



To Ensure Patient Safety in Bhaktivedanta Hospital and Research Institute by Rational Prescription Audit

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ABSTRACT

Objective: The Consistent daily Prescription Audit activity along with its corrective and preventive actions by clinical pharmacist in clinical areas and its regular monitoring, has been beneficial to all patient Health-care.

Method: During a 5-month period, a clinical pharmacist was assigned to review medication order sheets and drug orders on daily basis at all wards as on random basis. When an error was detected, intervention was made at the time of audit and error was informed to respective department head, medical admin and nursing incharge for further training to respective staff.

Results: Prescription error declined from 15.60% to 5.98%, administration error declined from 5.33% to 2.67% and dispensing error declined from 0.12% to 0.00% Respectively.

Conclusion: Daily prescription audit helps in early detection of prescription errors, administration error and dispensing error, therefore there is continuous improvement in prescribing, administration and dispensing pattern of medicine and it helps to improve patient safety during the treatment.

Keywords: Rational prescription audit, Prescription medication errors, Dispensing medication errors, Administration medication errors.

INTRODUCTION

Prescription audit is an important process that checks for quality improvement in patient health care [1,2]. Patient-Care-Quality improvement has been implemented through prescription audit of in-patients. Prescription audit is most important part of health-care system whereby the right dose of the right medicine to the right patient at right time with right-route of administration is delivered [3-5]. Patient safety gets challenged whenever there is an error e.g. prescription errors like therapeutic duplication, incorrect strength/frequency/dosage form; administration errors e.g. incorrect dilution/dose, wrong route of administration, wrong indent, and dispensing error.

Prescription writing assessment is the most important technique to

ensure patient safety by rational use of medicines [6,7].

Impact on practice:

- Good practices to be identified and implemented for patient safety.
- Improving the professional practices while meeting with Quality Standards.
- Improving Staff-skill-sets through continuous learning.
- Poor or deficient practices to be identified and eliminated on continuous basis.
- Cultures of working with multidisciplinary team to be developed.

Aim

The main aim of the study was poor or deficient practices to be identified and eliminated on continuous basis and to reduce patient harm by early detection or prevention of medication error at all over the wards by daily prescription audit round.

reach the patient (level A), up to an error that resulted in patient death (level I). Prescription error % was determined as the ratio of the number of prescription errors to the total number of audited medication orders.

METHODOLOGY

A Randomly observational cross-sectional study was carried out in a Bhaktivedanta hospital over a period between September 2020 to January 2021. The prescriptions audit done at various Different wards (ICU, ICCU, IMCU, NICU, ECO-AC, ECO-PRIV, Surgical, Special, Deluxe Special, Maternity and General Wards) and Corrective and preventive actions was done at daily clinical prescription audit round.

RESULTS

Over five thousand prescriptions were audited by Clinical-Pharmacist from September 2020 to January 2021. Errors in audit findings are classified as per NCC MERP (National Coordinating Council for Medication Error Reporting and Prevention). Errors are categorized as prescription error, administration error and dispensing error. Improvement observed due to daily audits viz. Prescription error declined from 15.60% to 5.98% (Figures 1 and 2).

Following parameters were analyzed in prescription auditing for improving patient care:

- i. Patient information: Name, Age, Sex, Weight.
- ii. Doctors Information: Name, Registration number, and Signature.
- iii. Medicine Information: Prescription written in capital letters, route of administration, strength, frequency, time of administration, therapeutic duplication, and legibility of the prescription.

iv. Adjusting drug dose for Patient having High creatinine-clearance-level.

- iv. Drug-Drug interaction and spacing-out the dose depending on half-life of drugs.

Following parameters were analyzed in administration auditing for improving patient care:

- Wrong Route
- Wrong Indent
- Wrong dose
- Wrong Dilution
- Wrong Administration

Following parameters were analyzed in dispensing auditing for improving patient care:

- Stock was In-adequate.
- Near expiry product.
- Dispensing medicine to right patient.
- Incorrect labeling of medicine.
- Lack of good drug knowledge.

All above sub types of medication errors were classified according there severity of the consequence it caused, using the definitions provided by Hartwig, Denger, and Schneider. The severity of the Medication error could range from a potential error that did not

		Pre-Training		Post-Training		
Sr. No	Incidence	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21
1	Total number of Rxn Audited	487	1186	1460	1622	935
2	Total number of Prescription Medication Errors	76	131	102	111	56
3	% Errors	15.60%	11.04%	6.98%	6.84%	5.98%
		13.32%		6.6%		

Figure 1: Prescription medication error comparative chart.

Conclusion: Above mentioned chart it concluded that prescription Medication Errors have gradually declined.

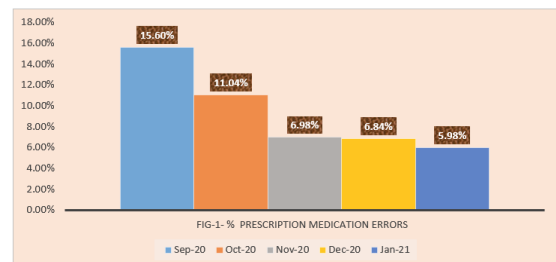


Figure 2: Prescription error declined from 15.60% to 5.98%.

Administration error declined from 5.33% to 2.67% (Figures 3 and 4).

		Pre-Training		Post-Training		
Sr. No	Incidence	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21
1	Total number of Rxn Audited	487	1186	1460	1622	935
2	Total number of Administration Medication Errors	26	48	57	48	25
3	% Errors	5.33%	4.04%	3.90%	2.95%	2.67%
		4.6%		3.17%		

Figure 3: “Administration medication error” comparative chart.

Conclusion: Above mentioned chart it concluded that administration

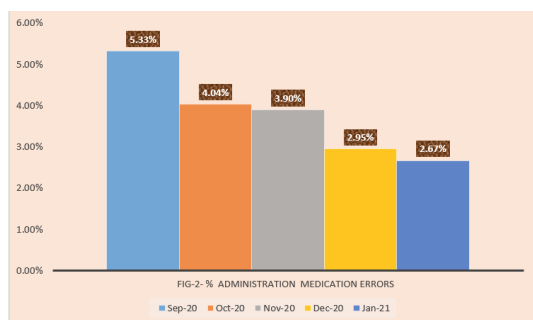


Figure 4: Administration error declined from 5.33% to 2.67%.

Dispensing error declined from 0.12% to 0.00% (Figures 5 and 6).

Sr. No	Incidence	Pre-Training		Post-Training		
		Sep-20	Oct-20	Nov-20	Dec-20	Jan-21
1	Total number of Rxn Audited	487	1186	1460	1622	935
2	Total number of Dispensing Medication Errors	0	0	0	2	0
3	% Errors	0%	0.12%	0%	0.12%	0%

Figure 5: “Dispensing medication error” comparative chart.

Conclusion: Above mentioned Chart it concluded that Dispensing Errors declining trend was observed.

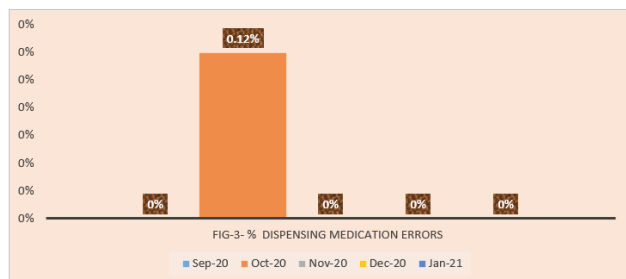


Figure 6: Dispensing error declined from 0.12% to 0.00%.

DISCUSSION

Numerous studies have found that clinical pharmacists can improve patient safety by rational Prescription audit [8-15].

Prescription errors are mostly caused due to incorrect strength, strength not mentioned, and therapeutic duplication by Doctors. Most of the errors were identified during the prescription audit-round by Clinical Pharmacist before error reached to a patient. As a preventive action, we had added strength column in patient fresh order sheet because earlier all patient fresh order sheet missing strength column. Also, Regular weekly Training was given by medical administrator team to all the RMO/Consultant doctors to understand the importance of safe practice. In post Training period Prescription errors was improved by 6.72%.

Dispensing-errors are mostly caused due to barcode-labelling error, and wrong medicine supplied to patient due to illegible handwriting of prescription. To prevent errors, we have implemented the doer-checker system in Pharmacy to verify the correctness of medicine before dispensing. Training was given to all Pharmacist and Pharmacy attendants to follow doer-checker system at the time of dispensing. In post Training period Dispensing errors was improved by 0.12%.

Administration errors are mostly caused due to incorrect indent sent to the Pharmacy, incorrect dilution, and incorrect dose given to patient by nursing staff. Most of the errors were identified during the prescription audit rounds by Clinical Pharmacist before error reached to a patient. As a preventive action, Head-Nurse training given to Nursing-Team at the time of administration of medicine to follow the seven rights of administration. In post Training period Administration errors was improved by 1.43% (Figures 7 and 8).

Sr.No	Training Category	Pre-Training Result in %	Post Training Result in %
1	Prescription Medical admin training	13.32%	6.6%
2	Administration Nursing department training	4.6 %	3.17%
3	Dispensing Pharmacy department training	0.12%	0.00%

Figure 7: Overall regular training 20 for hospital staff including doctors, sisters and Pharmacist.

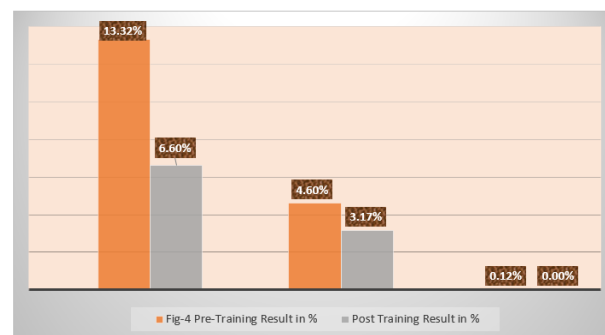


Figure 8: Overall regular training 20 for hospital staff including doctors, sisters and pharmacist.

CONCLUSION

Consistent daily Prescription Audit activity along with its corrective and preventive actions in clinical areas and its regular monitoring, has been beneficial to patient Health-care. There is a scope for continuous improvement in prescribing, administration and dispensing pattern of medicine. The aim is to find out reasons for incomplete prescriptions and deterioration in the Quality Level of documentation of In-Patients. Errors found during the prescription

REFERENCES

1. Sarkar PK. *Indian J Med Ethics* ,2021; 11:(5), 11-2.
2. Panayappan L, Jose JM, Joseph JG, Jayapal K, Saju S, KrishnaKumar K. *J Bio Innov* ,2021;11:(5),542-7.
3. Solanki ND, Shah C. *Int J Clin Trials* 2015, (2),14 9.
4. Patterson HR. *J R Coll Gen Pract* 1986;11(5): 6-196.
5. Srishyla M, Mahesh K, Nagarani M, Mary C, Andrade C, Venkataraman B. *Indian J Pharmacol* 1994, 26-238.
6. Curtis P, Coll JR. *Gen Pract* 1974, (24), 607 611.
7. Jyoti N, Kaur S. *J Clin Diagn Res* 2013, 8(7), 680 683.
8. Willium.A. *Am. S.of Health-Syst. pharm.*, 2005.
9. Brown JN, Barnes CL, Beasley B, Cisneros R, Pound M, Herring C. *Am J Health Syst Pharm.* 2008, (65), 330–333.
10. Bosma L, Jansman FG, Franken AM, Harting JW, Van den Bemt PM. *Pharm World Sci.* 2008, (30), 8-31.
11. Bedouch P, Charpiat B, Conort O, Rose FX, Escofier L, Juste M. *Ann Pharmacother.* 2008, (42), 103-1095.
12. Kaushal R, Bates D, McKenna K, J Soukup J, Landrigan C, Goldmann D. *Am of Syst Pharm.* 2021;11(5) : 125-131
13. Vasileff HM, Whitten LE, Pink JA, Goldsworthy SJ, Angley MT. *Pharm World Sci.* 2009, (31), 9-373.
14. Bracey G, Miller G, Franklin BD, Jacklin A, Gaskin G. *Clin Med.* 2008, (8), 7-53.
15. Case LL, Paparella S. *J Emerg Nurs.* 2007, (33), 564-566.