



Practical PHARMACOLOGY

Simplified Practical Record Book

As per the Competency-based Medical Education Curriculum (NMC)



HIGHLIGHTS

- **Assured Success:** High scoring potential in practical exam and viva-voce.
- **Recent Updates in Pharmacology:** Incorporates the latest updates in the field with suffixes and sound-alike, spell-alike drug names.
- **Complete Examination Preparation:** Covers everything an undergraduate student needs to know before the pharmacology practical exam, includes puzzles and museum as well as home medicine box activities.
- **High-yield Content:** Exclusive coverage of high-yield content such as practically useful prescriptions and dosage calculations and adverse drug reactions.

Name: _____

Roll No: _____

II MBBS Batch Year: _____

College: _____

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Section 2

Clinical Pharmacology

This record book provides you guidelines for prescription writing, P drug concept, various fixed dose combination and their rationality, analysis of prescription, and communicating the prescription to the patient. It also provides you the details of communicating and training the patient for using various simple devices. It covers the evaluation of drug promotional literature and also communication with a representative of a pharmaceutical company. It provides questions on simple cases to encourage your thinking. You can know and study some specific, important adverse drug reactions.

The book has innovative exercises, such as puzzle solving, home medicine box activity, and museum activity.

Clinical pharmacology is just not information. It is about how and why. This record book provides some intelligent questions based on the pharmacological concepts. Solving and discussing these questions is a kind of brain storming to strengthen your capacities of rationality and logic.

Practical 1: Prescription Writing/Prescription Order

Prescription Order is called a written order **given by a physician to the pharmacist**, which contains names and details of the medications/preparations prescribed along with the strength and type of preparations to be dispensed and the quantity to be dispensed, based on the duration of treatment.

Although it is traditionally called as the order given to the pharmacist, after the pharmacist has dispensed the, the prescription is actually useful to the patient to know the details of taking medication.

The prescription order must contain the patient details, such as name, age, sex, body weight, address.

It must contain the name, registration number, and contact details of the prescriber.

Prescription must contain the date of prescribing.

Prescription contains the typical symbol—“RX” (Recipe or Recipere)—meaning “Take thou of” means “you take the following”.

It also contains the names, strength, and quantities of the medications to be dispensed. In case a medication is to be compounded, the prescription contains the formulae for compounding. It also gives **instructions to the pharmacist** for compounding and dispensing.

At the end, the prescription order contains the **instructions to the patient** regarding the detailed information of drugs to be taken and also other associated precautions and instructions.

The prescription order has to contain the **physician's signature and registration number**.

The prescription letterhead must contain the physician's name, qualifications, his/her branch of medicine (allopathy/homeopathy, etc.), registration number, address, and contact details.

"Prescription Order" has 4 parts.

Superscription

It is the uppermost part of the prescription. Contains physician's name, qualifications, branch of medicine the physician belongs to, his/her address, and contact details including phone no, email ID, and most importantly—the date. It must have the prescription serial number. It also contains the patient's age, sex, body weight, address, and the symbol "**Rx**" which stands for "Take thou of", and means—"You take the following".

Inscription

It is the body or core of prescription. It contains the names of the medications in **CAPITAL and legible letters**, the formulations (tablet/capsule, etc.), its strength (mg/g, et.), and the quantities to be dispensed.

Subscription

Contains the instructions given to the pharmacist for compounding and dispensing.

Signature or Transcription

Contains the instructions to the patient including how much, how to, and when to—the medication is taken and any other precautions related to the medication use, along with the physician's signature, registration number, and the stamp.

Below the names of the medications, the prescription must contain a sentence—"or any other generic medications as per the choice of the patient", so as to allow autonomy to the patient to choose generic medications.

Below the transcription/signature, there needs to be an area for use of pharmacist indicating which and how much quantity of medications have been dispensed on a particular date, with pharmacist's stamp and signature. It should also indicate if the "refill" is allowed or not, and if allowed—how many refills. (Refilling a prescription means using the same prescription to obtain the medicines again—as indicated by the physician, e.g., one refill—you can use the same prescription one more time to obtain the medicines. Two refills—you can use the same prescription 2 more times to obtain the medicines)

In a traditional prescription, the doctor prescribes one compound, which is to be prepared by the pharmacist by mixing various substances. So the transcription/signature can be distinctly seen as a separate part of prescription.

Whereas in a commercial prescription, there are many different medications commercially available (and there is nothing to be mixed or compounded), and hence the transcription (instruction about use) comes after each medication, and cannot be shown as a single, separate part (See commercial prescription given later in this exercise).

In a traditional prescription, usually only one medication is ordered which is prepared by compounding various ingredients. Hence, the quantities are mentioned in front of each ingredient. To avoid the confusion and ambiguity in numbers and decimal points, a T line or Decimal line is drawn to replace the decimal points. Complete/whole numbers are written before the decimal line (on the left side of decimal line), and the fractions after the decimal line (on the right side of decimal line). In a traditional pharmacy prescription, solids are always mentioned in grams (g) and liquids in milliliters (mL).

In a commercial prescription, the medications to be ordered are not to be compounded. The medications are readymade available on the market. Hence, the T line or decimal line is not needed.

As mentioned earlier, in traditional or older pharmacy practice, the pharmacist used to mix and compound and prepare a formulation. In such formulations, the main active ingredient is called the BASIS. The substance which helps the action of the main ingredient is called ADJUVANT. The substances added to rectify certain drawbacks of the preparation are called CORRECTIVES. Correctives usually may be sweetening or flavoring agents which improve the taste of the preparation. The medium in which the formulation is made is called a VEHICLE. In traditional prescriptions, the substances are usually mentioned in the same order as—Basis, Adjuvant, Corrective, and lastly the Vehicle.

As an example of a commercial prescription written these days, a Maharashtra Model Prescription released by its State FDA authorities is given for your study.

In this prescription, the superscripted alphabet D is related to doctor details, P is related to the patient details, and M is related to the medication details.

MAHARASHTRA MODEL PRESCRIPTION FORMAT

Doctors (Prescribers) Full NameD1

Qualification (e.g., MBBS, MD)D2

Reg. No. (Specify alphabets specifying pathy)/Reg. No.D3

Full Address,D4 Contact: (Telephone no. Email etc)D5

Date: DD/MM/YY

D6

Prescription Serial Number D9

Patient's full Name P1

Patient's Address and phone numberP2

SexP3

AgeP4

WeightP5

RxD10

1. **Name of Medicine**M1, As far as possible, generic name in capital letters, **Strength**M2, **dosage form**M3, **dosage instruction**M4, **duration and quantity**M5.

2.

3.

“or any other cheaper generic medicine as per choice of patient.”

Doctor's Signature and Date D7

Doctor's StampD8

Refill: Yes/No

If Yes, Refill: 1/2/3

(If the entire prescription is not dispensed, specify name or number of medicine and quantity dispensed)

Names and quantities of medicines dispensed.

Dispensed by: _____ (Pharmacist's Name, Reg No. and Signature)

Name and Address of Medical Store: _____

Date of Dispensing: _____

GUIDELINES FOR DOCTORS/PRESCRIBERS

No.	Suggestions
1.	Changes in Prescription: If any changes are warranted in prescription, please issue fresh prescription.
2.	Do not use prescription pad with the name of medical store: Doctors should not use prescription pads with pre-printed messages, such as “Available at XYZ medical stores”
3.	Do not print names of more than one doctor on the prescription: One should avoid having names of two or more doctors on the same prescription pad (even if it is a husband and wife team).
4.	Do not use prescription pad of another doctor: A doctor should not use another doctor's prescriptions pad, even with her/his consent. Conversely a doctor should not allow other doctor to use his/her prescription pad.
5.	Precaution about computer generated prescription: If the doctor types or generates her/his prescription on a computer, he/she must ensure that he/she issues it with her/his full, recognizable dated signature in ink, and must sign as close as possible to the last drug in the list, so that no gap is left between the last drug and the signature.

No.	Suggestions
6.	Prescription of certain medicines by specialist: Certain medicines can be supplied on the prescription by specific specialist only. For example, Sildenafil citrate can be prescribed by only Urologist, Psychiatrist, Endocrinologist, Dermatologist or Venerologist. Letrozole can be prescribed by a Cancer specialist only.
7.	Recognize the service of Pharmacist: As per the internationally recognized practice, especially followed in the developed world, doctors should recognize importance of services of pharmacist as they are required to supervise sale of medicine under the law and are also responsible for counseling the patients. The pharmacist is trained to recognize therapeutic incompatibility, absorption incompatibility, etc., of medicines in addition to various facets of pharmacological effects of medicine. In view of the above, the doctors should consider her/him as a resource person and his/her view should be considered with due regard to her/his knowledge.

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Prescription Serial No. B/17 Date: 20/08/2014

Patient's name: Atmaram Raoji Bhende
Address: 376, Karlekar Building, Navi Peth, Pune 411004
Tel No. 22377816
Sex: Male Age: 35 Years Weight: 61 kg

Rx

1. AMOXICILLIN CAPSULES 250 mg
1 Morning – 1 afternoon – 1 evening
For 5 days = Total quantity 15 CAPSULES

2. PARACETAMOL TABLETS 500 mg
1 Morning – 1 afternoon – 1 evening
For 5 days = Total quantity 15 TABLETS

-or any other cheaper generic medicine as per the choice of the patient.

Prampatil. 20/08/2014

Name and quantity of medicine dispensed:
Date:
Name and address of Medical Store:
Date of dispensing:

14 cm

Fig. 1.1: Sample prescription.

1. Highlight and mark to show the various parts for the following prescription.

TRADITIONAL PRESCRIPTION which orders compounding, mixing, etc.

Dr Amar Pednekar MD

Reg No 54545/Allopathy

122, Ishwar-Parvati Hospital, Doctors' Colony,

Gadhinglaj 416 501

Phone 77781 34567

Email: amp@gmail.com

Date: 25/08/2024

Prescription Serial No. 24/346

Mr Nitin A Patil

House No. 321, Government Colony,

Gadhinglaj—416 501

Male 35 Years 56 kg

Rx

1. SODIUM SALICYLATE	1	8
2. SODIUM BICARBONATE	1	4
3. SIMPLE SYRUP	6	0
4. WATER TO MAKE	90	

Mix all constituents to make a solution.

One dose of 30 mL to be taken three times a day after meals.

-or any other equivalent cheaper generic medicines as per the choice of the patient.

Doctor's Signature

25/09/24

Reg. No. 54545

Doctor's Stamp

Refill: No

Names and quantities of medicines dispensed		
No.	Medication dispensed	Quantity
1.		

Contd...

Contd...

No.	Medication dispensed	Quantity
2.		
3.		

Name and Address of Medical Store:

Dispensing Pharmacist: Name: _____ Reg No. _____ Signature: _____ Date: _____

2. Mark the parts for the following prescription.**COMMERCIAL PRESCRIPTION ordering readymade medications**

Dr Amar Pednekar MD

Reg No 54545/Allopathy

122, Ishwar-Parvati Hospital, Doctors Colony,

Gadhinglaj - 416 501, Phone-330346

Email: amp@gmail.com

Date 25/09/2024

Prescription Serial No. 24/517

Miss Shruti R Patil**Flat No.7, Flying Height Society,****Gadhinglaj - 416 501****Female 22 Years 49 kg****Rx**

1. CAPSULE AMOXYCILLIN (250 mg) - (9) capsules

Dispense such 9 capsules.

One capsule to be taken every 8 hours after food for 3 days

2. TABLET IBUPROFEN (400 mg) - (9) Tablets

Dispense such 9 tablets.

One tablet to be taken every 8 hours after eating 3 days

-or any other equivalent cheaper generic medicines as per the choice of the patient.

Drink plenty of water.

Doctor's Signature

25/09/24

Reg. No. 54545

Doctor's Stamp

Refill: No

Names and quantities of medicines dispensed		
No.	Medication dispensed	Quantity
1.		
2.		
3.		

Name and Address of Medical Store:

Dispensing Pharmacist: Name: _____ Reg _____
 No. _____ Signature: _____ Date: _____

3. Mention the missing or inappropriate/incorrect items in this prescription.

Dr Amar Pednekar MD

122, Ishwar-Parvati Hospital,

Doctors Colony,

Gadhinglaj - 416501, Phone 330346

Email: amp@gmail.com

Prescription Serial No. 24/346

Mr Nitin A Patil

House No. 321, Government Colony,

Gadhinglaj - 416 501

Male 56 kg

1. SODIUM SALICYLATE	1	8
2. SODIUM BICARBONATE	1	4
3. SIMPLE SYRUP	6	0
4. WATER TO MAKE	90	

Mix all constituents to make a solution.

One dose to be taken three times a day after meals.

Doctor's Signature

Doctor's Stamp

Missing or inappropriate items

S. No.	What is missing ?	Where ?

4. Mention the missing or inappropriate/incorrect items in this prescription.

Dr Amar Pednekar

Reg No 54545/Allopathy

122, Ishwar-Parvati Hospital,

Doctors' Colony,

Gadhinglaj - 416 501

Date 25/09/2024

Miss. Shruti R Patil

Flat No. 7, Flying Height Society,

Gadhinglaj - 416 501

Female 22 Years

Rx

Capsule AMOXICILLIN - (9) capsules

Dispense such 9 capsules.

Take 3 capsules everyday for 3 days.

Tablet Ibuprofen - (9) Tablets

Dispense such 9 tablets.

One tablet to be taken 3 times a day for 3 days after food.

Drink plenty of water.

Doctor's Signature

Refill: Yes/No If Yes, Refill: 1/2/3

Names and quantities of medicines dispensed		
S. No.	Medication dispensed	Quantity
1.		
2.		
3.		

Missing or inappropriate items

[illegible]

ABBREVIATIONS

Abbreviation	Latin	English
<i>A</i>	<i>Ante</i>	<i>Before</i>
<i>Ac</i>	<i>Ante cibos/cibum</i>	<i>Before meal</i>
<i>Ad</i>	<i>Ad</i>	<i>To, up to</i>
<i>Ad lib</i>	<i>Ad libitum</i>	<i>As much as one desires/add freely</i>
<i>Aq</i>	<i>Aqua</i>	<i>Water</i>
<i>b.i.d</i>	<i>Bis in die</i>	<i>Twice a day</i>
<i>C</i>	<i>Cum</i>	<i>With</i>
<i>Dil</i>	<i>Dilutes</i>	<i>Diluted</i>
<i>Et</i>	<i>Et</i>	<i>And</i>
<i>Ext</i>	<i>Extractum</i>	<i>Extract</i>
<i>h.s.</i>	<i>Hora somni</i>	<i>At bedtime</i>
<i>in d</i>	<i>In die</i>	<i>During daytime</i>
<i>i.c.</i>	<i>Inter cibos</i>	<i>Between meals</i>
<i>liq.</i>	<i>Liquor</i>	<i>Solution</i>
<i>M</i>	<i>Misce</i>	<i>Mix</i>
<i>Mist.</i>	<i>Mistura</i>	<i>Mixture</i>
<i>Mitt.</i>	<i>Mitte</i>	<i>Send</i>
<i>o.d.</i>	<i>Onus in die</i>	<i>Once a day</i>
<i>o.h.</i>	<i>Omni hora</i>	<i>Every hour</i>
<i>o.m.</i>	<i>Omni mane</i>	<i>Every morning</i>
<i>p.o.</i>	<i>Per os/per oral</i>	<i>By mouth</i>
<i>p.c./p.p.</i>	<i>Post cibos/cibum/ postprandial</i>	<i>After meals</i>
<i>p.r.n.</i>	<i>Pro re nata</i>	<i>As needed</i>
<i>Pulv</i>	<i>Pulvis</i>	<i>Powder</i>
<i>q.h.</i>	<i>Quaque hora</i>	<i>Every hour</i>
<i>q.i.d.</i>	<i>Quarter in die</i>	<i>Four times a day</i>
<i>q.o.d.</i>	<i>Quaque other die</i>	<i>Every Other/Alternate day</i>

Contd...

Contd...

Abbreviation	Latin	English
<i>q.d.</i>	<i>Quaque die</i>	<i>Every day</i>
<i>q.s.</i>	<i>Quantum sufficit</i>	<i>As much as required</i>
<i>Rx</i>	<i>Recipe</i>	<i>Take thou of (You take the following)</i>
<i>Ss</i>	<i>Semi, semis</i>	<i>One half</i>
<i>S</i>	<i>Sine</i>	<i>Without</i>
<i>s.o.s.</i>	<i>Si opus sit</i>	<i>If necessary</i>
<i>stat.</i>	<i>Statim</i>	<i>Immediately</i>
<i>t.i.d.</i>	<i>Ter in die</i>	<i>Three times a day</i>
<i>Tab</i>	<i>Tabelle</i>	<i>Tablet</i>
<i>Ung</i>	<i>Unguentum</i>	<i>Ointment</i>
<i>Vap</i>	<i>Vapor</i>	<i>Inhalation</i>

WEIGHTS AND MEASURES

MASS

1. METRIC SYSTEM

1 kilogram (kg)	= 1000 grams
1 gram (gm) (g)	= 1000 milligrams
1 milligram (mg)	= 1000 micrograms
1 micrograms (μ g)(mcg)	= 1000 nanograms
1 nanogram	= 1000 picograms
1 picogram	= 1000 femtograms
1 femtogram	= 1000 attograms

2. BRITISH SYSTEM/IMPERIAL SYSTEM

1 Pound (lb)	= 16 ounces	= 7000 grains
1 Ounce (oz)	= 437.5 grains	
1 Ounce (apothecary)	= 480 grains	
1 Drachm	= 60 grains	

3. RELATION BETWEEN METRIC AND IMPERIAL SYSTEM

1 Kg	= 2.205 pounds (lbs)
1 pound (lb)	= 0.4536 kg = 453.6 g

Practical PHARMACOLOGY

Simplified Practical Record Book

Salient Features

- This record book presents applicable practical activities in pharmacology.
- The book trains the students on terminology based on suffixes and sound-alike and spell-alike drug names.
- The book provides intelligent clinical questions.
- The book provides adequate space for students to actually write in their handwriting.
- The language is simplified for the students to understand concepts.
- There is a wide coverage of images of adverse drug reactions.
- The prescription guidelines are practically useful.
- The book contains innovative exercises and activities like puzzles, home medicine box activity, and museum activities.
- The book aims to train the students on essential drugs and drug schedules.
- The book provides dose calculations actually useful for a basic doctor.

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