

Prescription Pattern Audit among IPD Patients using WHO Core Prescribing Indicators in the Department of Obstetrics and Gynaecology at a Tertiary Care Teaching Hospital of North India

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Abstract

Background: Rational drug prescribing plays a crucial role in optimizing patient care outcomes. The World Health Organization (WHO) core prescribing indicators serve as standardized and reliable measures for evaluating key aspects of drug utilization patterns. The present study aimed to evaluate prescribing practices and the completeness of prescriptions using WHO-recommended core prescribing indicators.

Materials and Methods: A prospective, descriptive, cross-sectional study was carried out among admitted patients in the Department of Obstetrics and Gynaecology at Adesh Medical College and Hospital, Kurukshetra, Haryana. The study was carried out over a period of 4 months. A total of 560 prescriptions were randomly selected and evaluated. Data were entered and analysed using Microsoft Excel while statistical analysis was carried out using SPSS software.

Result: WHO core prescribing indicators analysis revealed that average number of drugs per prescription was 5. The drugs written by generic name were 21%. Out of total 2941 drugs, 18% drugs were antibiotics.

Conclusion: The final observations emphasize the need for regular prescription audits, continuous medical education, and strict adherence to WHO prescribing guidelines to enhance prescription quality, minimize medication errors, and promote rational drug therapy in tertiary care settings.

Keywords: Generic Drugs, Prescribing Indicators, Rational Prescribing, Prescription Audit.

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Introduction

Rational use of medicines is a fundamental principle of effective healthcare delivery, ensuring that patients receive appropriate medications in correct doses for an adequate duration at the lowest possible cost to both individuals and the community [1].

Despite global efforts to promote rational prescribing, irrational drug use remains a persistent challenge, particularly in hospital settings, contributing to polypharmacy, antimicrobial resistance, increased adverse drug reactions, and unnecessary economic burden [2]. Prescription auditing is a systematic approach used to evaluate

prescribing practices and assess adherence to established treatment guidelines [3]. It serves as an important quality assurance tool that helps identify inappropriate prescribing trends and supports the implementation of corrective measures to improve patient safety and therapeutic outcomes [4]. In this context, the World Health Organization (WHO) developed core prescribing indicators as standardized measures to objectively assess drug utilization patterns in healthcare facilities [5].

The WHO core prescribing indicators include the average number of drugs per encounter, percentage of drugs prescribed by generic name, percentage of

encounters with antibiotics, percentage of encounters with injections, and percentage of drugs prescribed from the essential medicines list [5]. These indicators provide a reproducible and validated framework for comparing prescribing practices across different healthcare settings and time periods [6].

Inpatient prescribing practices warrant particular attention due to the complexity of disease conditions, presence of comorbidities, and frequent use of multiple drug therapies [7].

In tertiary care teaching hospitals, prescribing patterns may also be influenced by clinical training practices and availability of diagnostic and therapeutic resources⁸. Regular assessment of inpatient prescriptions is therefore essential to promote rational drug use and ensure compliance with national and international guidelines.

This study was undertaken to evaluate prescription audit patterns among inpatients using WHO core prescribing indicators in a tertiary care teaching hospital, with the aim of identifying areas for improvement and promoting rational pharmacotherapy.

Materials and Methods

After obtaining approval from the Institutional Ethics Committee, a prospective, descriptive, cross-sectional study was carried out admitted patients in the Department of Obstetrics and Gynaecology at Adesh Medical College and Hospital, Kurukshetra, Haryana.

The study was carried out over a period of 4 months (August-November). A predesigned form was used to collect socio-demographic and economic details, along with information on drug use. Prescription sheets were audited from various

departments within the hospital. Only one prescription per patient was included in the study. A total of 560 prescriptions were randomly selected and evaluated. The prescriptions were analysed for completeness of format, including patient details such as name, age, sex, registration number, date of consultation, and legibility. Medical components assessed included brief clinical history, provisional or final diagnosis, investigations, appropriateness of dose and dosage, prescriber's signature.

All admitted patients of all the age groups with complete prescription records admitted in the general wards in the Department of Obstetrics and Gynaecology during the study period were included. However patients admitted in critical care units and intensive care units with were excluded. The patients with

Exclusion Criteria:

1. Patients admitted in:
 - ICU (Intensive care unit)
 - HDU (High Dependency Unit)
 - Any other critical care unit
2. Patients with severe/critical illness requiring intensive monitoring or ventilator support
3. Emergency cases with incomplete or illegible records
4. Day-care/short-stay admissions (e.g. minor procedures not requiring full admission)
5. Outpatient (OPD) prescriptions
6. Patients discharged against medical advice (LAMA/DAMA) before complete documentation.
7. Cases with missing drug details (dose, route, frequency not traceable)

The following indicators were assessed in the study (Table 1):

Table 1:

S. No	Indicators	Details
01.	WHO	• Average number of drugs per prescription • Percentage of drugs prescribed by generic name • Percentage of prescription containing antibiotics
02.	Others	• Demographic details of patient • Dosage details • Legibility • Use of capital letters • Unauthorized abbreviation used • Name and sign of doctor

Data were entered and analysed using Microsoft Excel to prepare tables, charts, and graphs, while statistical analysis was carried out using SPSS software.

Compliance percentages for each objective element were calculated, and appropriate comparisons were made. A checklist based on the objective elements

of the NABH 5th Edition standards (MOM 4, 5, 6, and 7) was developed to evaluate prescription compliance.

Results

A total of 560 prescriptions were assessed from clinical departments of Adesh Medical College and Hospital, Shahabad, Kurukshetra. Every

prescription that was audited showed 100% compliance with the patients' names being mentioned. All the collected prescriptions had patient details (age, sex, address, contact details). Diagnosis was mentioned in 358 (63.9%)

prescriptions while it was not mentioned in 202 (36.1%) prescriptions.

The patient allergies were not specified in n=291 (51.9%) prescriptions, out of 560 prescription 36% have legibility and overwriting errors.

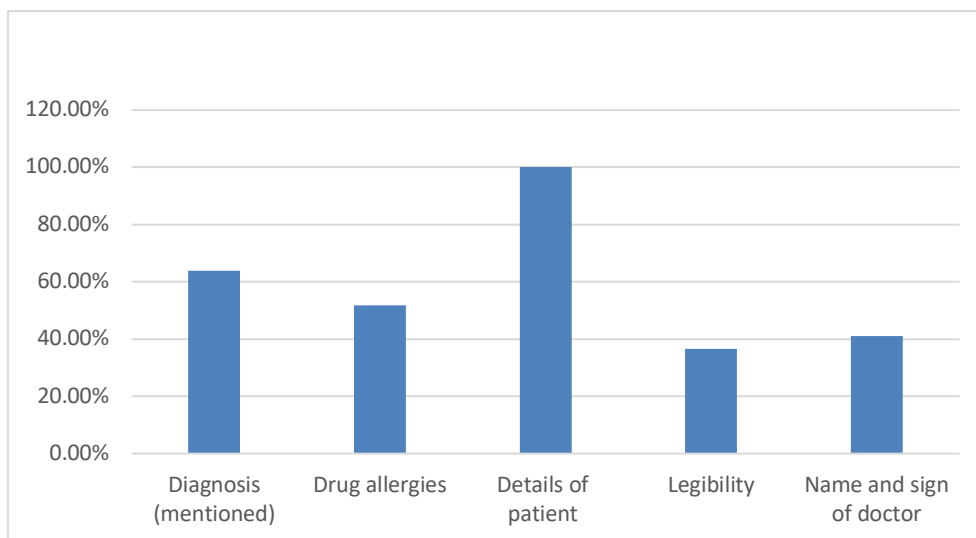


Figure 1:

On analysing the dosage regimen component, a total of 2941 drugs were prescribed. Out of which 68% dosage mentioned and (89%) and (72%) of the drugs had route and frequency mentioned, respectively. Despite the fact that only (39%) of the drugs were written in capital letters, (81%) of the prescriptions were having unauthorized abbreviations, (19%) of the prescriptions were authorized abbreviations.

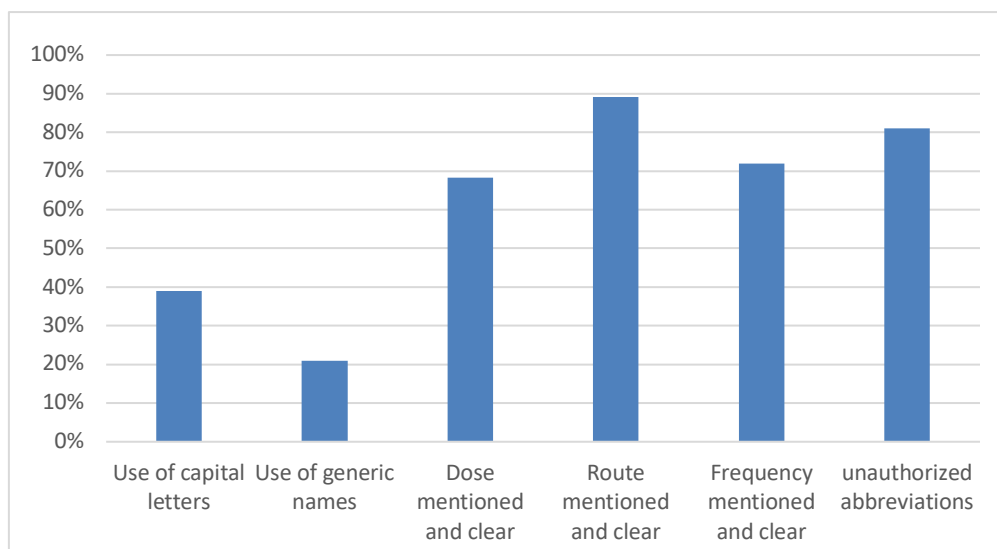


Figure 2:

WHO core prescribing indicators analysis revealed that average number of drugs per prescription was 5. The drugs written by generic name were 21%. Out of total 2941 drugs, 18% drugs were antibiotics.

Table 2: The World Health Organization core drug use indicators (total encounters=560; total drugs=2941)

Core Drug use Indicators	Frequency/ Percentage	Recommended by WHO
Average number of drugs per prescription	5	1.8-2
Percentage of drugs prescribed by generic name	21%	100%
Percentage of encounters with an antibiotic prescribed	18%	20-20.6%

Discussion

The present prescription audit demonstrated complete compliance with documentation of patient identification details, including name, age, and sex, address, and contact information. Similar findings have been reported in previous prescription audit studies conducted in tertiary care hospitals, suggesting satisfactory adherence to basic prescription-writing requirements in institutional settings [9,10]. However, the absence of documented diagnosis in over one-third of the prescriptions is a significant concern. Comparable observations have been reported in studies from India and other developing countries, where inadequate recording of diagnosis remains a recurring issue [11,12]. According to World Health Organization (WHO) guidelines, mentioning the diagnosis is crucial for ensuring rational drug use, facilitating prescription review, and promoting continuity of patient care [13].

Evaluation of the dosage regimen revealed that although the route and frequency of administration were documented for the majority of drugs, dosage details were not uniformly specified. Similar deficiencies have been noted in earlier studies, indicating a common trend of incomplete prescription writing [14,15]. WHO prescribing standards emphasize that dose, route, and frequency should be clearly stated for every prescribed medication to reduce the risk of medication errors and improve therapeutic outcomes [13].

Poor legibility of prescriptions, limited use of capital letters for drug names, and low utilization of authorized abbreviations observed in the present study are consistent with findings from other published literature [16,17]. Illegible handwriting and non-standard abbreviations have been identified as important contributors to prescribing and dispensing errors. WHO strongly discourages the use of unauthorized abbreviations and recommends legible prescription writing to enhance patient safety [13].

Analysis based on WHO core prescribing indicators revealed a high average number of drugs per prescription, exceeding the WHO recommended optimal range of 1.8-2 drugs per encounter, thereby indicating a tendency toward polypharmacy [13]. Similar patterns have been reported in other tertiary care hospital studies, particularly in settings managing complex or referred cases [18,19]. Additionally, the low proportion of drugs prescribed by generic name observed in the present study is comparable to findings from previous Indian studies but remains inconsistent with WHO recommendations, which advocate generic prescribing to improve cost-

effectiveness and accessibility of medicines [13,20]. Overall, these findings underscore the need for regular prescription audits, continued medical education, and strict adherence to WHO prescribing guidelines to promote rational drug use.

Conclusion

The findings of the present study indicate satisfactory compliance with documentation of patient identification details; however, important deficiencies were observed in other key components of prescription writing. Incomplete recording of diagnosis, inconsistencies in dosage regimen details, poor legibility, and limited use of capital letters and authorized abbreviations highlight gaps in prescribing practices. The high average number of drugs per prescription suggests a tendency toward polypharmacy, while the low rate of generic prescribing remains inconsistent with WHO recommendations for rational and cost-effective drug use. These observations emphasize the need for regular prescription audits, continuous medical education, and strict adherence to WHO prescribing guidelines to enhance prescription quality, minimize medication errors, and promote rational drug therapy in tertiary care settings.

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