ORIGINAL RESEARCH PAPER

Medical Science

DOCUMENT IT RIGHT & WRITE A RIGHT DOCUMENT !!! AN ANALYSIS OF THE PRESCRIPTION WRITING PRACTICES OF THE DOCTORS AT A TERTIARY CARE HOSPITAL IN INDIA

KEY WORDS: Prescription writing practices, legibility, prescriber role, OPD prescriptions

Capt (Dr) Shiva Devarakonda MBBS, MD(HA), FHTA, Hospital Administrator, Armed Forces Medical Services, Kolkata

Col (Dr) Surekha Kashyap* MBBS, MD(HA), Professor, Dept of Hospital Administration, Armed Forces Medical College, Pune *Corresponding Author

ABSTRACT

Prescribing physicians as well as those involved in the execution of the prescription hold legal responsibility for the prescription. Although the prescription format may vary slightly from one country to another, most countries agree on the core elements that should be included in the prescription order. A prescription audit was performed to analyze the completeness of prescription information by using a standardized proforma. Out of 1200 prescriptions audited, 16.3% lack lacking prescriber name or signature, while one-fifth of prescriptions lack dose units and 94% lacking the quantity that the pharmacist should dispense. The overall prescription writing practices at the study was not satisfactory. It can be improved further by the universal best prescribing patterns.

INTRODUCTION

A drug prescription is often the endpoint of a patient's visit to a medical practitioner. As an instruction from a prescriber to a dispenser, it is considered to be a medico legal document that should be written legibly, accurately and completely [1].

Prescribing physicians as well as those involved in the execution of the prescription hold legal responsibility for the prescription. Although the prescription format may vary slightly from one country to another, most countries agree on the core elements that should be included in the prescription order.

These are: prescriber's name, address, telephone number and signature; patient's name, address, age and weight(important at the extremes of age); prescription date; drug name (preferably generic),formulation, strength, dose, frequency of administration, quantity prescribed, reason for prescribing and instructions for use [3].

A prescription should consist of the following seven parts:

1. Date, Identification of the prescriber
2. Name of the patient and information as to age.
3. Superscription or heading.
4. Inscription or main body of the prescription.
5. Subscription or directions to the compounder.
6. Signature or directions for the patient.
7. Prescriber's signature, seal of the prescriber

The cost of drug prescription poses problems in developing countries such as India, which allocates only 0.9% of its Gross Domestic Product (GDP), i.e. Rs. 200 per capita, to health. The allocation for meeting the cost of the drugs is even meager.

Such information is needed to set up continuous medical education programs to encourage rational prescribing among physicians. It also helps in setting up monitoring systems to ensure good pre-scribing habits and to maintain them. Hence an audit of current drug prescription writing for completeness of prescription information study was conducted with a view to improve the prescribing system in a tertiary care hospital.

METHODOLOGY

1. The retrospective study was carried out over one-month period in a 1000 bedded tertiary care hospital. Patient and drug data was recorded from out-patient prescription using Systematic Random Sampling.
2. The data was collected in customized performa in the form (**Annexure 1**) of an audit questionnaire.
3. Analysis of the prescriptions for completeness of information like the presence of OPD number, name, age and sex of patient, diagnosis, name, dose and duration of prescribed drugs was conducted.
4. Observation at the level of Dispensary and assessment of the level of Understanding by the Patients by interview was conducted.

RESULTS & DISCUSSION

The study was performed to identify the degree to which physicians conform to guidelines for prescription writing during their clinical practice. A total of 1200 outpatient prescription from a tertiary care hospital were screened for the essential elements of prescriptions according to published guidelines.

Our observations showed that prescriptions were deficient in information of the prescriber as none of the prescriptions contained the telephone number of the prescriber. These elements should be included according to WHO [5]. However, the hospital does not require that the telephone number and address of the prescriber be included in the prescription. Also, in this case, the address might not be relevant because physicians are required to stamp the prescription. The stamp usually contains the name, title and address of physicians.

Our study also showed that 16.3 % of prescriptions were deficient in the prescriber name and the prescriber signature **(Figure 1).** Balbaid and Al- Dawood [6] reported that prescriptions from some Ministry of Health hospitals in Jeddah city were deficient in physician's name and signature in 14% and 16.3% of cases, respectively. Meyer [7] from a hospital and clinic in Texas mentioned that a survey of outside provider pharmacies requesting information on problems related to prescriptions indicated that 96% of responders believed that failure to print the prescriber name was one of the main problems.

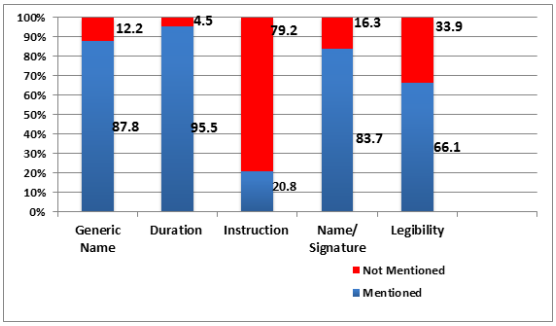

Figure 1. Parameters absent from the prescription audited

Francois et al. [8] from a university hospital in France and Blatt et al. from a central hospital in Yaounde, Cameroon, [9] have shown that 20%–30% of prescriptions which did not include the name and the function of the prescriber. Anderson and Beurling [10] from Copenhagen University Hospital reported that among the

most frequent errors of omission in prescriptions was inadequate identification of the physician. These deficiencies indicate how things are made difficult for the dispensing pharmacist to contact the prescriber in case of any clarification.

Concerning patient information, our finding that prescriptions were deficient in patient's name and age in 31.1% and 28.1% of prescriptions, respectively, are in contrast with the results of Balbaid and Al-Dawood [7]. However, Bawazir [11], in a large study from 22 major hospitals from all health regions within Saudi Arabia, reported that patient age was missing in 18.6% of prescriptions, while patient name and sex were missing in 0.2% of prescriptions.

The name of the patient was present on 68.9% of prescriptions, whereas the patient's age only 71.1% and sex of the patient was not mentioned in any prescription **(Figure 1).** Of prescriptions that included the patient's age, 13.4%for those aged 1–5 years and 57.7 % for those aged > 60 years of age and remaining between 5- 60 years of age.

The dose units were not mentioned in almost one-fifth (11.4%) of prescriptions. Most of the prescriptions (94.0%) did not contain the quantity that the pharmacist should dispense. The directions for patient use were complete in only 68.5 % of prescriptions, while in 20 % of cases prescriptions contained partial instructions either among the drugs prescribed or for certain drugs. The diagnosis within the prescription was filled clearly in 70.1% and unfilled in 29.9 % of prescriptions **(Figure 1).**

Makonnen et al. [12] write about the quality of prescriptions at a tertiary care pharmacy in Addis Ababa, Ethiopia, where 50% of prescriptions did not contain the sex and age of the patient. The address of the patient is among the elements that should be included in the prescription according to WHO [5], while inclusion of weight is recommended for patients at the extremes of age because of the implication it has on drug pharmacokinetics and pharmacodynamics. Omission of patient's address from prescriptions is a serious deficiency when problems in the prescription are discovered and the patient needs to be contacted to correct the problem. This is even more serious when the name of the patient is also omitted.

Our findings, that 90.1%, 5.0% and 4.9% of prescriptions contained generic names, brand names and both generic and brand names, respectively, is peculiar in the sense that some physicians prescribed drugs within the same prescription utilizing both generic and brand names. However our study found that using generic names in prescriptions gives flexibility to the dispensing pharmacist and may be of economic benefit to the patient.

We found that 0.4% of prescriptions did not include the strength of medication, the dose units were not included in 0.1 % and the quantity of medications was not included in 0.3 % of prescriptions **(Figure 1).** Apparently, these parameters are left to the pharmacist to decide upon and the implications for the duration of therapy will be dependent on the individual pharmacist.

The study also showed the prescription was illegible or unreadable in one-third (0.9 %) of prescriptions and 7.1% legible with effort **(Figure 2).** Anderson and Beurling [10] reported that omitting the indication for use was among the most frequent errors in prescriptions.

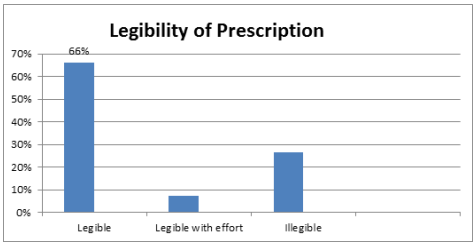

Fig 2. Percentage of Legibility of Prescription

Our finding, that almost (33.9%) of prescriptions suffered poor handwriting, is in contrast with what was found by Balbaid and Al-Dawood [6] who reported illegible handwriting in only 7.2% of prescriptions. The high percentage of poor handwriting we found could be due to the fact we considered the presence even of a single unclear word or a dose unit as poor handwriting for the whole prescription.

Poor handwriting is a serious problem that might lead to dispensing the wrong medication to the patient with serious or even fatal results [13]. Meyer [6] found that 15% of prescriptions studied had illegible handwriting. Furthermore, in a survey of outside provider pharmacies, 69% of responders stated that illegible handwriting was one of the main problems they encountered. Makonnen et al. [12] also reported illegible prescriptions in 15% of cases.

Our study showed that most of the patient in the OPD had only undergone primary education as the level of understanding ranged from 50- 70 % regarding route of administration, side effect, dosage and follow up of the OPD dates **(Figure 3).**

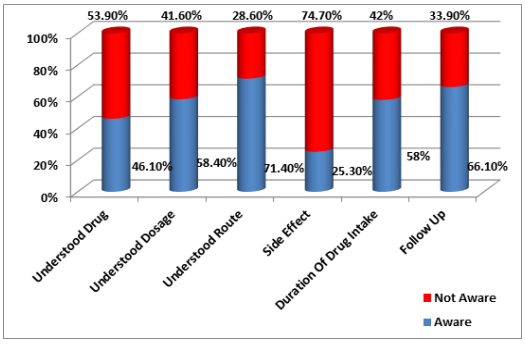

Fig 3. Percentage of Understanding by the patient

Similar results are being observed in WHO studies [19] which show the prescription writing practices of the doctors from developing nations of the Asian continent. The study in comparison also shows the similar demographic and education standards of the research study nation. The major problem faced in these nations are the workload and pressure to prescribe the FDC rather than a dilutional component.

RECOMMENDATION

18Use of technologies such as computerized physician order entry (CPOE), bar coding, or automated dispensing devices to minimize medication errors should encouraged in an organization for the minimization of the medication error. These include limited field size, resulting in the truncation of names or "auto-fill" data entry fields. The possibility of including suffix definitions in CPOE systems and the incorporation of name alert warnings in CPOE systems should be explored.

CONCLUSION

In conclusion, the prescriptions we reviewed suffered serious deficiencies and were not properly written. The use of capital letters while prescribing drugs by the treating physician can also be implemented for legibility of the prescriptions. The need for physician education on appropriate prescription writing is obvious and follow-up on the matter is needed for newly qualified physicians. Furthermore, inclusion of tutorials about prescription writing in the final clinical year curriculum of medical students before graduation is necessary. Administrative monitoring of the prescription habits of physicians is needed both to improve the process and to maintain the improvement.

With the advent of Consumer Protection Law and various other legal and ethical perspectives in the practice of medicine, documentation has become a major defending factor for the practicing physicians. In such a case, the prescription you write can be a well-documented medical advice to defend oneself in the future litigations or from the medical negligence. ***DOCUMENT IT RIGHT AND WRITE A RIGHT DOCUMENT.***

CONFLICTS OF INTERESTS: NONE
SOURCE OF FUNDING: NIL

APPENDIX 'A'

S no.	Name	Sex	Age	Date	Diagnosis	Brand Name	Duration of prescription	Dose frequency	Doctor signature and stamp	Legibility	Type of drug
1.											
2.											
3.											
4.											
5.											

REFERENCES:

1. Belknap SM, Moore H, Lanzotti SA, Yarnold PR, Getz M, Deitrick DL, Peterson A, Akeson J, Maurer T, Soltysik RC, Storm GA, Brooks I (September 2008). "Application of software design principles and debugging methods to an analgesia prescription reduces risk of severe injury from medical use of opioids". Clinical Pharmacology & Therapeutics 84 (3): 385–92.
2. Goozner, Merril. The $800 Million Pill: The Truth behind the Cost of New Drugs, 2007:51–5
3. Budhiraja RD. Manual of Practical Pharmacy. 2nd ed. Bombay Popular Prakashan, 1993
4. ICH Harmonised Tripartite Guideline for GCP, Institute of Clinical Research, 1996.
5. De Vries TP et al., eds. Guide to good prescribing: a practical manual. Geneva,World Health Organization, 1995:51–5 (WHO/DAP/94.11).
6. Balbaid OM, Al-Dawood KM. Assessment of physician's prescribing practices at Ministry of Health Hospitals in Jeddah City, Saudi Arabia. Saudi medical journal, 1998, 19:28–35.
7. Meyer TA. Improving the quality of the order-writing process for inpatient orders and outpatient prescriptions. American journal of health-system pharmacy, 2000,57(Suppl. 4):S18–2.
8. Francois P et al. Evaluation of prescription- writing quality in a French universityhospital. Clinical performance and quality health care, 1997, 5:111–5.
9. Blatt A, Chambon R, Lemardeley P. Formelegale et cout des prescriptions al'Hopital Central de Yaounde, Cameroun. [Legal format and costs of prescriptions atthe Central Hospital in Yaounde, Cameroon.] Medecinetropicale: revue du Corpsde sante colonial, 1997, 57:37–40.
10. Andersen SO, Beurling C. Recepter, receptfejlogpatientsikkerhed. [Prescriptions, prescription-writing errors and patient safety.] Ugeskrift for laeger, 1997,159: 1454–8.
11. Bawazir S. Prescribing pattern of ambulatory care physicians in Saudi Arabia.Annals of Saudi medicine, 1993, 13(2): 172–7.
12. Makonnen E, Yoseph M, Berhane Y. Quality of prescription at a tertiary carepharmacy in Addis Ababa. Ethiopian medical journal, 2002, 40:233–9.
13. Charatan F. Family compensated for death after illegible prescription. Britishmedical journal, 1999, 319:1456.
14. Takwonda, M., et al. June 2010. Lesotho Health Systems Assessment 2010. Bethesda, MD: Health Systems 20/20, Abt Assoc. Inc.
15. UN. 2009. United Nations Development Assistance Framework 2008-2012. Lesotho. http://www.undp.org.ls/home/UNDAF_Action_Plan_15.pdf.
16. University of Washington, School of Public Health and Community Medicine. 2000. Antibiotic Resistance. http://depts.washington.edu/eminf/2000/resistance/resist2.html
17. Weinstein, R. 2001. Controlling Antimicrobial Resistance in Hospitals: Infection Control and Use of Antibiotics. Emerging Infectious Diseases 7(2):188-192.
18. WHO. 2001. Global Strategy for the Containment of Antimicrobial Resistance. http://whqlibdoc.who.int/hq/2001/WHO_CDS_CSR_DRS_2001.2.pdf
19. WHO. 1993. How to Investigate Drug Use in Health Facilities: Selected Drug Use Indicators. http://apps.who.int/medicinedocs/en/d/Js2289e/
20. WHO. 2004. The World Medicines Situation Report. http://apps.who.int/medicinedocs/pdf/s6160e/s6160e.pdf