Research Article

Prescription audit in outpatient department of multispecialty hospital in western India: an observational study

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ABSTRACT

Background: Studying the prescribing audit is that part of the medical audit which seeks to monitor, evaluate and if necessary, suggest modifications in the prescribing practices of medical practitioners. Our objective was to study the Prescription Audit in Out Patient Department of in Multispecialty Hospital in western India.
Methods: An Observational study was carried out during the period of 2012-2013. Total 150 prescriptions of Outpatient department were collected, scrutinized and statistically analyzed with Reporting procedures to pharmacy and quality department. We have also considered Statistical Process control (SPC) to provide the guidance on how the process may be improved by reducing variation & to assess the performance of a process.
Results: Total 150 patients were evaluated for Prescription Audit, out of which 60% were Male & 40% were Female cases. In the same mainly 13 parameter were assessed according to the checklist provided by the Hospital with total 1950 (150*13) counts; from this 1126 Counts were under compliance, 74 Counts were non-compliance & 750 Counts were not applicable. 50 cases were analyzed for 3 months, showed better compliance rate of prescription audit parameters in February 2013 compared to December 2012, while non-compliance rate in prescription audit was reduced as time progresses.
Conclusions: A definite role of clinical pharmacist, in the process control by utilizing SPC during prescription audit. The members of the hospital and Quality committee need to focus on findings of it, which help them during accreditation by regulatory authority.

Keywords: Prescription audit, Clinical pharmacist, SPC, Hospital quality committee

INTRODUCTION

Measuring the flow of prescriptions from physicians to pharmacist to patients, Prescription Audit offers the most comprehensive overview of performance, detailing parameter as per the check list of prescription audit. The quality of life can be improved by enhancing the standards of the medical treatment at all levels of the health care delivery system. A medical audit oversees the observance of these standards.[1] 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.[2] Studying the prescribing audit is that part of the audit which seeks to monitor, evaluate and if necessary, suggest modifications in the prescribing practices of medical practitioners.[3]

The main tool used to direct administration of medicines in a hospital setting is the Prescription and Administration Record. There are many variations in use, but most contain the following sections: Basic patient information identifies the prescription with the correct patient. Often 'filled in' using a sticky addressograph label, which introduces the real possibility of serious error. Previous adverse reactions/allergies for

communicating important patient safety information based on a careful drug history or the medical record. Other medicines charts Notes any other hospital prescription documents that contain current prescriptions being received by the patient (e.g. Anticoagulants, insulin, oxygen).

A fundamental principle of rational prescribing, deserving of consideration prior to writing any prescription, is that, on the balance of probability, the patient has a significantly greater chance of deriving benefit from the prescribed medication than being harmed. This judgment depends on knowledge of four important areas: The clinical and medication history, including previous adverse reactions; The clinical diagnosis; Relevant patient and clinical factors that might influence drug action, e.g. age, pregnancy, renal and hepatic impairment; and Familiarity with the medicine to be prescribed. Uncertainty in any of these areas is likely to increase the chances of adverse outcomes.

Good clinicians have always organized some kind of systematic review of their daily work, recording and assessing the accuracy, of their diagnosis and the outcome of their treatment. We have learnt to call this activity as audit. It will be not appropriate to define medical audit without discussing the concept on which its definition is based. However, for simple understanding of the issue medical audit is defined as the evaluation of the quality of the medical care through the analysis of the medical records in the retrospect.[4,5]

Potential benefits of prescription audit[6]:

1. Identify and promote good practice

2. Improve professional practice and quality standards

3. Supports learning and development of staff and organizations

4. Identify and eliminate poor or deficient practice

5. Identify and eliminate waste

6. Promote working with multidisciplinary teams

7. Allocate resources (financial, human) to provide better patient care

8. Develop opportunities to present findings with relevant faculty and facilitate shared learning.

Prescription Audit Checklist are considered as following points: Patient Information, Sig or directions, Quantity dispensed, Refills and date prescribed, Prescriber signature, prescribers degree, brand vs. generic drugs.[7]

Role of clinical pharmacist and Pharmacologist in prescription audit can provide valuable information about the overall documentation procedure in hospital which helps to find out the reason for incomplete prescription files of admitted patients and quality level of documentation of Out Patient as well as in patient departments were improved.

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

METHODS

Study setting

The study was carried out at Out-patient Department of Sterling multispecialty Hospital during the period of December 2012 to February 2013. An Observational study in which patients receiving medication during treatment were included and studied.

Inclusion Criteria:

Prescription sheets of Patients who attained the Out-patient Department. Male & female patients were included in the Study

Exclusion Criteria:

- Patients who refused to take medication.

- Patients who were not willing to participate in the study.

Source of data

From the Out-patient department the prescription file Data collection, Data scrutiny and statistical analysis, Reporting procedures- report to the pharmacy and quality department. No patient interaction was considered, the only patients file was referred after taking prior permission from hospital authority.

Statistical Analysis

Statistical Process Control (SPC) method was useful for evaluation of Medical Audit. In the SPC analysis, if the lower control limit has a negative value, they are posted as equal to zero. If some points lie above the Upper Control Limit, it implies that the process is producing poorer quality result & must be remedied. If the points lie below the Lower Control Limit the implication is that the process is producing better quality of results & action should be taken to see that what has caused this improvement & whether it can be incorporated permanently in the process.

SPC has four main applications, which are as below.[8]

1. To achieve process stability

2. To provide the guidance on how the process may be improved by reducing variation

3. To assess the performance of a process

4. To provide information to assist management decision.
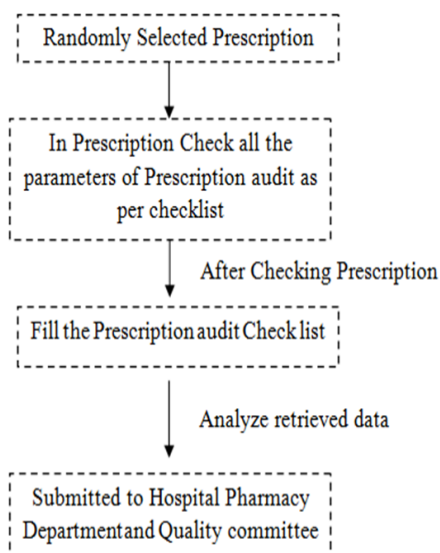
Figure 1: Data collection method for prescription audit.

Table 1: Prescription audit checklist.

Prescription audit checklist	
Prescription Audit	
Audit Parameters	**Yes/ No/NA**
Name of patient	
Age	
OPD number	
Dose of drug	
Dosage of drug	
Route of drug	
Frequency / Time of administration	
Date	
Legible	
Known allergy documented	
Uniform location of treatment order	
Non-standard abbreviation used	
Presence of therapeutic duplication, If Any	
Drug interaction, If Any	
Food drug interaction, If Any	
	Signature of Doctor

Yes=compliance; No=non-compliance; NA=not applicable

RESULTS

There are total 13 parameters was accessed for the prescription Audit. From the table we can predict that in total 150 sample case of prescription audit, only 3 % (74 count) cases had the non –compliance, 58% (1126 count) cases have the set process & 38 % (750 count) cases these parameter have not applicable.

Table 2: Compliance & non- compliance data during the prescription audit.

Parameters of Prescription Audit	Yes	No	NA
Dose of Drug	144	6	0
Dosage of Drug	144	6	0
Route of Drug	144	6	0
Frequency	139	11	0
Date	133	17	0
Legible	144	6	0
Know Allergy Documented	0	0	150
Uniform Location of Treatment Order	143	7	0
Non Standard Abbreviation Used	0	0	150
Presence of Therapeutic Duplication, if any	0	0	150
Drug Interaction if Any	0	0	150
Food Drug Interaction if any	0	0	150
Signature of Doctor	135	15	0
Total Counts	**1126**	**74**	**750**
% of Total Counts	**58**	**3**	**38**

The demographic reports of our study showed age-wise distribution (Tables 3), 4.1% of patients were found below 20 years of age, 16.2% of patients were found between 21 to 40 years of age group, 43.2% of patients were found between 41 to 60 years of age group, and 36.5 % of patients were found above 61 years of age group.

Table 3: Age – wise distribution of prescription audit.

No of patients	< 20 years	20-40 year	40-60 year	> 60 year
150 (Total number of patients)	11	42	52	45
68 (Patients with Non-compliance)	3	12	32	27
% of total Non-compliance	4.1	16.2	43.2	36.5

During the study of 150 cases there are mainly 13 parameters were checked according to the checklist

provided by the Hospital. So there were total 1950 Counts (150x13).

Out of 1950 Counts, 1126 Counts were compliance, 74 Counts were non-compliance & 750 Counts were not applicable.
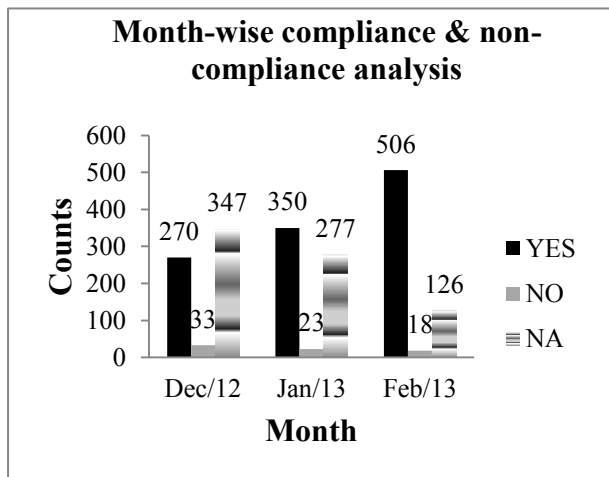

Figure 2: Month wise compliance and non-compliance of prescription audit.

Figure 2 showed that during the Month wise study of the 50 (650 counts) cases for the 3 months, in the December 2012 there were 270 Counts of Compliance & 33 Counts of Noncompliance, in the month of January 2013 there were 350 Counts of Compliance & 23 Counts of Non-compliance & in the Month of the February 2013 506 Counts of compliance & 18 Counts of Non-compliance.

In SPC analysis conducted for the Prescription Audit for the OPD Ward, the mean (Total no of defects in during audit / Total no of Parameter) is 2.5385, UCL (Mean + 3xSqr of Mean) is 7.3183 & LCL (Mean - 3xSqr of Mean) is -2.2413, so that only date has 8 counts during the study (Figure 3) which was above the UCL of 7.3183.

Again the SPC study conducted in the month of January 2013 showed mean range 1.7692, UCL was 5.7595 & LCL was -2.2211, so that only date has 7 counts during the study which is above the UCL of 5.7595 (Figure 4).

In last month SPC analysis the mean was found 1.3846, UCL was 4.9146 & LCL was -2.1454, so that only date has 4 counts during the study which was under the UCL of 4.9146.

In all instances from the month of December 2012 to February 2013 error had to be solved at the first & specialized training of the staff was necessary to reduce the same.
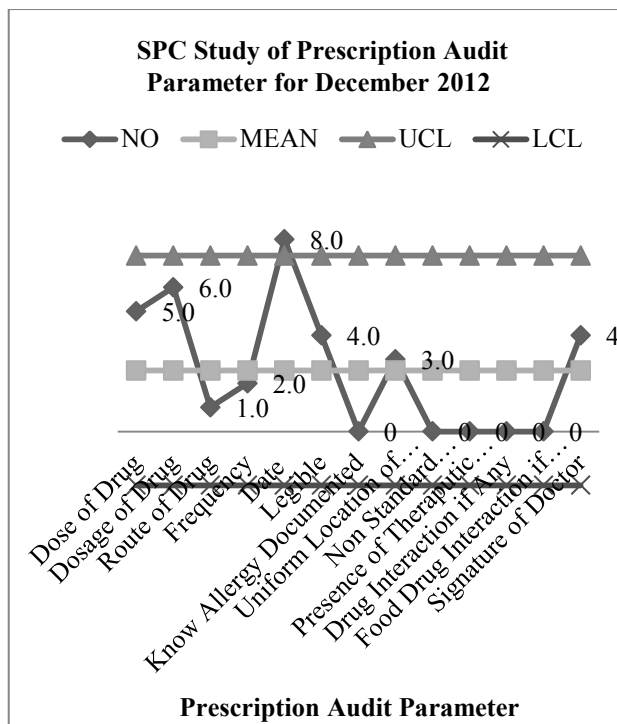

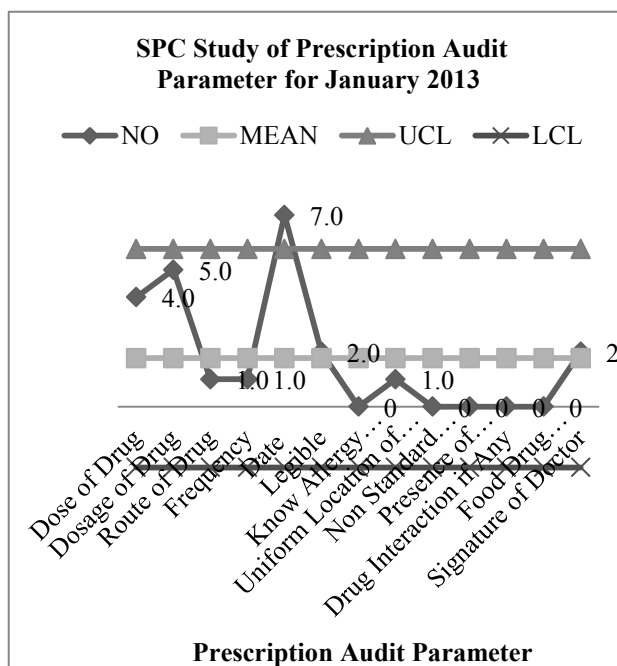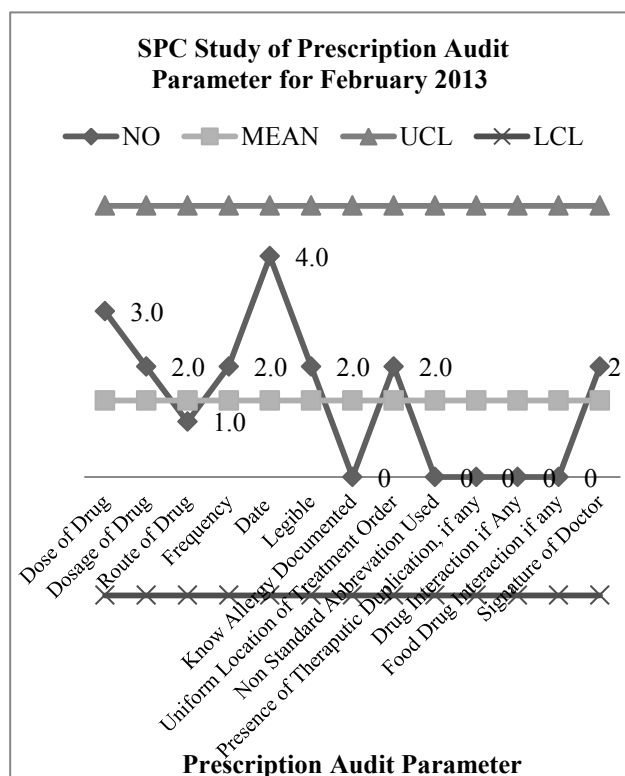**Figure 3: SPC study of prescription audit parameter for December 2012.**

Figure 4: SPC study of prescription audit parameter for January 2013.

SPC Study of Prescription Audit Parameter for February 2013

Figure 5: SPC study of prescription audit parameter for February 2013.

DISCUSSION

The result suggested that methodology selected for data collection was appropriate supported by literature.[9] In healthcare implementation of guidelines has generally been reported as fragmented and inconsistent 10 and still remains a significant challenge for various healthcare organizations.[11-13] Various factors including the lack of training of the care providers in quality management[14], lack of awareness of the details of the guidelines, and the lack of acceptance of the given recommendations by those involved in the process of care. The initial problems of learning to use statistical techniques at the work place may also be an obstacle, although experience tells us that this may not be such a daunting task.[15] By mean of Statistical Process Control is a decision making tool which allows you to see when a process is working correctly and when it is not. Variation is present in any process, deciding when the variation is natural and when it needs correction is the key to quality control.[15] As per our study compliance rate of prescription audit parameters was 58 %, which has to be improved by use of SPC analytical tool, while non-compliance rate low which was appreciable. In our study Month wise of the compliance of prescription audit rate was improved as time progresses, while non-compliance rate was reduced due to use of SPC, adapted for the data collection of prescription audit by practice. Another reliable tool can be used as prescription quality Index for measuring and or auditing quality of prescribing in the different diseases conditions and can be useful for assessment and comparison of quality of prescribing in different clinical settings.[17] Medication error can also be linked to prescription audit evaluation system. Root causes analysis of this system can be considered as integral part or tool of Prescription audit.[18]

CONCLUSION

Month wise study showed that numbers of the non-compliance in prescription audit was reduced from 33 (in the month of December 2012) to 18 (in the month of February 2013). This is mainly due to the hospital management has implemented the suggestion provide by clinical Pharmacist (project trainee) to improve their processes by mean of SPC analysis.

The management of the hospital or Quality committee had focused on results of this prescription audit. In nut shell we can conclude that the process set by the NABH is the robust one and involvement of Clinical Pharmacist & Pharmacologist for in the Prescription audit process is possible which helps the Hospital management during accreditation.

ACKNOWLEDGEMENTS

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