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Review Article

Prescription Auditing In Tertiary Care Hospitals- A Review

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ABSTRACT

Irrational prescription is most common problem in tertiary care hospitals. Prescription auditing can help to find out the cause of errors. It is a systematic tool for assessing the quality of medical care, including the methods used to treat patients. The aim and objective of this study is to minimize the error and implementing the prescription auditing in all tertiary care hospitals .Improves patient care by prescribing correct medicines. When writing prescriptions the majority of medical practitioner ignores the norms. The prescribing procedures required extensive study and time to standardise the prescription as per need of patients with complete information's. Prescription errors can occur for a variety of reasons, including miscommunication between healthcare providers, lack of access to complete patients information, and simple human mistakes. Others factors, such as high workloads, distractions, and poor healthcare system design, can also contribute to prescription errors. Prescription errors can have serious, and sometimes life-threatening, consequences for patients. These include adverse drug reactions, prolonged hospital stays, increased healthcare costs.

INTRODUCTION

Prescription auditing is a crucial process in tertiary hospitals, ensuring the accuracy, safety, and compliance of medication orders. It involves a systematic review of prescription records to identify and address any errors or discrepancies, ultimately improving patient outcomes and enhancing the overall quality of healthcare. A prescription and also be abbreviated medical prescription **(Rx),** is a order for medicines which a registered practitioner writes and which is given to the pharmacist to prepare and administer the medicine. According to the World Health Organization (WHO), "Rational use of medicines requires that patients receive medications appropriate to their clinical needs, in doses that meet their own individual requirements, for an adequate period of time, and at lowest cost to them and their community [1]. There are 7000 mortalities from medication errors in hospitals; 20000 from other errors in hospitals; 80000 from infections in hospitals; 106000 deaths every year

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from non error, adverse effects of medications. According to recent finding, the incidence of adverse drug events was as high as 82/1000 prescriptions in Delhi, the national figures report up to 5.2 million medical errors annually. Many prescriptions are illegible and incomplete; they are missing out on certain essential elements, thus increasing the likelihood of occurrence of medication errors, and leading to drug toxicities; some of which could be life threatening for the patients. Other problems with irrational prescribing could be development of antibiotic resistance, failure of treatment, increased treatment cost, development of drug dependence, wastage of scarce health resources, and lack of patient confidence on the health-care system [2]. 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 systematic review of care against explicit criteria and the implementation of change [3]. Prescription auditing is also an educational activity, and if regularly done, can aid in improving the prescription quality and thus can enable the patient to receive high standard and best- quality care [4]. The most common source of medication errors is a breakdown in the procedures that have been built for handling and processing medications, from prescribing and ordering to distributing and administering them [5]. Medication mistakes are becoming more prevalent in the UK [6]. Prescription audit is a continuous cycle that includes observational practice, comparison of practice to standards, setting standards, implementing changes, and observing new practice. It is a systematic, critical analysis of the provision of quality medical care, including the procedures used for diagnosis and treatment, the use of resources, and the resulting outcome and quality of life for the patients [7]. A widespread issue is irrational prescribing. The rationality of the prescribing pattern is crucial because poor prescribing practices, such as the abuse, overuse, and underuse of medications, can result in risky treatment, extended hospital stays, health risks, financial burdens on patients, and the waste of precious resources. The patient's quality of life may be impacted by all of these [8]. One of the errors that patients encounter most frequently and that could hurt them is the route of administration [9], according to a United States Pharmacopeia (USP) report on mistake reporting. According to studies, errors related to the administration method occur at frequencies of 19% and 18% of total drug errors. Adverse dose and infusion rate reactions were the pharmacological mistakes that were most frequently reported. The use of acronyms in prescriptions (instead of the full names of pharmaceuticals) and drug name similarity were the most frequent causes of medication mistakes. As a result, the primary factor contributing to drug mistakes was a lack of pharmacological understanding. As part of their ethical and professional duties, doctors are required to write clear and concise prescriptions. The quality of the drugs can be improved using a variety of strategies. Utilizing electronic prescriptions is one such approach that ensures the accuracy and readability of prescriptions [10]. Drug usage is stopped by auditing, which also monitors the rationale for drugs. The success of a prescription is a reflection of the physician's attitude and comprehension of rational prescriptions. Spelling errors, missed dose administration times, incorrect dose calculations, and omissions of the patient's body weight are just a few of the issues that might lead to a prescription being misread. Additionally, these problems can make it difficult for pharmacists to provide the patient's drugs [11]. An ideal prescription should clearly state the generic name of the drug being used, the formulation being used with the dose, the frequency of administration, and the total quantity of the drug to be supplied for the duration of the treatment. It

should also include the patient's full name, age, address, hospital registration number, date of the prescription, and the clinical diagnosis. This needs to be signed by the prescribing doctor and should include the patient's name, medical registration number, and, if available, address [12]. Medication mistakes can happen at any stage, from prescription to drug delivery. In India, 5.2 million injuries related to drug errors and side effects are recorded annually, while in the US, 7000 hospital deaths related to medication errors are documented annually. The patient's trust in the healthcare systems is undermined by the pharmaceutical error, which raises morbidity, death, cost burden, and other outcomes. Uncompleted patient information, unavailability of drug information, miscommunication of drug orders, which can involve poor handwriting, confusion between drugs with similar names, misuse of zeroes and decimal points, confusion of metric and other dosing units, inappropriate abbreviations, lack of appropriate labelling as drug is prepared and repackaged into smaller units, and environmental factors, such as lighting, heat, a Common medication issues include inadequate patient information, unavailability of drug information, miscommunication of drug orders, which can involve poor handwriting, confusion between medications with similar names, misuse of zeroes and decimal points, confusion of metric and other dosing units, inappropriate abbreviations, lack of appropriate labeling as a medication is prepared and repackaged into smaller units, and environmental factors, such as lighting, heat, noise, and inclement weather[13]. The patient's diagnosis, consider whether the prescription is suitable, and assess the drug's dosage in relation to the patient's age, body weight, and Determine whether the patient's age and diagnosis warrant a different medication schedule; whether therapeutic duplication of the prescribed medication exists; whether a potential drug interaction fund is included in the prescription; whether the drug for which the medication order is intended in the medication chart is appropriate; whether the medication orders are legible, dated, timed, names, and signed; and whether the medication chart is appropriate in that it does not contain any unapproved abbreviations[14].

Importance of Prescription Auditing in Tertiary Hospitals

Tertiary hospitals, with their complex patient populations and advanced medical treatments, face heightened risks of medication errors. Prescription auditing helps mitigate these risks by identifying issues, such as drug interactions, inappropriate dosages, or incomplete information, and implementing corrective measures to enhance patient safety.

The Mechanics of Prescription Order Writing:

The prescription is composed of the prescriber's name and signature, the superscription, the inscription, the subscription, the signa, and other information on a single sheet.

Superscription: The superscription contains the prescription order number in addition to the patient's name, address, weight, and age. As per certain accounts, the letter "Rx" is an acronym for the Latin word "recipe," which implies "take" or "take thus," and is directed or instructed to a pharmacist prior to a physician's "recipe" for prescribing medication.

Purpose: In order to guarantee that the right drug is given to the right patient and for identification and record-keeping purposes, the patient's name and address must be included on the prescription order. A patient's relevant information, such as weight, age, or body surface area, should also be mentioned on the prescription for drugs whose dosage requires computation. Instead of seeing this as a burden, prescribers should see it as an effort to help them achieve their patient safety goals by shielding them from mistakes.

Inscription: The body of the prescription. It includes each ingredient's name and strength that needs to be compounded, as well as the name and quantity of the medication to be delivered. Point (i): Is the medication recommended in accordance with the clinical condition appropriate or inappropriate? (ii) How readable the prescription is written. One well-known and avoidable reason for dispensing errors is poor penmanship. Precision and readable texts are crucial. Preventing ambiguity in terminology, such as µg for microgram, mg for milligram, tablespoonful, and teaspoonful. (iv) Medicine is shortened. (v) Using Arabic (decimal) numerals instead of Roman ones (e.g., does "IL-II" stand for "IL-11" or "IL-2"?); spelling out numerals is preferred in some situations. Additional criteria included in the WHO core prescribing indicators.

Subscription: Subscription is the wording used by the pharmacist, which is usually something like "make a solution," "mix and place into 30 capsules," or "dispense 30 tablets."

Signa: The pharmacist reads the prescription and transfers the instructions to the label, which is known as the "sig" or signa, giving the patient instructions on how to take the medication. The prescription bears the Latin Signatura abbreviation "Sig" to indicate the medicine administration instructions. It is not recommended to utilize abbreviations in directions, especially in Latin, as this can result in mishandled prescriptions and directions that are not "taken as directed."

Signature: Identity, name, address, and qualifications of the prescriber. Prescriptions for restricted substances must contain the doctor's name, address, and registration number.[15]

Regulatory Compliance and Prescription Auditing

Adherence to Regulations- Prescription auditing ensures compliance with national and local regulations, safeguarding the hospital's legal and ethical standing.

Standardized Practices- Auditing promotes the adoption of standardized prescription practices, fostering a culture of quality and consistency in healthcare.

Continuous Monitoring- Ongoing auditing enables the identification and resolution of issues, maintaining regulatory compliance over time.

Medication Reconciliation and Prescription Auditing Admission- Auditing the patient's medication history at the time of hospital admission to ensure an accurate medication list.

Inpatient Care- Ongoing auditing of medication orders during the patient's hospital stay to prevent unintended changes or discrepancies.

Discharge- Reconciling the patient's medications at the time of discharge to provide a comprehensive and accurate medication plan.

Optimizing Prescription Practices through Auditing

Identifying Patterns- Prescription auditing helps detect recurring issues or trends, allowing for the implementation of targeted improvements.

Continuous Education- Audit findings can inform educational programs for healthcare professionals, enhancing their knowledge and skills.

Technological Integration- Auditing insights can drive the adoption of innovative technologies, such as electronic prescribing systems, to streamline and safeguard the prescription process.

Workflow Optimization- Prescription auditing can identify opportunities to optimize clinical workflows, improving efficiency and reducing the risk of errors.

Continuous Improvement in Prescription Auditing

Audit- Conducting regular prescription audits to identify areas for improvement.

Analyze- Thoroughly analyzing audit findings to understand the root causes of issues.

Implement- Developing and implementing targeted interventions to address identified problems.

Monitor- Continuously monitoring the impact of interventions and making adjustments as needed.

Enhancing Patient Education and Engagement

Medication Literacy- Educating patients on their prescribed medications, including proper administration, potential side effects, and the importance of adherence, can empower them to actively participate in their own care and identify potential errors.

Medication Reconciliation- Involving patients in the medication reconciliation process, such as reviewing their current medication list, can help to identify discrepancies or changes that may have occurred during transitions of care.

Feedback and Reporting-Encouraging patients to report any medication-related concerns or errors can provide valuable insights for healthcare providers and help to identify areas for improvement in the medication management process.

Technology-Driven Solutions: Electronic Prescribing and CPOE(Computerized Physician Order Entry)

Electronic Prescribing- Implementing electronic prescribing systems can reduce errors by preventing illegible handwriting, automating dosage calculations, and providing real-time alerts for potential drug interactions or allergies.

CPOE Systems- Computerized Physician Order Entry (CPOE) systems allow healthcare providers to directly input patient orders, including medications, which can help to standardize the ordering process and reduce the risk of transcription errors.

Integrated Databases- Linking CPOE and electronic prescribing systems to comprehensive drug databases can provide healthcare providers with up-to-date information on medication dosages, interactions, and contraindications.

Improving Pharmacy Workflows and Oversight

Pharmacy-Driven Interventions- Implementing robust medication review processes, including double-checks and independent verification of orders, can help to identify and resolve prescription errors before they reach the patient.

Automated Dispensing Cabinets- Utilizing automated dispensing cabinets in clinical areas can improve the accuracy and efficiency of medication distribution, reducing the risk of errors during the medication administration process.

Pharmacy Oversight and Reporting- Establishing clear protocols for pharmacy oversight, including regular audits and error reporting, can help to identify systemic issues and implement targeted interventions to improve medication safety.[16]

W.H.O core prescribing indicators:

The prescription practices indicators assess how well medical professionals operate in a number of crucial domains pertaining to the responsible use of medications. The practices seen in a sample of clinical encounters for the treatment of acute or chronic illnesses at outpatient health facilities form the basis of the indicators. These interactions can be seen in a group of patients who were present at the clinic on the day the information was gathered. There is no requirement to gather any data on signs and symptoms in order to use the core prescribing indicators. Regardless of specific diagnoses, the core prescribing indicators evaluate overall prescription behaviours within a given environment because the samples of clinical encounters encompass a wide range of health conditions.

1. The typical amount of medications per prescription.

2. Percentage of medications administered under their generic names.

3. Percentage of prescriptions that include an antibiotic.

4. Percentage of prescriptions that include an injection

5. Percentage of medications prescribed from the list of necessary pharmaceuticals.

CONCLUSION

Our study concluded that most prescriptions contained all the necessary information, with the exception of the doctors' registration number, generic prescription, capitalized drug names, and patient instructions. Before writing a prescription, the majority of prescribers must look for medication interactions, drug duplication, and drug-food interactions. Spending more time on the prescriptions while adhering to the right framework and criteria will reduce adverse events associated with prescription errors as well as discrepancies/delays in patient care with the intended drug therapy.

REFERENCES

1. Ofori- Asenso R, Agyeman AA, Irrational use of medicines- a summary of key concepts Pharmacy 2016.
2. National institute for clinical excellence (NICE): Principles for best practise in clinical Audit. Oxford:Radcliffe publishing; 2002.
3. Ahsan M, Shaifali 1, Mallick AK, Singh HK, Verma S, Shekhar A. Prescription auditing based on world health organization prescribing indicators in a teaching hospital in north India Int J Med Res Rev 2016; 4:1847-52.
4. National coordinating council for medication error reporting and prevention . About medication errors [Homepage on the internet] [Updated on2001; cited on 7th April 2006].
5. Bates DW, Cullen DJ, Laird N, Petersen LA, small SD, servi D, etal. Incidence of adverse druf events and potential adverse drug events: Implications for prevention, ADE prevention study group.JAMA 1995;274:29-34.
6. Bandyopadhyay DA. Study of prescription auditing in a Tertiary Care Teaching Hospital of Eastern India. J Drug Deliv Therap. 2014;4(1):140-9.
7. Abidi A, Gupta S, Kansal S. Prescription auditing and drug utilization pattern in a tertiary care teaching hospital of western UP. Int J Basic Clin Pharmacol. 2012:1(3):184.
8. Santell JP, Hicks RW, McMeekin J, Cousins DD. Medication errors: experience of the United States Phacrmacopeia (USP) medmarx reporting system. J Clin Pharmacol. 2003;43:760-7.
9. Albarrak AI, Rashidi EA, Fatani RK, Ageel SI, Mohammed R. Assessment of legibility and completeness of handwritten and electronic prescriptions. Saudi Pharm J 2014;22:522-7
10. Hogerzeil HV. Promoting rational prescribing: an international perspective. Br J Clin Pharmacol. 1995;39(1):1–6.
11. Afsan M, Alam MM, Noor N, Yousuf AKM, Haque MME. Audit of typical prescription format among the prescribers of a garment medical centre in Bangladesh. Update Dent Coll J. 2011;1:7-12.
12. Sinha G, Acharya LD, Thunga G, Mathews TA. Study of medication errors in general medicine wards of the south Indian tertiary care hospital. Asian Journal of Pharmaceutical and Clinical Research. 2016;9(4):196-200
13. World Health Organization. Action Programme on Essential Drugs and Vaccines. How to investigate drug use in health facilities: selected drug use indicators, 1993.
14. Patterson HR. The problems of audit and research. J R Coll Gen Pract. 1986;36(286):196
15. Seden K, Kirkham JJ, Kennedy T, et al. Cross-sectional study of prescribing errors in patients admitted to nine hospitals across North West England.
16. Ahuja MM, Deshmukh SM, Pachpohar SM, Sagat A, Nawale K, Shinde P et al. A Study of

Prescription Audit in Inpatient Department of Tertiary Care Hospital, Pune. IAJPS. 2018;5(1):335-41.

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