jun 2022		Jul- Sep 2022	
	Locations	Medication	Elements of Prescription	
Locations	Second Floor	13	First Floor	10
	First Floor	11	Third Floor	5
	Fourth Floor	8	Second Floor	4
	Third Floor	7	Oncology	4
Medication	Oncology	4	Fourth Floor	3
	Controlled Drugs	13	Controlled Drugs	9
	GIT Drug	4	GIT Drug	2
	Electrolyte	3	Electrolyte	1
Elements of Prescription	Antibiotic	3	Antibiotic	0
	Dose	18	Dose	7
	Unit	9	Route	7
	Route	8	Frequency	3
	Frequency	5	Unit	0

In conclusion, implementing a comprehensive and multi-faceted approach is essential to prevent repeated medication errors in a hospital setting. In this approach, we have focused on the following key strategies:

Enhanced Staff Training and Education: Provided regular and ongoing training to all healthcare staff involved in the medication process, including physicians, nurses, and pharmacists. Emphasized the importance of accurate medication administration, dosage calculation, and error reporting protocols.

Standardized Medication Processes: Established clear and standardized procedures for medication prescribing, dispensing, and administration. Implement protocols that ensure double-checking of high-risk medications, particularly during transitions of care.

Technological Support: Invest in and utilize advanced technologies such as electronic prescribing and computerized physician order entry (CPOE) systems to minimize errors related to illegible handwriting and ensure real-time access to patient information.

Medication Reconciliation: Prioritize medication reconciliation during admission, transfer, and discharge to identify and resolve any discrepancies in the patient's medication regimen.

Error Reporting and Analysis: Foster a culture of open communication and non-punitive reporting of errors. Conduct thorough root-cause analysis for every medication error to identify systemic issues and implement preventive measures.

Clinical Decision Support Systems: Implement clinical decision support systems that can alert healthcare providers to potential drug interactions, allergies, and contraindications, thereby reducing the risk of errors.

Patient Engagement and Education: Involve patients and their caregivers in the medication process by providing them with understandable information about their medications, potential side effects, and the importance of adherence.

Continuous Quality Improvement: Establish quality improvement initiatives focused on medication safety, regularly reviewing processes, and updating protocols based on best practices and evidence-based guidelines.

Interdisciplinary Collaboration: Foster effective communication and collaboration among all members of the healthcare team, promoting a shared responsibility for patient safety.

By adopting these strategies and fostering a culture of patient safety, we have significantly reduced repeated medication errors and ensured better outcomes and improved patient well-being.

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