

## A Study on Drug Use at Upazilla Health Complex, Savar, Dhaka

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### Abstract

*A cross sectional study at Upazilla Health Complex, Savar, Dhaka for prescription analysis and assessment of drug dispensing in 30 patients revealed that the average number of drugs prescribed per encounter was 2.33. About 44.28% drugs were prescribed by generic names and 61.42% of them were from the essential drug list. 24.28% encounters included use of antibiotics. Average consultation and dispensing time was 2.26 min and 1.18 min, respectively. 30% patients knew the correct dosage of drugs. 66.67% drugs were available in the hospital stock.*

**Keywords:** Prescription, Analysis, Assessment, Drugs, Patients, Encounter, Antibiotics

### Introduction

Drug use involves not only the actual prescribing of drugs but also a wide range of behaviors that occur during the drug use encounter, the interaction between the prescriber and the patient, etc. These behaviors include: diagnosis, prescribing, dispensing and use of drugs by the patient. Drug use indicators studies can be used for the following purposes: to measure drug use in a respective group of facilities, compare facilities, providers or groups at a single time; identify whether a facility is above or below a set norm of practice and assess the effect of an intervention in an intervention group and a control group by measuring the indicators before and after completion of the study.<sup>[1]</sup>

### Drug use indicators study

Drug use indicators are a set of limited indicators that have been developed to assess the common practices of drug use. These indicators have been selected through a process of discussion, field testing, and revision, involving a wide range of people co-ordinated by INRUD.

Drug use indicator studies can be used for four main purposes:<sup>[1]</sup>

1. A descriptive cross-sectional study: to measure drug use in a representative group of facilities.
2. A comparative cross-sectional study: to compare facilities, providers, or groups at a single time.
3. Supervision (monitoring): to identify whether a facility is above or below a set norm of practice.
4. Evaluation: to assess the impact of an intervention in an intervention group and a control group, by measuring indicators before and after completion of the study.

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Drug use indicators are divided into three groups as follows: <sup>[1] [2]</sup>

**Prescribing indicators**

1. Average number of drugs per encounter
2. Percentage of drugs prescribed by generic name
3. Percentage of encounters with an antibiotic prescribed
4. Percentage of encounters with an injection prescribed
5. Percentage of drugs prescribed from Essential Drugs List or Formulary

**Patient care indicators**

6. Average consultation time
7. Average dispensing time
8. Percentage of drugs actually dispensed
9. Percentage of drugs adequately labeled
10. Patient's knowledge of correct dosage

**Facility indicators**

11. Availability of copy of Essential Drugs List or Formulary
12. Availability of key drugs.

These indicator studies were performed at Upazilla Health Complex, Savar, Dhaka by randomly selecting 30 prescriptions from patients of different age groups. Although attempts were made to study both prospective and retrospective data, only prospective data were used in this study. Sample size was selected according to the guidelines set by INRUD.

**Objective of the study**

This study aims to find out the common patterns of drug use practice at Upazilla Health Complex, Savar, Dhaka. It attempts to understand the reasons and behavior of the prescribers and dispensers behind a particular drug use. The common prescribing and dispensing indicators developed by the International Network for Rational Use of Drugs (INRUD) were followed in this study.

Although this study does not bring any conclusive remarks regarding the reasons behind a particular irrational health practice; it would help to identify the basic problems of drug use and thereby, to adopt and implement general principles, strategies and activities to improve the quality and cost efficiency of health service.

**Methodology of the Study**

The design of a drug use indicators study varies from setting to setting. The nature and scope depends on many factors, such as: <sup>[1]</sup>

- Information needs of health managers
- Capabilities of the record keeping systems
- Types of providers whose behavior is to be described
- The resources available to carry out the work

The purpose of this study determines which indicators to use and how the study should be designed. Possible purposes of drug use indicators studies include the following: <sup>[1]</sup>

- Describe current treatment practices
- Compare performance among health facilities or regions
- Assess the impact of an intervention
- Periodic monitoring of drug use.

30 prescriptions were randomly collected from outdoor patients to assess the prescription pattern in the respective health facility. However, data were collected prospectively and they were further reviewed to draw a conclusion. Prospective data collection included doctor-patient interaction and it was further followed by an exit interview with the patient. Drug store in-charge was also interviewed to understand drug procurement and management system.

The study site was selected around Upazilla Health Complex, Savar, Dhaka. Dispensing patterns were closely investigated. The time taken to dispense the drugs was also observed and it was finally followed by an exit interview with the patients.

Facility indicators were determined by investigating Essential Drug List (EDL), it's most recent update and the form that was distributed to health facilities. The availability of the key drugs recommended were also investigated whether they were in the stock or not.

**Table-01: Prescribing Indicator Data at Upazilla Health Complex, Savar, Dhaka**

Sl no.	Age (yrs)	No. of drugs prescribed	Drugs prescribed by generic name	No. of antibiotics prescribed	No. of injections prescribed	Drugs prescribed from Essential Drug List
1	50	3	0	0	0	2
2	25	2	1	0	0	1
3	48	2	1	0	0	2
4	10	3	0	1	0	2
5	12	4	0	1	0	1
6	06	2	1	0	0	1
7	39	1	1	1	0	1
8	27	2	1	0	0	1
9	35	2	1	0	0	2
10	47	3	1	1	0	2
11	55	4	3	1	0	3
12	60	2	1	0	0	1
13	30	1	1	1	0	1
14	30	2	0	1	0	1
15	22	2	2	1	0	1
16	28	3	0	0	0	2
17	41	3	2	0	0	2
18	59	2	1	1	0	1
19	70	2	1	0	0	1
20	50	4	3	1	0	2
21	07	2	0	0	0	1
22	15	3	1	0	0	2
23	18	3	1	1	0	2
24	54	1	2	1	0	1
25	72	2	2	0	0	1
26	80	2	0	1	0	1
27	19	2	0	1	0	1
28	64	1	1	1	0	1
29	24	3	1	1	0	2
30	32	2	2	1	0	1
<b>Total</b>		<b>70</b>	<b>31</b>	<b>17</b>	<b>0</b>	<b>43</b>
<b>Avg.</b>		<b>2.333</b>	<b>1.03</b>	<b>0.566</b>	<b>0</b>	<b>1.43</b>
<b>%</b>			<b>44.285</b>	<b>24.285</b>	<b>0</b>	<b>61.428</b>

Source: Field survey during June, 2012

### Number of drugs prescribed per encounter

In Upazilla Health Complex, Savar, Dhaka, 30 patients were observed during prescription study. Number of drugs prescribed per encounter was studied by counting the cases receiving one drug, two drugs, three drugs and four drugs. Average number of drugs prescribed per encounter was 2.33.

**Table-02: Number of drugs prescribed per encounter at Upazilla Health Complex, Savar, Dhaka**

	One drug	Two drugs	Three drugs	Four drugs
No. of patients	4.00	15.00	8.00	3.00
% of patients	13.33	50.00	26.67	10.00

### Percentage of drugs prescribed by generic name

In Upazilla Health Complex, Savar, Dhaka, most prescriptions were made by generic name. In some prescriptions one or two drugs were in generic name. However, 44.28 % drugs were prescribed by generic name.

### Percentage of encounters with an antibiotic prescribed

In Upazilla Health Complex, Savar, Dhaka, 24.28% encounters included use of antibiotics.

### Percentage of encounters with an injection prescribed:

In Upazilla Health Complex, Savar, Dhaka, no injections were found to be prescribed during this survey.

### Percentage of drugs prescribed from EDL

In Upazilla Health Complex, Savar, Dhaka drugs prescribed from EDL (Essential Drug List) were studied. The percentage of drugs prescribed from EDL was 61.42%.

**Table-03: Number of drugs prescribed from EDL at Upazilla Health Complex, Savar, Dhaka**

	One drug	Two drugs	Three drugs
No. of patients	18.00	11.00	1.00
% of patients	60.00	36.66	3.33

### Average consultation and dispensing time

The consultation time is the time taken by the prescriber to consult an individual patient. Waiting time is not included. The average consultation time was found 2.26 minutes. The dispensing time is the time between arrival at the dispensing counter and leaving. Here waiting time is also not included. The average dispensing time was found to be 1.18 minutes.

### Percentage of patients having knowledge on correct dosage of drugs

In Upazilla Health Complex, Savar, Dhaka most of the patients did not know about the diseases. In these places patients were from lower economic background and were not concerned or careful about the disease. Only 30% patients were found to have proper knowledge about drug dosage.

**Table-04: Facility Indicator Data at Upazilla Health Complex, Savar, Dhaka**

Availability of Essential Drug List-Yes

Key Drugs in Stock

Tablets	Availability (Yes/No)
Paracetamol	Yes
Antacid	Yes
Cotrimoxazole	Yes
Metronidazole	Yes
Histacin	Yes
Sulbutamol	Yes
Hyoscine Butyl Bromide	Yes
Ferrous Sulphate	No
Riboflavin	Yes
Amlodipine	No
Nifedipine	No
<b>Capsules</b>	
Tetracycline	Yes
Ampicillin	Yes
Amoxycillin	No
Indomethacin	No
Vitamin B Complex	Yes
<b>Syrups</b>	
Histacin	Yes
Paracetamol	Yes
Cotrimoxazole	Yes
Ampicillin	No
Penicillin G	No
<b>% in stock</b>	<b>66.67%</b>

Source: Field survey during June, 2012

### Percentage of availability of key drugs in stock

According to the drug list which was kept on Upazilla Health complex, Savar, Dhaka the percentage of key drugs available was 66.67%. But it was also seen that in comparison with EDL their entitled drug list was very short and variation of dosage form was limited.

### Result and Discussion

By studying various drug use indicators at Upazilla Health Complex, Savar, Dhaka, following observations were found:

- **Average number of drugs prescribed per encounter- 2.33**  
Average number of drugs that was prescribed per encounter indicates that patients were being prescribed with drugs according to their diagnosis.
- **Percentage of drugs prescribed by generic name- 44.28%**  
It indicates that there is a tendency of the health care providers to prescribe drugs by generic name.
- **Percentage of encounters with an antibiotic prescribed- 24.28%**  
Antibiotics are frequently prescribed by the health care providers.
- **Percentage of encounters with an injection prescribed-0%**  
No patients were prescribed with an injectable during the survey. But this does not indicate that parenterals are not prescribed at all. There might be some prescriptions with injectables but as prescriptions were randomly selected, such prescriptions were not found.
- **Percentage of drugs prescribed from EDL- 61.428%**  
It indicates that most of the drugs are prescribed from EDL.
- **Average consultation and dispensing time- 2.26 minute and 1.18 minute respectively**  
According to WHO guidelines, both the standard consultation and dispensing time is 5 min. But this study clearly indicates that average consultation time is very poor. The dispensers were not efficient in dispensing drugs and they did not explain dosage guideline properly within such a short time period.
- **Percentage of patients having knowledge on correct drug dosage- 30%**  
Most of the patients were illiterate and that is why they did not remember dosage guideline properly.
- **Percentage of availability of key drugs in stock- 66.67%**  
Most of the drugs from EDL were available in the stock.

## Remarks

Due to so many patients per physician per day to provide service, neither physicians were properly aware of consultation with the patients nor were the dispensers aware of dispensing procedure properly. Most of the patients were illiterate. That is why, there is a huge chance of misuse of drug, because there is a psychological belief in them that “*There is a pill for every ill*”. To overcome all these situations, massive educational campaigns must be undertaken to create awareness among prescribers, dispensers and patients. This can be in the form of printed educational materials (posters, flyers, booklets) or by face-to-face education program, or by influential key opinion leaders. Essential drug lists must be updated regularly and it must be ensured by the hospital authority that all the essential drugs become available in the stock. The tendency to prescribe drugs by generic names rather than by brand names must be encouraged to avoid polypharmacy and unnecessary use of drugs, specially antibiotics. By all these campaigns, rational use of drugs can be ensured properly in such health facilities in Bangladesh.

## References

Implementing Drug use Indicators study

[http://archives.who.int/prduc2004/rduc/INRUD.../7\\_IMPL-SG.doc](http://archives.who.int/prduc2004/rduc/INRUD.../7_IMPL-SG.doc)

How to investigate Drug use in health facilities: Selected Drug use indicators

<http://www.who.int/medicinedocs/en/d/Js2289e>