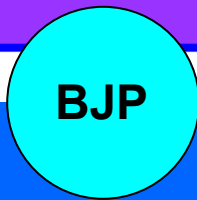


**Table I**

**Results of prescription audit (n = 600)**

Prescribing indicators	Number
Average drug per prescription	3.8
Prescribed in generic name (%)	5
Antibiotics prescribed (%)	435
Injections prescribed (%)	73
Percentage of drugs prescribed from essential drug list	300
Whether prescription is complete with respect to	
Format	159
Dosage and duration	420
Patient medical information	105



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**Research Article**

**Evaluation of prescribing pattern  
of the private practitioners by the  
undergraduate medical students**

## Evaluation of prescribing pattern of the private practitioners by the undergraduate medical students

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### Abstract

To sensitize the fourth year undergraduate medical students about rational prescribing, 600 prescriptions of private practitioners were collected by them and analyzed using WHO/INRUD indicators. There were average 3.8 drugs per prescriptions. Drugs were prescribed in generic name only in 5 prescriptions. About 50% drugs were prescribed from the Essential Drug List; only 17.5% of prescriptions were complete in respect to patient medical information. Antibiotics were prescribed in 72.5% of the prescriptions; injections were prescribed in about 12.1% of the prescriptions. Although the exercise revealed few elementary aspects of the prescribing, the medical students participated in the exercise enthusiastically and perhaps understood the issues related to rational prescribing effectively.

### Introduction

Medically inappropriate and economically inefficient use of medicines is observed throughout the world. These features are more marked in the developing countries like Bangladesh. Rational use of medicines is one essential element to be achieved to improve quality of health and medical care for the patients and the community (Ross-Degnan et al., 1992; Laing, 1990; Avorn et al., 1987).

Medical science in general and therapeutics in particular is developing very quickly and naturally undergoing fast transition. Therefore it has become imperative to train the physicians for self-directed learning (Joshi, 1996; Rahman and Rahman, 1993). Prescribing appropriate medicines for a disease condition and providing related information in a meaningful way to the patients should be regarded as the key 'transferable skills' to be achieved through Pharmacology courses (Rahman et al., 2000; Shankar et al., 2003). Generalized presence of irrationalities in prescribing indicates that traditional teaching in medical schools does not adequately prepare students for rational therapeutics. Most medical students do not have clear understanding

on the skills required for prescribing a medicine for their patients or type of information they need to provide. This is usually because their pharmacology training has concentrated more on theory than on practical aspects of prescribing (de Vries et al., 1994). Prescribing behavior of the medical graduates depends upon how and what they have been taught and trained about drugs during their undergraduate course (Schwartz and Griffin, 1986). A survey had revealed that medical students felt the need for more teaching of therapeutics in the undergraduate medical curriculum (Ward and Miolszweski, 2002). Medical students should be helped to learn how to choose drugs appropriately for prescribing (Begum et al., 1999; de Vries, 1993; Rahman et al., 1998; Ramsay, 1993; WHO, 1993).

The current study was an attempt to teach the medical students the skills required to evaluate prescribing, whether appropriate or rational. To attain this skill, 'an exercise on prescription audit' was introduced as a teaching-learning strategy for the 4<sup>th</sup> year M.B.B.S students of the Enam Medical College and Hospital where they collected, analyzed and audited prescriptions of the private practitioners on the basis of INRUD indicators (Anker et al., 1993).



At the end of exercise the students should be able to analyze the prescribing pattern in order to assess the type and magnitude of irrational prescribing by the private practitioners of Dhaka city and to understand the principles of rational prescribing.

## Materials and Methods

The 4<sup>th</sup> year medical students of EMCH were divided into 6 groups, each group consisting of 7-8 students. Then each group was asked to collect 100 prescriptions of the registered physicians and specialists of different sectors at random within a period of one month. After a month, a total of 600 collected prescriptions of private practitioners were submitted. No attempt has been made to categorize the prescriptions according to patient's age, sex or disease profile. Afterwards, each group of students were given a period of 2 hours to analyze and audit the individual group results using the INRUD indicators. Then in the next practical class students compiled the individual group results into a combined one and audited the prescriptions using INRUD indicators.

## Results

After compiling the results it was observed that there were average 3.8 drugs per prescriptions (Table I). Only in 5 prescriptions the drugs were prescribed in generic name; only 26.5% of prescriptions were complete in regard standard prescription format; only 50% drugs were prescribed from the essential drug list; only 17.5% of prescriptions were complete in respect to patient medical information. Antibiotics were prescribed in 72.5% of the prescriptions; injections were prescribed in about 12.1% of the prescriptions.

## Discussion

The present study was a report of an exercise included in the practical portion of the pharmacology courses in the undergraduate medical curriculum 2005. The students of 4<sup>th</sup> year MBBS class of Enam Medical College & Hospital have collected, analyzed and audited 600 prescriptions of the private practitioners using INRUD indicators. Through the exercise the students revealed that most of the private prescribers did not follow the criteria of rational prescribing. On an average, 3.8 drugs were prescribed per prescription, which was 3.4 in a study conducted in 1996 (Baqui and Choudhury, 1996) and 3.3 in another study conducted in 1998 (Rahman et al., 1998). In a Nigerian study, the average number of drugs per case was 3.2 (Chukwuani et al., 2002).

**Table I**

### Results of prescription audit (n = 600)

Prescribing indicators	Number
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In the current study, the prescribers prescribed the drugs in generic name only in 5 prescriptions (0.01%), which was much lower than (4.1%) the finding of the previous study (Baqui and Choudhury, 1996). In the current study the students revealed that prescribers frequently prescribed antibiotics (72.5%) in their prescriptions. This finding is in agreement with the study done by Baqui and Choudhury (1996) where the percentage of patients receiving antibiotics was 73.3%. In an Iranian study (Ansari, 2001), percentage of patients receiving antibiotics was found high (86.2%). However, all these findings do not correspond with the finding of a study conducted in 1998, which reported only 38.7% prescriptions contain antimicrobials (Rahman et al., 1998). In the present study, about 50% of the drugs were prescribed from the Essential Drug List which was almost similar, i.e., 49% to the findings of Baqui and Choudhury (1996). About 12% prescriptions contained an injection which were 9.7% (Baqui and Choudhury, 1996) and 8.2% (Rahman et al., 1998). About 58% patients were provided with proper instructions regarding drug dosing and duration (Baqui and Choudhury, 1996), which has increased to 70%. Nevertheless, only 17.5% prescriptions contained proper instructions about side effects of the prescribed drugs, other relevant advice and follow-up of the patients. These patient medical information parameters were never studied before in Bangladesh, therefore could not be compared.

From these observations it was evident that the prescribing pattern of the private practitioners is not improving regarding some particular parameters like generic prescribing, polypharmacy, use of antibiotics and provision of information. The reason of this irrational prescribing is perhaps due to the lack of knowledge of the private practitioners on 'how to prescribe a drug' and 'what information they should provide to their

patients' (de Vries, 1994; Rahman et al., 1998). The present exercise was an attempt to educate the medical students about the methods and skills required to evaluate the prescribing pattern, which in turn is expected to improve the understanding and perception about rational prescribing among the future prescribers.

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## Conflict of Interest

Authors declare no conflict of interest

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