

Research Article



A Retrospective Study on Prescription Audit in a Tertiary Care Teaching Hospital in Karnataka

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ABSTRACT

Prescription audit is an integrated part of the clinical audit. It is a standard process that boosts the patient and outcome with systemic care against definitive criteria and the execution of changes. Prescription auditing is also an educational venture, and if consistently done, can support to improve the prescription standard and thus allow the patient to receive high quality and excellent care. A prescription can be differentiated into an intellectual and technical part. The intellectual part include decision making, which encircle understanding of diagnosis, drug interactions and contraindications in the prescription. The technical part involves relay on vital information such as name of the drug and its dosage to the pharmacists. It was a retrospective observational study, conducted in a tertiary care teaching hospital of Karnataka, from the period of July 2020 to November 2020. A total number of 550 patients were included in this study. The sample was taken in randomized manner from admitted patients except OPD patients. Data collection was performed according to hospital regulations. Data was randomly collected by daily auditing of in patient's medication cards (Prescriptions). A standard checklist was used for the audit process. This study shows that out of 550 prescriptions, percentage of compliance in respect of (a) Consultant name mentioned and (b) age mentioned were near about 97.54% for both Wards and ICU's. Statistical analysis shows that (a) Height mentioned, (b) Weight mentioned and (c) Drug hypersensitivity were 100% Compliance in ICU's but in Wards, they were non-compliance by 76.67%, 22.5% and 76.42% respectively. In case of overall results (Ward + ICU) by comparing 550 prescriptions the percentage of partial compliance in respect of All drugs written in capital letters and legible. All drug orders are signed with, Dose mentioned correctly, Route of administration mentioned properly, Frequency mentioned were 43.49%, 87.40%, 48.49%, 67.80%, 86.72% respectively. By doing regular prescription audit we identified the errors in medicine cards and the actual cause of the errors and provide outline the rational use of drugs.

Keywords: Rational use of drug, Prescription Audit, Antibiotics, World Health Organization (WHO), Compliance.

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INTRODUCTION

Rational use of drugs is an important element in achieving quality of the health and medical care for the patients and the community.¹ It involves the proper use of medications so that their selection, dose, duration is based on the WHO guidelines, at the minimum price to the community and patients and are dispensed correctly and taken properly.² Irrational prescribing is a global problem. Substandard prescribing practice led to ineffective and harmful treatment, worsening and prolongation of illness, distress and pain to the patient and at relatively higher costs.³

The word prescription was derived from, 'pre' meaning 'before' and 'script' meaning 'writing written 'signifying an order that must be put down prior to or for the prescribing and administering of drug.⁴ An prescription must include the patient's demographic details like name of the patient, his/her age and address, date of prescription, and the provisional diagnosis with clearly specifying the drug's generic name, its formulation along with the dose, its frequency of administration, the duration of treatment and signing the prescription, specifying one's name, and one's address.⁵ The assessment of prescribing pattern by auditing prescription serves as the comprehensive, critical interpretation of the quality of health care, including the steps used for diagnosis and management, the use of assets, and the resulting consequences and quality of life for the patients and it is a constant cycle involving observing process, establishing norms, juxtaposing practice with standards, executing changes and observing new practice.⁶

A prescription can be differentiated into an intellectual and technical part. The intellectual part include decision making, which encircle understanding of diagnosis, drug



interactions and contraindications in the prescription. The technical part involves relay on vital information such as name of the drug and its dosage to the pharmacists.⁷

Prescription audit is an integrated part of the clinical audit. It is a standard process that boosts the patient and outcome with systemic care against definitive criteria and the execution of changes. Prescription auditing is also an educational venture, and if consistently done, can support to improve the prescription standard and thus allow the patient to receive high quality and excellent care.⁸ Prescription audit can reduce the misuse of drugs to upgrade rational usage of medications, and encourage medical practitioner to follow prescription guidelines to reduce the prescription error and aid medical care system.⁹

Aim and Objective

To observe different types of Prescription Audit parameters & evaluate the compliance, partial compliance & non-compliance data of audit according to the checklist as per National Accreditations Board of Hospitals Health (NABH).

METHODOLOGY

It was a retrospective observational study, conducted in a tertiary care teaching hospital of Karnataka, from the period of July 2020 to november2020. A total number of 550 patients were included in this study. The sample was taken in randomised manner from admitted patients except OPD patients. Data collection was performed according to hospital regulations. Data was randomly collected by daily auditing of in patient's medication cards (Prescriptions). A standard checklist was used for the audit process. Each and every parameter audited by compliance and non-compliance level of documentations. Like parameters of patients' demographic details documentation as well as clinical documentation of prescriptions. Raw data was transferred to electronic database (MS Excel) for further evaluation and analysis. Standard guidelines (NCC MERP guideline FDA/ NABH guideline) were used as reference of this study. The following parameter were audited, given below-

Contents of Prescription Audit Checklist -

The following parameters were audited during the entire study period-

- Consultant Named Mentioned

Demographic Profile of Patients-

- Age
- Height
- Weight
- Drug
- Diet instructions mentioned
- Variable dose
- As required Medication properly mentioned
- Once daily & Pre-Medication drugs mentioned

Demographic Profile of Regular Prescriptions (Clinical Parameters) –

- All drugs written in capital letters and legible
- All drug orders are signed with
- Dose mentioned correctly (Normal/Based on Crcl)
- Route of administration mentioned properly
- Frequency mentioned
- Number of antibiotics prescribed
- Number of restricted antibiotics prescribed
- Number of drugs written in generic name
- Number of high-risk Medication prescribed (Average use/ Prescription)
- Presence of Therapeutic duplication
- Fixed dose combination mentioned
- Error Prone Abbreviation

Table 1: Demographics of Patients in Ward

Patient details	Sample	% Compliance	% Partial compliance	% Non-compliance
Age	510	97.35	0	2.65
Height	510	23.33	0	76.67
Weight	510	77.5	0	22.5
Drug Hypersensitivity	510	23.58	0	76.42
Diet instructions mentioned	510	0	0	100
Variable dose	510	79.58	0	20.42
As required Medication properly mentioned	510	47.08	0.42	52.5



Table 2: Regular prescription Audit in Ward

Regular prescription (clinical parameter)	Sample	% Compliance	% Partial compliance	% Non-compliance
All drugs written in capital letters and legible	510	39.45	38.5	22.05
All drug orders are signed with	510	86.42	13.17	0.41
Dose mentioned correctly (Normal/Based on Crcl)	510	45.08	53.67	1.25
Route of administration mentioned properly	510	65.42	33.33	1.25
Frequency mentioned	510	85.83	10.75	3.42
	Sample	Average/prescription		
Number of antibiotics prescribed	510	1.46/P		
Number of restricted antibiotics prescribed	510	0.55/P		
Number of drugs written in generic name	510	0.54/P		
Number of high-risk Medication prescribed (Average use/Prescription)	510	0.52/P		
Presence of Therapeutic duplication	510	0.03/P		
Fixed dose combination mentioned (No of fixed dose)	510	1.26/P		
Number of un administered dose	510	0.32/P		

Table 3: Demographic of patients in ICU

Patient details	Sample	% Compliance	% Partial compliance	% Non-compliance
Age	40	100	0	0
Height	40	4.25	0	95.75
Weight	40	100	0	0
Drug Hypersensitivity	40	100	0	0
Diet instructions mentioned	40	100	0	0
Variable dose	40	95.33	4.67	0
As required Medication properly mentioned	40	96.67	0	3.33

Table 4: Regular prescription Audit in ICU

Regular prescription (clinical parameter)	Sample	% Compliance	% Partial compliance	% Non-compliance
All drugs written in capital letters and legible	40	95	3.33	1.67
All drug orders are signed with	40	100	0	0
Dose mentioned correctly (Normal/Based on Crcl)	40	91.67	5	3.33
Route of administration mentioned properly	40	98.33	1.67	0
Frequency mentioned	40	98.33	1.67	0
	Sample	Average/Prescription		
Number of antibiotics prescribed	40	1.65/P		
Number of restricted antibiotics prescribed	40	0.95/P		
Number of high-risk Medication prescribed (Average use/Prescription)	40	0.77/P		
Presence of Therapeutic duplication	40	0/P		
Fixed dose combination mentioned (No of fixed dose)	40	0.55/P		
Number of un administered dose	40	20.45	31.25	48.3



Table 5: Demographics of Patients in ICU+ Ward

Patient details	Sample	% Compliance	% Partial compliance	% Non-compliance
Age	550	97.54	0	2.46
Height	550	21.95	0	78.05
Weight	550	79.1	0	20.9
Drug Hypersensitivity	550	29.13	0	70.87
Diet instructions mentioned	550	7.27	0	92.73
Variable dose	550	83.33	0.33	19.13
As required Medication properly mentioned	550	50.68	0.38	48.94

Table 6: Regular prescription Audit in ICU+ Ward

Regular prescription (clinical parameter)	Sample	% Compliance	% Partial compliance	% Non-compliance
All drugs written in capital letters and legible	550	43.49	35.94	20.57
All drug orders are signed with	550	87.40	12.21	0.39
Dose mentioned correctly (Normal/Based on Crcl)	550	48.49	50.14	1.37
Route of administration mentioned properly	550	67.80	31.02	1.18
Frequency mentioned	550	86.72	10.08	3.2
	Sample	Average/Prescription		
Number of antibiotics prescribed	550	1.47/P		
Number of restricted antibiotics prescribed	550	0.57/P		
Number of drugs written in generic name	550	0.56/P		
Number of high-risk Medication prescribed (Average use/Prescription)	550	0.53/P		
Presence of Therapeutic duplication	550	0.02/P		
Fixed dose combination mentioned (No of fixed dose)	550	1.20/P		
Number of un administered dose	550	0.17/P		

RESULTS AND DISCUSSION

From this study, it is evident that prescription error and medication errors can be reduced considerably by executing an audit and intervention of prescriptions. This study provides detailed information on documentary accuracy (clinical as well as non-clinical) and the different causes of prescription error. This study shows that out of 550 prescriptions, percentage of compliance in respect of (a) Consultant name mentioned and (b) age mentioned were near about 97.54% for both Wards and ICU's. Statistical analysis shows that (a) Height mentioned, (b) Weight mentioned and (c) Drug hypersensitivity were 100% Compliance in ICU's but in Wards, they were non-compliance by 76.67%, 22.5% and 76.42% respectively, similar study was conducted by Tulika Singh et al.; where 120 prescriptions were audited in a tertiary care hospital using the WHO core drug use indicator, the results show 98.35 of prescriptions had date of consultation, a total of 85.8% drugs were prescribed by generic name. The percentage of compliance of Variable dose documentation mentioned was higher in ICU (95.33%) than in Ward (79.58%), as required Medication properly mentioned was highly non-compliance (20.42%) in different wards where

as in ICU's it was found 0% compliance. All drugs written in capital letters and legible was found 39.45% compliance, which is quite lower compare to ICU's. All drug orders are signed with documentation mentioned was higher (86.42%) in Wards compare to ICU's (100%). The percentage of partial compliance in respect of Dose mentioned correctly was lower in Wards (45.08%) than in ICU's (91.67%). So, the result was more accurate in ICU's than in Wards. Percentage of non-compliance in respect of Route of administration mentioned properly was quite lower in wards (65.42%) compare to ICU's (98.33%). We found that the percentage of compliance in respect of Frequency mentioned correctly was much higher in ICU (98.33%) than in Ward (85.83%). Use of presence of therapeutic duplication was greater in Wards (0.03/P) than in ICU's (0/P). In case of overall results (Ward + ICU) by comparing 550 prescriptions the percentage of non-compliance of auditing parameters like Height mentioned, Weight mentioned, Drug Hypersensitivity mentioned, Variable dose, As required medication properly mentioned, were 78.05%, 20.9%, 70.87%, 19.13%, 48.94% respectively. In case of overall results (Ward + ICU) by comparing 550 prescriptions the percentage of partial



compliance in respect of All drugs written in capital letters and legible. All drug orders are signed with, Dose mentioned correctly, Route of administration mentioned properly, Frequency mentioned were 43.49%, 87.40%, 48.49%, 67.80%, 86.72% respectively. By reducing the number of partial compliance and non-compliance we can prevent prescription errors and misinterpretation errors. By doing regular prescription audit we identified the errors in medicine cards and the actual cause of the errors and provide outline the rational use of drugs. We also found that percentage of compliance was higher in ICU's compared to wards as the work load in the ICU's was higher compared to wards.

Abbreviations

WHO: World Health Organization.

NABH: National Accreditations Board of Hospitals Health.

OPD: Out Patient Department.

NCC MERP: The National Coordinating Council for Medication Error Reporting and Prevention.

FDA: Food and Drug Administration.

Crcl: Creatinine Clearance.

ICU: Intensive Care Unit.

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