

## Prescription Audit in Outpatient Department of a District Level Government Hospital in Northern Kashmir: An Observational Study

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### ABSTRACT

An 'audit' is defined as 'the review and the evaluation of the health care procedures and documentation for the purpose of comparing the quality of care which is provided, with the accepted standards'. Studying the prescription audit is that part of the audit which seeks to monitor, evaluate and if necessary, suggest modifications in the prescribing practices of medical practitioners. In this study, we aimed to study the prescription pattern and assess the quality of prescription, with the standard prescription norms in Out Patient department of various specialities of the District Hospital, Bandipora. This observational study was conducted on the patients receiving medication during treatment in the outpatient departments of various specialities of the District Hospital, Bandipora, over a period of one month and the calculated sample size was 95 (according to the guidelines of prescription audit by MoHFW). An additional sample of 5 was included in the study, making the total sample size 100. A total of 20 parameters were assessed using a checklist. It was found that out of 100 study participants, brief history was mentioned in 51% prescriptions; dosage, duration and frequency was mentioned in 72% prescriptions, sign and stamp of the treating doctor was present on 37% prescriptions; medications were written in capital letters in 70% prescriptions, but were written in generic form in only 17% prescriptions. 78% of the medication orders were clear and readable; route of administration was not mentioned in 65% prescriptions. Vitamins, tonics or enzymes were prescribed in only 10% prescriptions, while antibiotics were prescribed in 44% prescriptions.

**Keywords:** Prescription audit, outpatient department, district hospital, prescription norms

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### INTRODUCTION

Prescription is an instruction written by a medical practitioner that authorizes a patient to be issued with a medicine or treatment. It is an important document in the process of treatment. Prescription writing reflects the physician's skill in the diagnosis and attitude towards selecting the most appropriate cost effective treatment (1,2).

A standard prescription has four sections: superscription, inscription, subscription and signatura or signa. Superscription includes date, name, age, sex, address, weight of the patient etc. and a symbol 'R' meaning "take thou". Inscription includes medications with dosage etc. Subscription contains direction to the pharmacist and signa is the portion containing direction to the patients. At the end of the prescription, there is signature which contains prescriber's name, signature, designation and stamp with registration number.

Irrational prescribing is a global problem. The emerging data reveals that prescribing errors are common and can affect between 4.2 to 82% of the prescriptions (3). Such errors can result in adverse events, unsafe treatment, and additional cost of treatment, inefficient use of resources, and irrational medicine use. Almost 4 in 1000 prescriptions have errors that have the potential to cause adverse effects (4). Studies have shown that 56% of such preventable adverse events occurred at the stage of prescription ordering (5). Prescription errors can result from individual as well as system-related factors. Detecting such errors is the first crucial step in building safer systems and preventing adverse events (6).

Medical audit is defined as the review and evaluation of health care procedures and documentation for the purpose of comparing the quality of care that is provided with accepted standards (7). A prescription audit is a part of the holistic clinical audit and is a quality improvement process that seeks to improve patient care and outcomes through a systematic review of care against explicit criteria and the implementation of change (8).

The World Health Organization (WHO) has drawn up “core prescribing indicators” for analysis of the prescriptions, and promotion of rational use of medicines. These include prescribing Indicators, patient care Indicators and facility Indicators. WHO’s core prescribing indicators do not provide information on recording the patient’s demographic details, clinical details, legibility of notes, etc. Hence, the National Health Mission, under The Ministry of Health and Family Welfare, has established Prescription Audit guidelines in which the following indicators are to be recorded in undertaking analysis of prescriptions, so as to cover all dimensions of prescription-writing in terms of patient’s & prescriber’s details. Indicators for Completeness of the Prescription include patient details- name, age, sex, address, reported allergy, date of consultation/registration in OPD date, diagnosis, medicine information- dosage forms, name of medicines prescribed in full or abbreviation, strength of formulation, dose, advisory (before/after food, at bedtime, etc.) duration of therapy, medicine interactions, signature and information about the prescriber- doctor’s name, qualification, registration no. etc. Indicators for Legibility and Rationality of the Prescription include percentage of prescription with legible handwriting, percentage of prescription where allergies are mentioned, percentage of prescription with brief history written, percentage of prescription with provisional or Final Diagnosis, percentage of prescription where salient features of clinical examination are recorded, percentage of prescription where schedule/Dosages are written, percentage of prescription with Vitamins, Tonics, or Enzymes and percentage of prescription wherein antibiotics are prescribed (6).

The prescription audit studies have been conducted in different settings like OPD or IPD’s in hospitals, in hospital pharmacies, in medical stores and by private medical practitioners attached to hospitals with the aim of improving the standards of medical care (9). Since no such study was carried out in the outpatient set up of District Hospital, Bandipora, therefore we aimed to study the prescription pattern and assess the quality of prescription with the standard prescription norms for promoting rational drug use.

## **Aims and Objective**

To study the prescription pattern and assess the quality of prescription with the standard prescription norms in Out Patient department of various specialties of the District Hospital, Bandipora.

## **MATERIAL AND METHODS**

This observational study was conducted in District Hospital, Bandipora. The study was conducted over a period of one month and the calculated sample size was 95. (According to the

Guidelines of Prescription Audit by MoHFW). An additional sample of 5 was included in the study, making n=100. The patients receiving treatment in the outpatient departments of various specialties of the District Hospital were enrolled in the study after obtaining a written informed consent. Consecutive sampling technique was used to draw the required sample. 10 prescriptions were included from 10 OPD rooms. In case of pediatric age group, consent was obtained from parents. The patients who met the following inclusion criteria were included:

**Inclusion Criteria**

1. Patients of all age groups visiting the outpatient department of DH, Bandipora.
2. Patients with a valid OPD registration card from DH, Bandipora.
3. Those who gave consent.

**Exclusion Criteria**

1. Those who did not give consent.
2. Those who were advised admission.

The prescriptions of all the enrolled participants were studied using a checklist prepared from the Prescription Audit guidelines established by the Ministry of Health and family welfare. The data thus collected was analyzed using SPSS 20 software.

**ETHICAL CONSIDERATION**

Approval for the study was sought from the Institutional Ethical Committee (IEC), Sher-i-Kashmir Institute of Medical Sciences. Also, necessary permission was sought from the Medical Superintendent, District Hospital, Bandipora to get access to the OPD prescriptions.

**RESULTS**

**Table 1: Prescription Audit Checklist**

Patient ID ____	Age/Gender _____	Date _____	Name of Speciality ____
S.no:	Checklist	Yes	No
1	OPD Registration Number mentioned		
2	Complete name of the patient written		
3	Weight of the patient mentioned		
4	Brief history written		
5	Findings on examination written		
6	Provisional diagnosis written		
7	Allergy status mentioned		
8	Medication order written in capital letter		
9	Medication order written in generic form		
10	Medication order clean and readable		
11	Medication order has date and time mentioned		
12	Medication order has dosage, duration and frequency mentioned		
13	Route of administration mentioned		
14	Medication re-order quantity and duration mentioned		

15	Medication order signed and stamped by treating doctor		
16	Medication order relevant of findings/diagnosis		
17	Vitamins, Tonics or Enzymes prescribed		
18	Antibiotics prescribed		
19	Number of medicines prescribed		
20	Date of next visit (review) written with follow-up instructions		

Table 1 shows the checklist used for assessing the prescriptions.

**Table 2: Sociodemographic characteristics and completeness of prescription in relation to date of review with follow up instructions, brief history, findings on examination, provisional diagnosis and allergic status.**

		<b>Number n=100</b>	<b>Percent %</b>
Gender	Female	40	40
	Male	60	60
Age Group	1-20	23	23
	20-40	27	27
	40-60	44	44
	> 60	6	6
Complete name of the patient written	Yes	100	100
	No	0	0
Weight of the patient mentioned	Yes	13	13
	No	87	87
OPD registration mentioned	Yes	100	100
	No	0	0
Date of next visit (review) written with follow-up instructions	Yes	0	0
	No	100	100
Brief history written	Yes	51	51
	No	49	49
Findings on examination written	Yes	27	27
	No	73	73
Provisional diagnosis written	Yes	25	25
	No	75	75
Allergy status mentioned	Yes	4	4
	No	96	96

Table 2 shows that out of 100 study participants, 40 (40%) were females and 60 (60%) were males. 23 (23%) study participants belonged to the age group Of 1-20 years, 27 (27%) were 20-40 years of age, 44 (44%) were 40-60 years of age and 6 (6%) were more than 60 years of age. Complete name of the patient and OPD registration number was written in all the prescriptions, where as date of next visit (review) with follow-up instructions was not mentioned in any of the prescriptions. Weight of the patient was mentioned in only 13 (13%) prescriptions, and brief history was mentioned in 51(51%) prescriptions. Findings on examination and provisional diagnosis were written in 27 (27%) and 25 (25%) prescriptions respectively; and allergic status was mentioned in only 4 (4%) prescriptions.

**Table 3: Prescribing practices observed during Prescription Audit**

		<b>Number N=100</b>	<b>Percent %</b>
Medication order has date and time mentioned	Yes	7	7
	No	93	93
Medication order has dosage, duration and frequency mentioned	Yes	72	72
	No	28	28
Medication re-order quantity and duration mentioned	Yes	0	0
	No	100	100
Medication order signed and stamped by treating doctor	Yes	37	37
	No	63	63
Medication order relevant of findings/diagnosis	Yes	59	59
	No	41	41
Medication order written in capital letter	Yes	70	70
	No	30	30
Medication order written in generic form	Yes	17	17
	No	83	83
Medication order clean and readable	Yes	78	78
	No	22	22
Route of administration mentioned	Yes	35	35
	No	65	65
Vitamins, Tonics or Enzymes prescribed	Yes	10	10
	No	90	90
Antibiotics prescribed	Yes	44	44
	No	56	56

Table 3 shows that out of the 100 prescriptions studied, date and time was mentioned in the medication order in only 7 (7%) prescriptions and dosage, duration and frequency was mentioned in 72 (72%) prescriptions. Re-order quantity and duration was not mentioned in any of the prescriptions. Sign and stamp of the treating doctor was present on 37 (37%) prescriptions. Majority of the prescriptions (59%) had medications relevant to findings/ diagnosis. Medication was written in capital letters in most of the prescriptions (70%), but were written in generic form in only 17 (17%) prescriptions. Majority of the medication orders were clear and readable (78%). Route of administration was not mentioned in 65 (65%) prescriptions. Vitamins, Tonics or Enzymes were prescribed in only 10 (10%) prescriptions, while antibiotics were prescribed in 44 (44%) prescriptions.

## **DISCUSSION**

The present study aimed to assess the prescription pattern and evaluate the quality of prescriptions in the Outpatient Department (OPD) of various specialties at District Hospital, Bandipora. The findings of this observational study provide valuable insights into the prescription practices at the district-level government hospital in Northern Kashmir.

The study enrolled a total of 100 participants, with 40% being females and 60% males. The age distribution showed that 23% participants were in the 1-20 years age group, 27% were between 20-40 years, 44% were between 40-60 years, and 6% were above 60 years of age. This distribution highlights the diverse age groups seeking healthcare services at the outpatient department, indicating that healthcare services are utilized across various life stages.

### **Prescription Content**

The evaluation of prescription content revealed both positive and concerning aspects. It was encouraging to find that complete patient names and OPD registration numbers were consistently mentioned in all the prescriptions, ensuring accurate patient identification. This is attributed to the fact that prescriptions are generated by computerized registration and printing system. This is in accordance with a study conducted by Ahsan M et al (10), which showed that the prescriptions contained all the data in superscription. Contrary to our findings, a study conducted by Pavani Vet al (11), have found that only 15% prescriptions at St. Peters Institute of Pharmaceutical Sciences, Vidyanagar, Andhra Pradesh, India, noted the age of the patients and none of the prescriptions contained patient's address.

In our study, the date of next of visit with follow up instructions were not written in any of the prescriptions (0%). Similarly, Bandyopadhyay D et al (12) have found that follow-up visit was not mentioned in 97.87% of the prescriptions. Contrary to this, a study conducted by Singh et al (13) revealed that follow up advice was written in 24.2% prescriptions; implying that a significant area of improvement is seen in the absence of the date of the next visit (review) and follow-up instructions in all prescriptions. Including this information is crucial for patients to adhere to the prescribed treatment plan and schedule follow-up appointments.

### **Clinical Information and Medication Orders**

The study assessed the inclusion of essential clinical information and medication orders in the prescriptions. Only 13% prescriptions mentioned the patient's weight, an important consideration for appropriate dosage calculations. Similarly, in a study conducted by Panayappan L et al (14), it was found that weight was written on all pediatric prescriptions but not on prescriptions for adults. Contrary to this, a study conducted by Saha et al (15) showed that weight was lacking in all the studied prescriptions. A brief history was mentioned in 51% prescriptions, which helps in understanding the patient's medical background and aids in accurate diagnosis and treatment.

This is in accordance with a study conducted by Singh et al (13) in which 60% prescriptions contained brief history of the patient. However, findings on examination and provisional diagnosis were mentioned in a limited number of prescriptions, 27% and 25% respectively, suggesting a need for more comprehensive documentation. This is in contrast with the findings of Panayappan L et al (14) where 56% prescriptions had complete diagnosis written on them. In the same way, in a study conducted by Saha et al (15), it was found that provisional diagnosis was not written in 60% prescriptions.

Regarding medication orders, dosage, duration, and frequency were mentioned in 72% prescriptions in our study, indicating a satisfactory level of adherence to prescribing guidelines. This is in accordance with a study conducted by Panayappan L et al (14) in which dosage was missing in only 15% of prescriptions. Similarly, in a study conducted by Meenakshi et al (16), frequency was mentioned in 98.5% prescriptions. The absence of re-order quantity and duration in any of the prescriptions in our study raises concerns about patient adherence to long-term treatments and the possibility of medication shortages.

### **Prescription Legibility and Medication Format**

The study assessed the legibility and format of prescriptions, which are crucial factors for patient safety and error-free dispensing. The majority of prescriptions (78%) in our study were clear and readable, which is vital for pharmacists to interpret and dispense the medication accurately. This is in accordance with a study conducted at AIIMS, New Delhi (17) which revealed that majority (93.7%) of the prescriptions were legible. In contrast to our findings, Bhattacharya et al (18) found that only 51.21% of the prescriptions were legible with effort. In our study, a significant number of prescriptions (65%) lacked the mention of the route of administration, which is vital for proper drug delivery and patient compliance. This is in contrast to a study conducted by Abidi et al (9), in which route of administration was clearly mentioned with 93.51% being oral, 6.19% being injectables and 0.29% being topical forms. Similarly, in a study conducted by Meenakshi et al (16), route of administration was mentioned in 99.1% prescriptions.

In our study, it was observed that medication names were written in capital letters in 70% prescriptions, promoting legibility. This is in contrast to Meenakshi et al (16), where it was found that capital letters were used in only 17.3% prescriptions. In the present study, only a limited number of prescriptions (17%) mentioned medications in their generic form. This is in accordance with a study conducted by Saha et al (15) where it was found that 19.07% prescriptions had medications written in generic form, which was far below the WHO norm of 100%. Contrary to our findings, in a study conducted by Sudarsan M et al (19), it was found to be 69.26%.

### **Prescription Practices**

The present study also investigated specific prescription practices. Vitamins, tonics, or enzymes were prescribed in 10% of prescriptions in our study. Similarly, in a study conducted by Abidi A et al (9), it was found that vitamins, tonics and enzymes were prescribed in 10.08% prescriptions. In our study, antibiotics were prescribed in 44% prescriptions. This finding highlights the importance of antibiotic stewardship to prevent antibiotic resistance and promote rational drug use. Contrary to our findings, in a study conducted by Mishra et al (20), it was found that the rate of antibiotic prescription was 17.48%. Antibiotic prescription rate in India varied widely across different cities like, it was as high as 63.33% in Jaipur, whereas in Lucknow, it was only 20.6% (21,22). These variations may be attributable to the prevailing disease conditions in different settings.

In our study, sign and stamp of treating doctor was found in only 37% prescriptions. This is in contrast to a study conducted by Abidi A et al (9), in which it was found that signature of doctor was present in 91.98% prescriptions. In a study conducted by Singh et al (13), it was found that 65.8% prescriptions contained signature/initials of the doctor.

## **Implications And Recommendations**

The study results provide valuable insights into prescription practices at the District Hospital, Bandipora. The findings highlight both positive aspects and areas for improvement in prescription content, legibility, and adherence to guidelines. Addressing the deficiencies in prescription practices can enhance patient safety, treatment outcomes, and adherence to prescribed therapies.

Recommendations include implementing protocols for comprehensive prescription content, such as including the date of the next visit and follow-up instructions. Educating healthcare providers on the importance of documenting findings on examination and provisional diagnosis can improve patient care. Furthermore, encouraging the use of generic drug names and consistently mentioning the route of administration will facilitate error-free medication administration.

## **CONCLUSION**

In conclusion, this observational study on prescription audit in the OPD of District Hospital, Bandipora, provides insights into prescription patterns and quality. By addressing the identified limitations and incorporating recommendations, healthcare providers can enhance the quality of prescriptions, leading to improved patient care and treatment outcomes in the outpatient setting. These findings serve as a foundation for enhancing healthcare practices and patient safety at the district-level government hospital in Northern Kashmir. Further research and interventions can build on this study's findings to promote optimal healthcare delivery in the region.

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**Conflict of Interest:** None

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