

ORIGINAL ARTICLE

Prescription Audit: Observation and Outcome on Ideal PerspectivesAFM Mohibur Rahman¹, Morshed Nasir², Milly Chowdhury³, Md. Khorshed Alam⁴**Abstract :**

Nowadays, rational use of drug is given utmost important in the treatment of diseases all over the world. It is considered that writing an ideal or correct prescription is also very vital and important part of rational prescribing of drug. A prescription is the mirror of treatment and treatment plan for short and long term use. An ideal prescription has got different essential parts in addition to drug treatment where patients' complete cure depends in many ways. This was a randomized cross sectional observational study carried out from July 2013 to December 2013. A prescription may be incomplete due to absence of patient's age, name, sex, doctor's initial, registration number and date, and also with many prescribing errors due to poor hand writing, drug name confusion, poor history taking, calculation errors, inadequate drug knowledge, inadequate knowledge about clinical status of patients, unnecessary investigations, improper diagnosis and absence of complete information about patient and doctor. It is known that patients can be harmed as a result of some prescribing errors. In this study, the number of prescriptions audited were 280. It was observed that incomplete direction for use of drug (60%) and missing prescribers' registration number (86%) are the highest among the errors audited this time.

Introduction:

A medical prescription means a written directive for the preparations and administration of a drug or medicine for the service to a particular patient and that must be written by an authorized person, i.e. by registered physicians or in some countries advanced practice nurse to an authorized agent, i.e. nurse or pharmacist. Writing an ideal prescription is very important and vital to maintain proper and precise

treatment for the present and future benefit of the patient. The word prescription, from "pre"-means "before" and "script" means "Writing" or "Written", refers to the fact that the prescription is an order that must be written down before a compound drug can be prepared. Modern legal definitions of a prescription differs in its structure and directions compared with the older and traditional ones. Modern prescriptions are written in pre-printed prescription forms that have several rooms or blocks for various information regarding patients complaints, clinical status, investigation, probable diagnosis, proper direction for drug use, patients details: age, sex, address and contact number, and doctors address including his registration number and contact number. A sample of an ideal prescription is shown in figure-1.

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Figure-1 : Components of an ideal prescription

Doctor's name and address:	Patient's name and address:		
Registration Number :	Age :	Sex :	Weight :
Contact number:	Date :		
Chief complaint :	Rx		
On examination findings :	Name of the drugs with proper directions :		
Investigations :			
Diagnosis	Advice :	Doctor's signature	

The rational use of drugs begins with a correct prescription. Although according to the consulted literature where more than 50% of all treatments present error⁹⁻¹⁰.

It is estimated that three billion prescriptions were written in the United States in 2002. This number grew from 1.5 billion in 1989 and is expected to continue to grow². Handwritten prescriptions are more common source of medication error. In the US, medical practitioners' sloppy handwriting kills more than 7,000 people annually, according to a July 2006 report from the National Academies of Science's Institute of Medicine (IOM)¹¹. Historically, physicians used Latin words and abbreviations to convey the entire prescription to the pharmacist. Today, many of the abbreviations are still widely used and must be understood to interpret prescriptions. At other times, even though some of the individual letters are illegible, the position of the legible letters and length of the word is sufficient to distinguish the medication based on the knowledge of the pharmacist. When in doubt, pharmacists call the medical practitioner. Some jurisdictions have legislated legible prescriptions (e.g. Florida). Some have advocated the elimination of handwritten prescriptions altogether¹² and computer printed prescriptions are becoming increasingly common in some places.

As a prescription is nothing more than information among a prescriber, pharmacist, nurse and patient, information technology can be applied to it. Many prescribers lack the digitized information systems that reduce prescribing errors¹³. To reduce these errors, some investigators have developed modified prescription forms that prompt the prescriber to provide all the desired elements of a good prescription. The modified forms also contain pre-defined choices such as common quantities, units and frequencies that the prescriber may circle rather than write out. Such forms are thought to reduce errors, especially omission and handwriting errors and are actively under evaluation. Abbreviation of the word units to IU resulted in the administration of 10 fold over doses of insulin when prescription for 6 IU were misread as 61 units. A prescription Amoxil (Amoxicillin) was misread as Daonil (oral hypoglycemic agent) and the patient suffered brain damage. A prescription of Isordil (Isosorbide mononitrate) was misread as Plendil (Felodipine). The doctors and the pharmacists were held liable¹¹.

The patients name and address are needed on the order to assure that the correct medication goes to the correct patient and also for identification and record keeping purposes. For medications

The patients name and address are needed on the order to assure that the correct medication goes to the correct patient and also for identification and record keeping purposes. For medications whose dosage involves a calculations a patient's pertinent factors such as weight, age or body surface area also should be listed on the prescription¹⁴. To avoid misinterpretation and ambiguity prescribers have developed many conventions time to time. For example, directions for use of drug are now being written in full English instead of Latin.

Prescriptions are sometimes forged because many narcotics or controlled drugs are cheaper and safer as prescription drugs than as street drugs. Forgery takes many forms: Prescription pads are sometimes stolen, amounts may be altered on legitimate prescriptions, call back numbers may be falsified and phoned or faxed prescriptions faked¹⁵. A prescription must have a date of issue and validity for up to certain period, and should be properly signed. In all most all countries the authorized physicians have a registration number and that number must be printed on the prescription in order to prevent forgery. When forgery is suspected, nurses or pharmacists will call the medical practitioners to verify the prescription. Many countries have strict law against this type of offences and considered it as a punishable crime¹⁶.

A prescription is an ideal and important reference or record for future treatment and treatment plan, therefore, an incomplete prescription not only makes problem at present but also create problems in future. Ample attention have been given and research is done on the prescription error i.e. medication error whereas scanty information is available regarding missing other parts of ideal prescription and its impact on the treatment.

Irrational prescribing and prescription error are now a great concern in medical practice. Errors in the management of drug therapy result in a large number of preventable injuries suffered by patients¹⁰. The direct costs of medication-related morbidity and mortality in the USA have been estimated to be \$76.6 billion annually, far exceeding the estimates of costs of obesity or diabetes related morbidity and mortality.¹¹ The purpose of the present study is to find out the missing parts of different prescriptions and its impact on the treatment and also detect most common prescription/medication errors done by the general practitioners/prescribers in Dhaka city.

Materials and method :

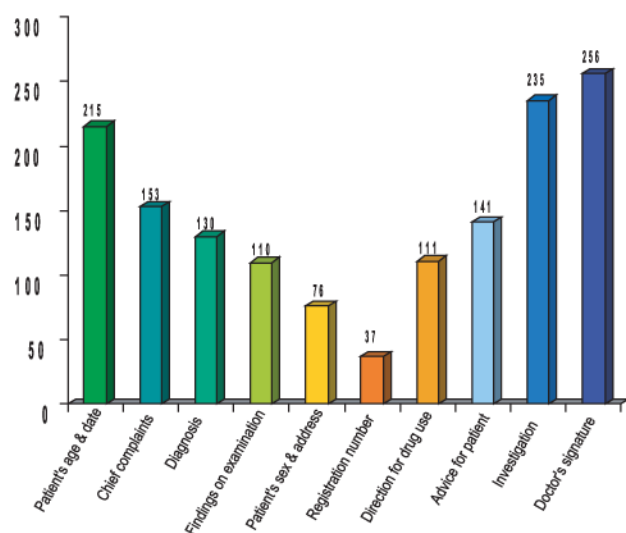
A random sample of 280 medical prescription were collected from the patients treated by the graduate general practitioners, some of them having post graduation and practicing in the different parts of Bangladesh. Missing different parts of an ideal prescription, such as doctors and patients details, investigations, chief complaints, diagnosis, direction for proper use, on examination findings, doctor's registration numbers, poor hand writing and prescribers initial were counted and expressed as percentage.

Results :

Most of the audited prescriptions contained doctor's signature (91.42%), Investigations (83.93%) and patient's age & date (76.78%). Surprisingly patient's sex & address were mentioned only in 27% of audited prescriptions. Doctor's registration number was the rarest finding in only 13.21% prescriptions.

Table-I : Frequency of the audited points in sample prescriptions (n=280)

Points audited in prescription	Mentioned in number of prescriptions	Percentage
Patient's age & date	215	76.78%
Patient's sex & address	76	27.00%
Chief complaints	153	54.64%
Findings on examination	110	39.28%
Investigations	235	83.93%
Diagnosis	130	46.42%
Direction for drug use	111	39.64%
Advice for patient	141	50.36%
Registration number	37	13.21%
Doctor's Signature	256	91.42%



Discussion :

In this study, ten important parts of prescription are observed missing at various percentages among which doctors registration number, patients sex and address, direction for proper use and poor hand writing are the matters of concern. These are very important parts of an ideal prescription. Incomplete or missing parts of a prescription can lead to serious consequences or even lethal effect on the patient. In this study, 60% prescriptions were missing proper direction of use of drugs and more than 50% prescriptions were missing

diagnosis. One of the most alarming missing parts is prescriber's registration number which was more than 80% and there were no initial or prescriber's signature in some prescriptions. Another concern is poor hand writing that may lead to misinterpretation of drug names. As a result patient will be harmed and suffering will continue.

Errors in prescription are common in hospital and in general practice. Prescription errors also include irrational, unnecessary, ineffective and sometimes inappropriate drugs. Errors in medication due to erroneous medical decision can result to harm to the patients. All steps in prescription writing may produce errors. In particular, medication errors in dose selection, time, drug interaction and poor hand writing are common which are very much in consistent with this study. Lack of complete information about the drug and previous treatment of individual patients can result in prescribing faults including the use of potentially inappropriate medications.

Absence of findings on examination and diagnosis can also cause potential harm or treatment failure when a patient transfer hospital or change general practitioner. Transfer of

patients care within the same institution or between a hospital can lead to prescribing faults due to omission¹⁷.

Inaccurate medication history taking can cause omission of treatment, resulting in potential harm in more than one third of patients taking more than four drugs¹⁸. One third of patients taking more than four drugs are subject to victim of drug interaction or treatment failure due to lack of proper direction for use. Prescription errors are typically events that derive from slips, lapses or mistakes, e.g. writing a dose that is orders of magnitude higher or lower than the correct one because of erroneous calculation or due to similar account of drug brand name or pharmaceutical names. Human factors may therefore be the first identifiable cause of error.

Collection of information through error reporting system is a prerequisite for preventing prescription error. Error reporting systems, both internal and external to healthcare institutes, have been widely used. Reporting is usually voluntary and confidential, but must be timely and evaluated by experts in order to identify critical conditions and allow system analysis. Prescribers should be informed and become aware of errors that have been made in their environment and of the conclusion of the analysis.

Active intervention aimed at reducing prescription error is strongly recommended. The complexity of the prescribing procedure should be reduced by introducing automated and uniform prescribing charts, in order to avoid transcription and omission errors¹⁹.

There are many ways of attempting to influence the behavior of general practitioner. Feedback of

information if not solicited, does very little to alter the behavior of general practitioners or even hospital doctors. Spontaneous reporting is about 10 times less among the general practitioners than it was requested or imposed upon them²⁵. Feedback which is requested may meet with more success. The prevention of prescription errors is clearly an area where closer cooperation between doctors, nurses and pharmacists would be of greater benefit. To ensure the rational use of drug that begins with writing an ideal prescription regarding its format and principals of rational use must be ensured first.

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