

## Prescription Audit in Out-Patient Department of a District General Hospital in Gujarat: A Cross-sectional study

Dr Priya Mehta \*, Dr Bhargav Purohit\*\*

\* Resident doctor, \*\* Associate Professor and In charge Head, Department of Pharmacology, Government Medical College, Bhavnagar, Gujarat. India 364001

**Abstract:** Aims And Objectives: To assess the completeness and rationality of prescriptions in District General Hospital, Botad using WHO core prescribing indicators and other parameters. Materials And Methods: An analysis of 145 prescriptions from Botad District General Hospital in Gujarat (June-August 2023) explored drug count, brand name usage, Fixed Dose Combinations (FDCs), drug sourcing, adherence to the National List of Essential Medicines (NLEM), antimicrobial prescriptions, injectable drugs usage, vitamins, iron supplements, and prescription completeness mainly using WHO's prescribing indicators. Results: The analysis revealed several key findings, including a high prevalence of polytherapy (95.86%), brand name usage (73.79%), and the use of Fixed Dose Combinations (44.9%), of which 90% were rational. Hospital supplies accounted for a significant portion of drug sourcing (98.15%). Antimicrobial prescriptions were frequent (39.31%), and injectable medications were prescribed judiciously (4.14%). Vitamins and iron supplements were commonly included (34.48%). Alarming, 84.14% of prescriptions lacked a formal diagnosis, and none were considered complete. Conclusions: Optimizing prescription practices, promoting generic prescriptions, evidence based antimicrobial usage, and accurate diagnosis documentation are essential for better healthcare delivery in this healthcare setting.

**Keywords:** Prescription pattern, brand names, Fixed Dose Combinations (FDCs), National List of Essential Medicines (NLEM), antimicrobials, completeness [Mehta P Natl J Integr Res Med, 2023; 14(6):28-30, Published on Dated: 28/12/2023]

**Author for correspondence:** Dr. Priya Mehta, Department of Pharmacology, Government Medical College Bhavnagar. E.mail : dr.priyamehta26@gmail.com

**Introduction:** Prescription patterns provide critical insights into healthcare quality assessment. Improperly written prescriptions cause a great deal of problems such as the wrong drug dispensed to the wrong patient, improper dosage, improper duration of treatment, drug interactions, and increased cost of treatment which ultimately impair proper healthcare and affect patients' health.<sup>1</sup>

Studies suggest that prescription errors are common and can affect from around 4.2 to 82% of prescriptions.<sup>1</sup> To control or prevent such errors in prescription writing, a periodic systematic review and assessment of methods of prescription writing is necessary which is possible with the help of a prescription audit.

This study delves into the intricacies of prescription practices in an urban healthcare setting, offering a unique perspective on healthcare delivery challenges and opportunities.

**Material & Methods:** This is a cross-sectional, observational study Between June and August 2023, involved 145 prescriptions from the District

General Hospital in Botad, Gujarat. The study was granted approval by the local Institutional Review Board. (EC Approval no.-1309/2023)

Assessment of each prescription was done using the WHO/International Network for the Rational Use of Drugs Health Facility Prescribing Core Indicators as the primary focus.<sup>[2]</sup> These indicators included the following:

- Average number of drugs per prescription.
- Percentage of drugs prescribed by generic name.
- Percentage of prescriptions with an antibiotic prescribed.
- Percentage of prescriptions with injections prescribed.
- Percentage of drugs prescribed from the Essential Drug List (NLEM).

Additionally, assessment of the completeness of each prescription by checking for other essential components, such as the presence of diagnosis, drug doses, frequency, duration of treatment, follow-up, and the use of fixed-dose combinations (FDCs), legibility, number of drugs from hospital supply, prescriptions with vitamins or iron supplements prescribed etc. was done.<sup>2,3</sup>

We conducted descriptive statistical analyses as

This is an Open Access article distributed under the terms of the Creative Commons Attribution 4.0 International License (<http://creativecommons.org/licenses/by/4.0/>), allowing third parties to copy and redistribute the material in any medium or format and to remix, transform, and build upon the material for any purpose, even commercially, provided the original work is properly cited and states its license.

part of our evaluation.

**Results:** The demographic distribution unveiled 71 prescriptions for male patients and 74 for female patients. Polytherapy was notably prevalent, with 95.86% of prescriptions involving multiple drugs. Brand names were featured in 73.79% of prescriptions (41.59% of all drugs prescribed). FDCs were employed in 44.9% of cases of which 90% were rational. Hospital supplies accounted for a significant portion of drug sourcing (98.15%). Antimicrobial prescriptions were frequent at 39.31%. Injectable medications were prescribed in 4.14% of prescriptions. Vitamins and iron supplements were commonly included (34.48%). Alarming, 84.14% of prescriptions lacked a diagnosis, and none were deemed complete.

**Table 1: WHO Prescribing Core Indicators**

Sr No.	Indicator	N(%)
1	Average number of drugs per prescription	3.87
2	Percentage of drugs prescribed by generic name	330(58.41%)
3	Percentage of prescriptions with an antibiotic prescribed	57(39.31%)
4	Percentage of prescriptions with injections prescribed	6(4.14%)
5	Percentage of drugs prescribed from essential drug list	422(97.11%)

**Table 2: Other Parameters**

Sr. No	Indicator	N
1	Prescriptions without any drug therapy	0
	Prescriptions with monotherapy	6 (4.14%)
	With polytherapy (more than one drug)	139 (95.86%)
2	Fixed Dose Combinations(FDC)	
	Prescriptions with FDC	65 (44.9%)
	Total number of FDCs prescribed	80 (14.16%)
	Number of FDCs per prescription	0.55
	Total no of rational FDCs	72(90%)
3	Hospital supply	
	Number of prescriptions with	19(1.85%)

	drugs NOT from the hospital supply	)
	Total number of drugs NOT from hospital supply	12
4	Vitamins/Iron prescriptions	
	Prescriptions with Vitamins/iron	50 (34.48%)
	Total number of Vitamin/Iron prescribed	68
	Number of iron/vitamins containing drugs per prescription	0.47
5	Number of prescriptions without diagnosis	122(84.14%)
6	Number of complete prescriptions	0(0%)
7	Omission(per prescription for prescribed drugs)	
	Dose not mentioned	92
	Frequency not mentioned	29
	Duration not mentioned	41
	Instructions not mentioned	145
	Follow-up not mentioned	145
8	No. of legible prescription	145
	Grade (1,2 or 3)	1-134, 2-11, 3-0

**Discussion:** Polytherapy Predominance: The prevalence of polytherapy underscores the need for rationalizing drug combinations, emphasizing the importance of medication necessity, dose optimization, and patient education.[4] Regular reviews are essential to streamline polytherapy, reduce costs, minimize drug interactions, and improve adherence.

**Brand Name Utilization:** The high prevalence of brand name usage suggests potential affordability issues. Encouraging generic prescribing can enhance cost-effectiveness while maintaining therapeutic quality.<sup>2</sup> A transition towards evidence-based, generic choices benefits both patients and healthcare budgets.

**Fixed Dose Combinations (FDCs):** The prevalence of FDCs highlights their potential to simplify medication regimens, but their use must be approached with caution. FDCs should align with clinical needs to avoid unnecessary complexity and adverse effects.<sup>4-5</sup> **Drug Sourcing:** Emphasizing the procurement of a significant portion of drugs from the hospital's internal

supply chain underscores the robustness and capacity of the healthcare infrastructure.

**Antimicrobial Prescriptions:** The high rate of antimicrobial prescriptions raises concerns about antimicrobial resistance<sup>6</sup>. Adherence to evidence-based guidelines and judicious use are crucial. Antimicrobial stewardship programs can promote responsible prescribing and safeguard against resistance.

**Injectable Medications:** Prudent use of injectable medications reflects responsible clinical judgment. Continued adherence to these practices minimizes potential risks associated with invasive drug administration.

**Vitamins and Iron Supplements:** The prescription of nutritional supplements is commendable but should align with evidence-based guidelines. Avoiding unnecessary supplementation is crucial to prevent potential harm.[6]

The absence of diagnoses in a significant proportion of prescriptions underscores the importance of accurate diagnosis and documentation. Comprehensive prescriptions are essential for patient safety and treatment efficacy. By addressing these issues, healthcare providers can optimize prescription practices[1], ultimately enhancing patient care in this unique urban healthcare setting.

**References:**

1. Ross S, Bond C, Rothnie H, Thomas S, Macleod MJ. What is the scale of prescribing errors committed by junior doctors? A systematic review. *British journal of clinical pharmacology*. 2009 Jun;67(6):629-40
2. World Health Organization. How to investigate drug use in health facilities: selected drug use indicators. World Health Organization; 1993.
3. prescription audit guidelines NHM [https://nhsrindia.org/sites/default/files/2021-07/1534\\_Prescription%20Audit%20Guidelines16042021.pdf](https://nhsrindia.org/sites/default/files/2021-07/1534_Prescription%20Audit%20Guidelines16042021.pdf)
4. Duerden M, Avery T, Payne R. Polypharmacy and medicines optimisation. Making it safe and sound. London: The King’s Fund. 2013 Nov.
5. Rajan PD, Rajendran AK, Kasthuri A. Evaluation of drug use in the Urban Health Centre of tertiary health care using drug use

indicators developed by WHO. *World Journal of Pharmaceutical Sciences*. 2017 Apr 27:191-4.

6. Incze M. Vitamins and nutritional supplements: What do I need to know?. *JAMA Internal Medicine*. 2019 Mar 1;179(3):460-.

Conflict of interest: None
Funding: None
Cite this Article as: Mehta P, Purohit B. Prescription Audit in Out-Patient Department of a District General Hospital in Gujarat: A Cross-sectional study. <i>Natl J Integr Res Med</i> 2023; Vol.14(6): 28-30