

Compliance with Good Practice in Prescription Writing at Private Clinics In Basra City; Southern of Iraq.

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Abstract

- Background** Prescription order and information on it; represent the key for reach of safe and effective medications to the patient, and the clarity of its information is important to prevent medications errors that may be lethal to the patient.
- Objectives** Comparison of samples of prescriptions and their contents of physician; patient related information with standard information provided by WHO prescription writing.
- Methods** A sample of prescription orders received from private clinics by community pharmacies in Al Ashar of Basra city. The prescriptions were taken from several pharmacies randomly and about 1000 prescriptions were collected. The prescriptions represent about 40 physicians in different specialties and for a period extended from November 2009 until March 2010. The information of prescriptions were analyzed by simple statistics for calculation the percentage of adherence for WHO guideline in prescription writing.
- Results** The prescription information includes; prescriber's name, address, telephone number and signature were on 97.5%, 74.8%, 4.3% and 96.5% of prescriptions respectively. The patient's name, age and weight were on 96.6%, 15.5% and 2.2%. No prescription contained the patient's address and gender. The strength of medication and dose units were included in 1.7% and 1.4% of prescriptions. The prescriptions had only quantity indicated 2.4% and more than one third instructions for patient use (36.1%); the diagnosis was not included in more than two-thirds (85.2%). The prescriber's handwriting was illegible in 16.3% of prescriptions.
- Conclusions** There is severe deficiency in fitness of prescriptions written by the physician to WHO guidelines; so we recommend for administrative monitoring program for fitness of prescriptions to these guidelines and start education about this guideline for prescribers.
- Key words** Prescriptions, WHO, prescriber, patient, prescriber's name, address, telephone number, signature

Introduction

A medical prescription (R_x) is an instruction from a prescriber to a dispenser⁽¹⁾ or is a written order by a physician to a pharmacist for a treatment to be provided to the intended patient⁽²⁾. Commonly, the term prescription is used to mean an order to take certain medications. Prescriptions have legal implications, as they may indicate that the prescriber takes responsibility for the clinical care of the

patient and in particular for monitoring efficacy and safety⁽³⁾.

Prescriptions are handwritten on preprinted prescription forms that are assembled into pads, or alternatively printed onto similar forms using a printer; Preprinted on the form as text that identifies the document as a prescription⁽³⁾.

A prescription is a legal regulated document used as a communication mechanism between pharmacists and physicians⁽³⁾.

Regulations may define what constitutes a prescription, the contents and format of the prescription (including the size of the piece of paper) and how prescriptions are handled and stored by the pharmacist ⁽³⁾. 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, formulation, strength, dose, frequency of administration, quantity prescribed, reason for prescribing and instructions for use ⁽⁴⁻⁷⁾.

The community pharmacists have an important role in checking prescription to ensure they are appropriate to dispense.

It is not known how often prescribing errors occur. However it is known that patients can be harmed as a result of some prescribing errors. Prescribing errors can occur as a result of:

- Inadequate knowledge of the patient and their clinical status
- Inadequate drug knowledge
- Calculation errors
- Illegible handwriting
- Drug name confusion ⁽⁸⁾.

As good quality prescriptions are extremely important for minimizing errors in the dispensing of medications, physicians should adhere to the guidelines for prescription writing for the benefit of the patient ⁽⁸⁾.

The aim of this study was to detect the most frequent prescription errors by physicians in private clinics in Al Ashar area of Basra city in Iraq.

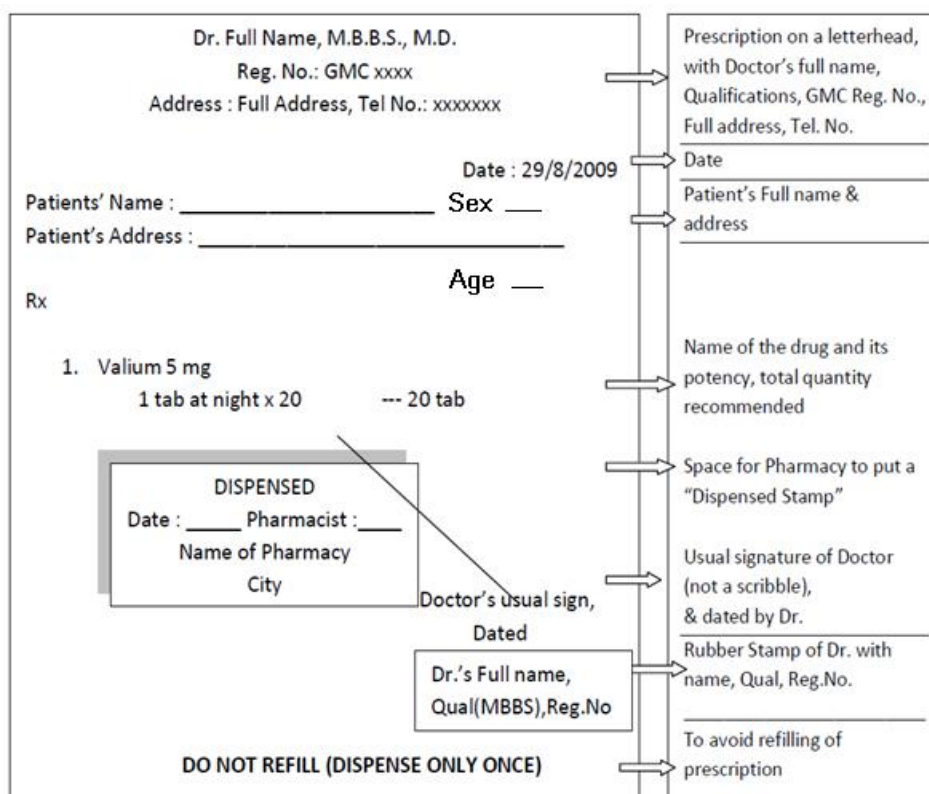


Figure 1: shows sample prescription from a private doctor, reprinted from WHO prescribing guidelines 2008

Methods

Private clinics prescriptions are collected from pharmacies located in the center of Basra city that is called Al ashar, the main referral private clinics in southern Iraq regions, that is visited by around 2 million patients per year.

The study was designed using simple randomization where; about 1000 prescriptions were collected from several different pharmacies in the area and. The prescriptions represent about 40 physicians in different specialties and for a period extended from November 2009 until March 2010.

The targets of the study are to evaluate all collected prescriptions to meet the standards of prescription writing; and identify the types and magnitudes of prescription writing errors. Prescriptions were analyzed for the essential elements to be included in the prescription order; where according to World Health Organization (WHO) recommendation; all prescriptions must include the following information ⁽¹⁾:

- The prescriber's name, address, registration number, and telephone number. This will allow either the patient or the dispenser to contact the prescriber for any clarification or potential problem with the prescription.
- Date of the prescription.
- Specific areas for filling in details about the patient including address, Patient Name and/or registration number (R/N), Date of Birth and/or Age, especially for children under 12 years and elderly over 75 years sex; weight;
- Name, form, Route of administration, and strength of the drug. The International Nonproprietary Name of the drug should always be used. If there is a specific reason to prescribe a special brand, the trade name can be added. Generic substitution is allowed in some countries. The pharmaceutical form (for example, "tablet", "oral solution", "eye

ointment") should also be stated. The strength of the drug should be stated in standard units using abbreviations that are consistent with the System International (SI). "Microgram" and "Nanogram" should not, however, be abbreviated. Also, units' should not be abbreviated. Avoid decimals whenever possible. If this is unavoidable, a zero should be written in front of the decimal point.

- Frequency of administration or dosing interval e.g. three times a day or every 6 hours.
- The quantity of the medicinal product to be supplied should be stated such that it is not confused with either the strength of the product or the dosage directions. Alternatively, the length of the treatment course may be stated (for example "for 5 days"). Wherever possible, the quantity should be adjusted to match the pack sizes available. For liquid preparations, the quantity should be stated in milliliters (abbreviated as "ml") or liters.
- Signature and initials of prescriber.
- When prescribing narcotics/controlled drugs, the strength, directions and the quantity of the controlled drug to be dispensed should be stated clearly, with all quantities written in words as well as in figures to prevent alteration. Other details such as patient particulars and date should also be filled in carefully to avoid alteration ⁽¹⁾ (Figure 1).

Compliance with these elements was the degree to which the physician had met the obligation of including all the elements of a prescription in the prescription order. It is worthy to mention that Physicians did not know about this study.

Simple descriptive statistics were generated by the Microsoft excel 2007.

اسم المريض: سنان صبا التاريخ: 2001/1/11
 العمر: 30

Rx
 Amikacin oral 7.5
 Suprax sup
 Vitase 100mg tab
 Santal dipr.
 - Polio-12 sup
 Emulol 20mg of

اسم المريض: سنان صبا التاريخ: 2001/1/11
 العمر: 30

Rx
 - Aldomet 1
 - Feldipen ATO
 - Hamat 90
 - Nutrit 100

Stugeron Motilium Vermox
 Daktaort Retin-A Cream Imodium
 Gyno-Daktarin Daktarin
 WASEN-CIAG

اسم المريض: سنان صبا التاريخ: 2001/1/11
 العمر: 30

Rx
 1. Vitamin
 2. Folic acid
 3. Cefepime H.
 4. Paracetamol
 5. Cephalosporin

اسم المريض: سنان صبا التاريخ: 2001/1/11
 العمر: 30

RX:
 - Perialkatin 1x2
 - Lamprazole 1x1 307
 - Metformin 1x2
 - Statins 1x3
 - Aspirin 1x2

اسم المريض: سنان صبا التاريخ: 2001/1/11
 العمر: 30

Rx
 - Valium 5mg
 - Valium 5mg
 - Keflex 250mg
 - Notal 100mg
 - Disruption 100mg

اسم المريض: سنان صبا التاريخ: 2001/1/11
 العمر: 30

Rx
 - Lipitor 20mg
 - Lasix 1x2
 - Zoxit 1x1
 - Betacort 1x1
 - Plavix 1x1
 - Brouchin 1x2

اسم المريض: سنان صبا التاريخ: 2001/1/11
 العمر: 30

Rx
 - Toniplos 1
 - Nolium 1
 - Rofen 1
 - Suprax 1
 - Dupa 250
 - Vit D3 2000

اسم المريض: سنان صبا التاريخ: 2001/1/11
 العمر: 30

Rx
 1. Daktarin
 2. Retin-A
 3. Imodium 200
 4. Dermolac 100
 5. Vitamin 1000
 6. Vitamin 1000
 7. Vitamin 1000

Results

The number of prescriptions sampled was 1000, the number of drugs prescribed ranged between 1 and 5 and around 50% of prescriptions included 3 drugs. Only 74.8% of prescriptions included the address of the prescriber. About 4.3% of the prescriptions included the telephone number of the prescriber; the name and signature of the prescriber were included in 97.5% and 96.5% of prescriptions, respectively (Table 1). The name of the patient was present on 96.6% of prescriptions, whereas the patient’s age and weight were present in only 15.5% and 2.2 % respectively (Table 1). None of the prescriptions included the address and sex of patient.

Table 1: Review of 1000 prescription issues at Al Ashar area in Basra city; analysis of prescriber and patient information present on prescriptions

Information		No.	%
Prescriber	Name	975	97.5%
	Address	748	74.8%
	Phone No.	43	4.3%
	Signature	965	96.5%
Patient	Name	966	96.6%
	Age	155	15.5%
	Address	0	0%
	Weight	22	2.2%
	Sex	0	0%

Date of the prescription was provided in only 55.1% of prescriptions. The handwriting of the prescriber was not clear in 16.3 % of prescriptions (Table 2). With regard to the strength of medication, it was included in 1.7% of the prescriptions and was included for some drugs within the prescription in 60.6%. In the rest of prescriptions (37.7%), the strength of medication was missing. The dose units were not mentioned in 39.2% of prescriptions and mentioned for some drugs within the prescription 59.4%. The units were

mentioned for all drugs in 1.4% of prescriptions. Most of the prescriptions (47.5%) did not contain the quantity that the pharmacist should dispense. The directions for patient use were complete in only 36.1% of prescriptions, 34.5% prescriptions contained partial instructions either among the drugs prescribed or for certain drugs. The space provided for the diagnosis within the prescription was filled clearly in 14.8%, filled unclearly in 8.5% and unfilled in 76.7% of prescriptions (Table 2).

Table 2: Review of 1000 prescriptions issued at Al Ashar area in Basra city: analysis of information present on prescriptions

Element		No.	%
Date of prescription	Provided	551	55.1%
	Not	449	44.9%
Strength of medications	Included for all drugs	17	1.7%
	Included for some drugs	606	60.6%
	Not included for all drugs	377	37.7%
Dose unit	Included for all drugs	14	1.4%
	Included for some drugs	594	59.4%
	Not included for all drugs	392	39.2%
Quantity of medications	Included for all drugs	24	2.4%
	Included for some drugs	501	50.1%
	Not included for all drugs	475	47.5%
Instruction for patient use	Included for all drugs	361	36.1%
	Included for some drugs	345	34.5%
	Not included for all drugs	294	29.4%
Diagnosis	Present	148	14.8%
	Not clear	85	8.5%
	Missing	767	76.7%
handwriting	Clear	837	83.7%
	Not clear	163	16.3%

Discussion

The study was performed to identify the degree to which physicians confirm to guidelines for prescription writing during their clinical practice. A total of 1000 prescriptions were taken from Al Ashar area in Basra city were screened for the essential elements of prescriptions according to published WHO guidelines⁽⁴⁻⁷⁾.

This is the first study reviewing prescriptions from private clinics in Basra city.

Our observations showed that prescriptions were deficient in the information as following:

In concern prescriber related information; about 4.3% of the prescriptions contained the telephone number of the prescriber and only 74.8% had the prescriber address. These elements should be included according to WHO prescription writing guidelines⁽⁴⁾. 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 patient's name, age and weight in were found in 96.6%, 15.5% and 2.2% of prescriptions respectively. Inclusion of weight is recommended for patients at the extremes of age⁽⁴⁻⁷⁾, because of its implication on drug pharmacokinetics and pharmacodynamics. These finding differ slightly from another study like in Saudi Arabia that found 94.6%, 77.6% and 0.0% for patient's name, age, and weight⁽⁹⁾ respectively.

None of the prescriptions we reviewed contained the address and sex of the patient; which is similar finding in Saudi Arabia study. The address of the patient is among the elements that should be included in the prescription according to WHO⁽⁴⁾. Omission of patient 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 finding that less than half (44.9%) of prescriptions were not dated.

We found that more than one third (37.7%) of prescriptions did not include the strength of medication, this ratio was less than that reported in Saudi Arabia⁽⁹⁾ the dose units were not included in 39.2% and the quantity of medications was not included in 47.5% of prescriptions. 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 strength of medication is particularly needed when the pharmaceutical product exists in more than ones strength. We did not look at the proportion of drugs which are available in only ones strength.

We also found that the prescriptions were included instructions for patient use in about 36.1% (2.3% in Saudi Arabia)⁽⁹⁾, and about 34.5% contained only partial instructions, (90.7% in Saudi Arabia)⁽⁹⁾ a finding that certainly will affect the adequacy of therapy. Which differ from finding in Saudi Arabia which were

Our finding that the diagnosis was missing or unreadable in more than two third (85.2%) of prescriptions; Also our finding that about (16.3%) of prescriptions suffered from poor handwriting, this 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⁽¹⁰⁾. Some reasons behinds prescription writing incompliance may include : Heavy load on physician specially the gynecologists, in addition to that; improper practice, by some physicians, like admission more than one patient in examination room, make physician hesitated in prescription writing , leading to poor hand writing, and / or errors or leads to missing of some information in

prescription. Also some patients may refuse to give true personal details to physician, which may be concern with social mores. Gender of patient may not be mentioned in the prescription, probably, it is easily to distinguish the gender from the name of patient, this may made physicians do not give attention to write gender in the prescription. There were some serious problems in some prescriptions so they are truly a mystery and not contain any clear information , and even can't be read by physician him self when a pharmacist inform from physician about the content of prescription. And finally; unfortunately some doctors are ignorant of the standards required in a good prescription writing and may need to be educated about these standards.

In conclusion, the prescriptions we reviewed suffered from serious deficiencies and were not properly written. 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.

References

1. Mary R, Couper and Dinesh K Mehta; Prescription writing; WHO Model Formulary 2008 :p12
2. [Http://www.wordiq.com/definition/Medical_prescription#Format_and_definition](http://www.wordiq.com/definition/Medical_prescription#Format_and_definition) (May 1, 2010)
3. [Http://en.wikipedia.org/wiki/Medical_prescription](http://en.wikipedia.org/wiki/Medical_prescription) (May 1, 2010)
4. Vries TP. eds. Guide to good prescribing: a practical manual. Geneva, World Health Organization, 1995: 51–5 (WHO/DAP/94.11).
5. Lofholm PW, Katzung BG. Rational prescribing and prescription writing. In: Katzung BG, ed. Basic and clinical pharmacology, 8th ed. New York, McGraw Hill, 2001:1104–12.
6. Prescription writing. In: British national formulary, No. 41. London, British Medical Association & Royal Pharmaceutical Society of Great Britain, 2000:4–5.
7. Safe writing. In: Lacy CF et al., eds. Drug information handbook, 9th ed. Cleveland, Ohio, Lexi-Comp, 2001: 12.
8. Meyer TA. Improving the quality of the order-writing process for inpatient orders and outpatient prescriptions. *Am J Health-system Pharm*, 2000, 57(Suppl. 4): S18–2.
9. Irshaid YM, Al Homrany M, Hamdi AA, Adjepon-Yamoah KK, and Mahfouz AA. Compliance with good practice in prescription writing at outpatient clinics in Saudi Arabia. *East Mediter Health J*, 2005, 11 (5,6): 922-8.
10. Charatan F. Family compensated for death after illegible prescription. *Br Med J*, 1999, 319: 1456.

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