

# Prescription and Dispensing Practices at Prince Ali Bin Al Hussein Hospital (RMS), Jordan

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**Abstract**— *Background: Rational prescribing, dispensing and patient use are the main components of rational drug use; on the other hand, the actual drug use pattern is not in line with World Health Organization (WHO) guidelines and is frequently irrational in many healthcare settings, mostly in developing countries. As a result, this study aimed to highlight common prescribing and dispensing practices At Prince Ali Bin Al Hussein Hospital (RMS) outpatient settings. Method: Across-sectional study design employed to determine the medication prescribing and dispensing practices At Prince Ali Bin Al Hussein Hospital (RMS). As per the WHO guideline for prescribing encounters, about 1000 prescriptions included in the study. Systematic random sampling was applied to achieve samples from encounters prescribed and dispensed from Dec 1 2018-Feb 1, 2019. The data evaluated against WHO standards for core drug use indicators. Results: The 1000 prescriptions were for a total of 2821 drugs, i.e. a mean of 2.8 (SD 0.2) drugs per prescription (range 1–8 drugs per prescription). A low percentage of drugs were prescribed by generic name in the studied hospital (1.8% of all prescribed drugs) the majority of prescriptions were prescribed with three drugs (31.1%). Above six drugs were prescribed in 2.3% and 1.2% respectively. Most patients received between three and four drugs (31.1% and 25.6% respectively). Conclusion: In the study there is a deviation from WHO standards in prescribing and dispensing practice. Education and supervision is needed to decrease errors in prescribing and dispensing practices.*

**Keywords**— *Prescription, Dispensing, Practice, essential drugs.*

## I. INTRODUCTION

Drugs are the most important key tool in the health care system to prevent, cure and rehabilitate diseases [1-2]. Number and types of drugs are continuously increasing despite of limited financial resources worldwide [2-4]. The money spent on buying medication is very high and up to 40% of entire public health sector budget of any country gone on it. [5] despite this high spending on medication, one third of the world population lack access to essential drugs[6]. The reason for this situation is the unprofessional conduct of available resources due to poor drug management system [7]. On the other hand, using cost effective and well managed Drug supply system can prevent many causes of disability and loss in developing countries [3,7].

In Jordan, as in many rising countries, inappropriate, ineffective and inefficient use of drugs is familiar in health services at all levels [2-4]. There are many factors affecting irrational prescribing, e.g. patients, prescribers, the place of work environment, the supply system, rule policy and drug information and lack of information [6–10]. In addition, health staff gets a little first or continuing education about the rational use of drugs. The conception of an essential drugs list aims to maintain the rational and efficient use of drugs. initial developed by the World Health Organization (WHO) in 1977, it has presented a rational origin not only for drug procurement at the national level, but also for establishing drug requirements at different levels within health care systems [6].

Rational drug use be a sign of that the patient received the proper medication with the proper dose for an adequate period of time, at the lowest expenses [5-7].

WHO, showed that there is an irrational drug use for more than half of all medicines [8,12], and there is a huge interest to improve this problem from all features [11]. Many problems may occur from the irrational use of drugs such as ineffective treatment, increasing of resistance to antibiotics, economic expenditure on patients and society [4-5].

Good education is needed to overcome this complicated problem [5]. And constant corporation between all parts of the health care professionals is needed [7,13]. Many interventions have showed useful and valuable in endorsing rational drug use [5]. Management and using tools for observation and evaluation can improve health care system [6]. A cluster of drug use indicators to scan the drug use pattern in health care services has been recommended by World health organization (WHO) [3-6].

## II. METHODS

A cross-sectional survey was carried out from Dec 1 2018-Feb 1, 2019 Prince Ali Bin Al Hussein Hospital. A total of 1000 prescriptions were collected randomly and studied to record information about prescribing indicators, using a redesigned form. The standard WHO prescribing indicators were calculated as listed below:

- Mean number of drugs/prescription,
- Percentage of drugs prescribed by generic name,
- Percentage of prescriptions containing antibiotics,
- Percentage of prescriptions containing Analgesics.
- Percentage of antibiotics prescribed from all prescribed drugs,
- Percentage of drugs prescribed from the hospital EDL.

At Prince Ali Bin Al Hussein Hospital the following indicators were recorded:

- Availability of local drug information sources: availability of the hospital essential drug list and availability of standard

treatment guidelines • Availability of 8 essential drugs chosen from hospital EDL. Data are existing as simple frequency, mean and standard deviation (SD).

TABLE 1. Frequency of drugs prescribed by generic name, for antibiotics, injectable drugs and analgesics, and drugs prescribed from hospital essential drugs list (EDL)

	Drugs prescribed by generic	Antibiotics	Injectable drugs	Analgesics	Drugs prescribed from EDL
Number	18	668	12	860	891
percentage	1.8%	66.8 %	1.2%	8.6%	89.1%

TABLE 2. Comparison of prescribing and dispensing indicators obtained in the study with WHO standard indicator.

Number	Parameters	Result
1	Average number of drugs per prescriptions	2.8 %
2	prescription with an antibiotic prescribed	66.8 %
3	prescription with an injection prescribed	1.20 %
4	prescription with diagnosis written	22.7 %
5	prescription with dosage written	71.6 %
6	medicines actually dispensed	90.1 %
7	Drugs prescribed from EDL	89.1 %

### III. RESULTS

The 1000 prescriptions were for a total of 2821 drugs, i.e. a mean of 2.8 (SD 0.2) drugs per prescription (range 1–8 drugs per prescription). A low percentage of drugs were prescribed by generic name in the studied hospital (1.8% of all prescribed drugs) (Table 1).

Considering antibiotics use, its constitute 66.8% of the total number of prescriptions. The highest number of prescriptions was found to be prescribed with no injections (98.8). Injectable drugs accounted only for 1.2% of the total prescriptions as shown in table 1.

As shown in the table 3 the majority of prescriptions are prescribed with three drugs (31.1%). Above six drugs were prescribed in 2.3% and 1.2% respectively. Most patients received between three and four drugs as the table 3 shown (31.1% and 25.6% respectively).

### IV. DISCUSSION

#### Number of drugs per prescribed per prescription

As shown in the table 1, the study value of 2.8 higher than recommended limit of WHO (<2), and this result need an educational intervention in prescribing practice.

In this study, three or more drugs were prescribed in 31.1% (as shown in table 3) which lead to more drug interactions and dispensing errors, adding to that the load on patient to take the correct dose of drugs. On the other hand, increase the cost of the treatment.

TABLE 3. Number of drugs per prescription

Number of drug	Percentage %
1	11
2	16.4
3	31.1
4	25.6
5	8.8
6	3.6
7	2.3
8	1.2

#### Antibiotics use

Anitibiotics accounted for 66.8% of the total number of prescribed drugs in this study. (Table 1). Furthermore this percentage are elevated than those specified by WHO indicator (<30%). Its complicated issue to give a convincing reason for this difference but it may be due to:

- 1) Cultural attitudes about antibiotics and patient expectations to obtain antibiotics.
- 2) The study was conducted in outpatient pharmacy and the patients suffered from acute illness not chronic.

#### Injection use

Injectable medications accounted for 1.2% of total drugs prescribed (Table 2) which met the terms of WHO standard (<10%)., this low percent may due to high coast of injectable drugs and the need for a specialized person to administer it.

#### Dosage and diagnosis written on prescription

The percentage of prescription having a diagnosis was 22.7 % and the percentage of prescriptions with dosage form written was 71.6 % (table 2). This prohibited characteristic is considered as deprived prescribing practice that’s directly go to irrational drug use, due to this value when compared to WHO standards (100%),

#### Availability of drugs

Medication accessibility is very serious for both the patient and community. In governments high percentage of health budget is billed to medicine. Lack of medicine is a real problem that accounted for poor healthcare. In the current study the percentage of drug actually dispensed was 90.1 % (table 2) which is less than the ideal (100% availability).

### V. CONCLUSION AND RECOMMENDATIONS

In this study there is a deviation from WHO standards in prescribing and dispensing practice. Prescribers in our hospitals should be advised to use the generic names of drugs in prescriptions, to prescribe the lowest number of drugs needed and to avoid symptomatic treatment whenever possible. Antibiotics and injectable drugs should be prescribed with care. Efforts are needed to guarantee that local drug information resources are available to the prescribers.

Supervision is wanted to teach and decrease prescribing errors and Write the prescription imperfectly. based on finding of this study, more comprehensive studies is recommended to be done at regular intervals, in order to give a guidance to policy makers and drug supply managers about the correct interventions for rational drug use .

But in general and in my opinion, the prescribing and dispensing practices in our health facility which is reflected in outpatient daily pharmacy are shown a small deviation from WHO slandered.

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