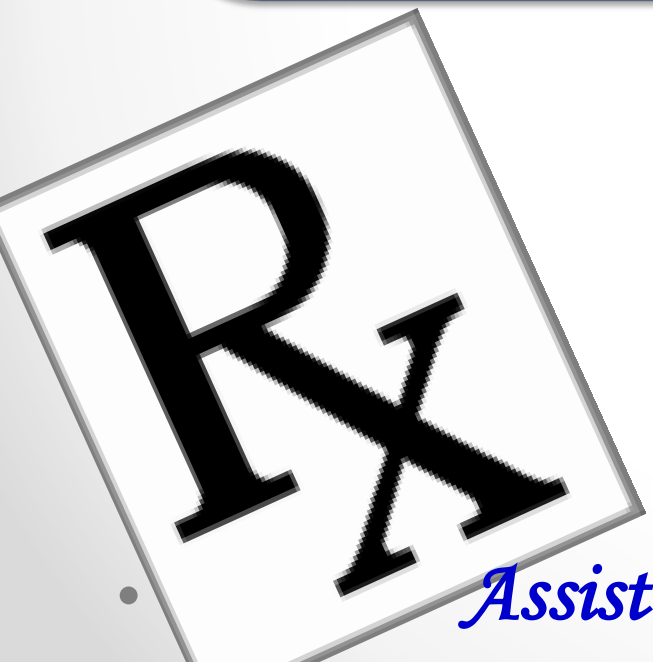
LECTURE 3:
Interpretation of prescription or medication orders.



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Contents

The Prescription

- A prescription is an order for medication issued by a physician, dentist, veterinarian or other properly registered medical health prescriber to the pharmacist, for the supply of a medicine, dressing or surgical appliance to a patient.

Importance of the Prescription

1. Means of communication between doctor and patient and follow up
2. Legal documentation
3. Record source
4. Trial for medical therapy

Abbreviations commonly used in prescriptions

Abbreviation	Term	Meaning
ad		Up to
a	ante ,	before
a.c.	ante cibos	Before meals
a.q	aqua	water
a.m		morning
b.i.d	bis in die	twice a day
C		with
dil.	dilutus	dilute
e.m.p		As directed
et.	et	and
ft.	fiat	Let it be made
garg.	gargarisma	A gargle
gtt.	gutta , guttae	drop , drops
h.s		At bed time
M.	misce	you mix
mist.	mistura	A mixture
mitt.	mitte	send
noct.	nocte	At night
omn.	omnis	Every , all

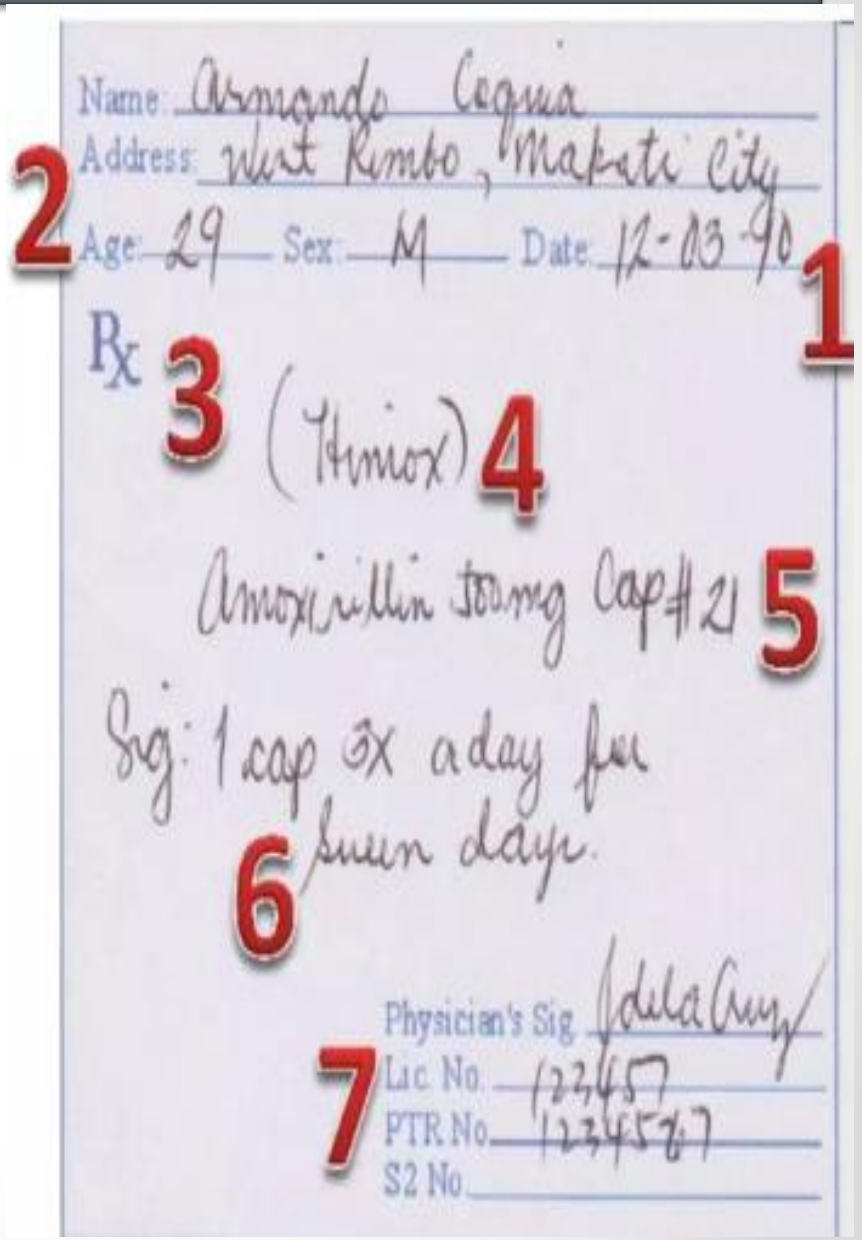
Abbreviations commonly used in prescriptions

omn.hor.	omni hora	Every hour
per diem	per diem	Per day
per os	per os	By mouth
p.c.	post cibum	After food
pro dos.	pro dose	For a dose
pro rect.	pro recto	rectally
p.r.n.	pro re nata	When required
pro.us.ext.	pro usu externo	For external use
pro.vag.	pro vagina	vaginal
q.l.	quantum libet	As much as you wish
q.s.	quantum sufficit	Sufficient quantity
q.h	quaque hora	Every hour
4.i.d. , q.i.d.	quarter in die	4 times a day
q.o.d		Every other day
s		without
sesq.	sesqui	one and half
sig.	signa, signetur	Write on lable
sol.	solutio	A solution
s.o.s	spiritus	If there is need
stat.	statim	immediately
t.i.d	ter in die	3 times a day

Prescription Parts:

The Prescription contains the following information

1. Date
2. Patient information
3. Superscription
4. Inscription
5. Subscription
6. Transcription
7. Signature of the prescriber : may be given as an official signature at the end of the prescription form.
8. Prescriber information



Prescription Parts

Patient's Name:

Address: (Sometimes Weight)

Age:

Date:

R_x → Superscription

Salicylamide 0.3g
Paracetamol 0.25g

Mix and make 12 capsules → Subscription

Signa: One capsule to be taken three times daily → transcription

Prescriber's Signature:

Prescription Parts: 1. Date

- Prescriptions are dated at the time they are written usually by the prescriber and when they are received and filled in the pharmacy.
- This is necessary for the prevention of misuse of prescription, especially the ones which contain narcotics and other drugs controlled by special laws and regulations.
- By the law in Egypt, no prescription order for controlled substances may be dispensed more than 5 days after the date prescribed.
- In case the date is not written then the Pharmacist should advice the patient to visit the doctor again.

Prescription Parts: 2. Patient information

- patient's full name (NOT nicknames or surnames) and address of the patient are necessary on the prescription for identification purposes.
- Name → helps the pharmacist to identify the correct Patients avoiding any chance of giving the medicine to a person other than the one it is dispensed for
- Age and weight and or body surface area of the patient are sometimes necessary in calculating the appropriate medication dose especially in prescription order written for infants and children and some time elderly.
- Sex/Gender of the patient also plays major role in prescription because dose of drugs may also vary based on the sex/gender of the patient (as their abilities to metabolize/ response towards drugs may vary in many cases).
- Named and addresses written illegible should be clarified on acceptance of the prescription.

Prescription Parts: 3. Superscription

- The superscription (R_x) mean direction to pharmacist.
- It directs the pharmacist to take the drug listed in number (4) in the quantities given to compound the medication.
- R_x = In the ancient times it is considered as a prayer to Jupiter the God of healing for the fast recovery of the patient.
- It is (R_x) derived from R abbreviation for the Latin word recipe = you take
- Today, the symbol is representative for both the prescription and pharmacy itself.

Prescription Parts: 4. The inscription

- The inscription is the body or the principal part of the prescription order.
- It contains a list of the prescribed ingredients.
- The name of each ingredient is written on a separate along with their quantities to be used in compounding the prescription.
- Today, most of the prescriptions are written for medications already prepared or prefabricated into dosage forms by industrial manufactures.
- In the complex prescription containing several ingredients the inscription can be divided into following parts:
  - Base (active medicament of therapeutic action)
  - Adjuvants (substances added to increase action of medicament/ its palatability)
  - vehicle (substance used to dissolve medicament/increase volume of preparation)

Prescription Parts: 5. Subscription

- The subscription: it contains directions (instructions) from the prescriber to the pharmacist regarding the type and compounding of the dosage form, along with the number of doses to be dispensed in a form suitable for use by the patient.
- The class of the preparation (mixture, capsules, ointment …. etc.) is noted and the number of doses to be prepared is indicated.
- It may include instruction regarding the flavour of the product, label, and quantity to be dispensed.
- Fiat: let them be made (dosage from).
- Mitte: send (number, of doses to be prepared)
- Example: Ft supp No xii (Make 12 suppositories).

Prescription Parts: 6. The transcription (Signa)

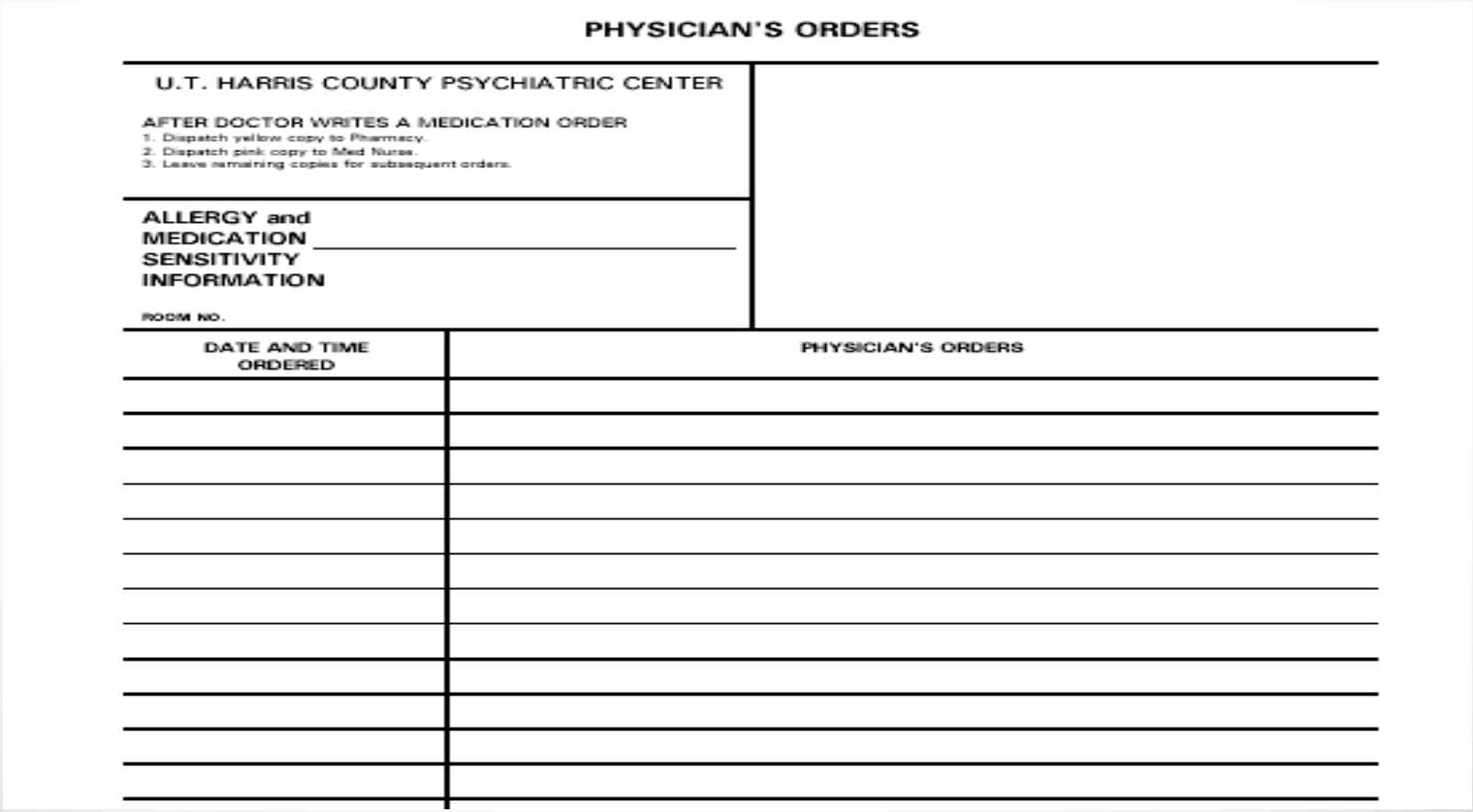
- Signatura: The prescriber provides the patient with the necessary instructions for the use and administration of medication specified in the prescription..
- Signa is a Latin word which means write or let be written.
- The instructions may include:
  - The quantity to be taken
  - The frequency of administration
  - The mode of administration
  - The special instructions such as dilation .
  - Renewal instructions تعليمات التجديد
  - It also should include the specifications like how many times it can be renewed (especially in incase of narcotic/other habitat forming drugs)
- The directions in the signa commonly are written using abbreviated forms of the English or Latin terms or a combination.
- Examples: Tabs ii q 4h (Take 2 tablets every four hours)

Prescription Parts: 7. Prescriber information

- The Prescriber’s Name, Address, signature and Regd.no.
- This helps in preventing the use of fake drugs.
- Regd.no is of utmost importance in prescription containing narcotic drugs.
- A prescription can be said valid only if the prescriber information like name, degree, address and his License number is written on it along with handwritten name or signature.
- The printed information clarifies the prescriber’s name when it is signed illegible (غير مقروء), and his address and telephone number facilitates communication, as may be required.

Medication order

- It is a prescription form in hospitals and other institutions, what are some difference from the prescription.
- Medication orders are order for drug or non drug product that are intended for use by patient on an institutional



PHYSICIAN'S ORDERS

U.T. HARRIS COUNTY PSYCHIATRIC CENTER

AFTER DOCTOR WRITES A MEDICATION ORDER
1. Dispatch yellow copy to Pharmacy.
2. Dispatch pink copy to Med Nurse.
3. Leave remaining copies for subsequent orders.

ALLERGY and MEDICATION SENSITIVITY INFORMATION

ROOM NO.

DATE AND TIME ORDERED	PHYSICIAN'S ORDERS

Medication order

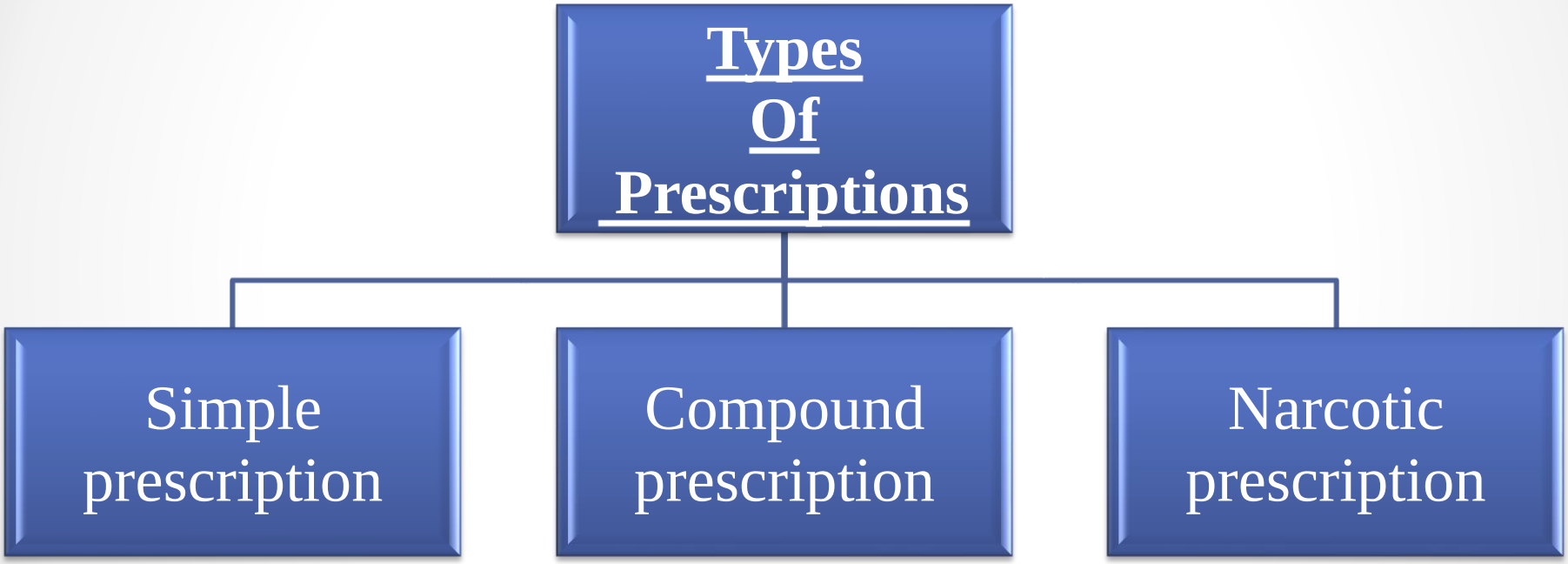
A typical medication order generally includes:

1. Patient information (e.g., name, age, home address, the patient's identification number and known allergies.
2. Date and time the order was written.
3. Prescriber information (name, and signature).
4. Name of the product (proprietary, nonproprietary or chemical).
5. Strength, dose and route of administration.
6. Direction for the pharmacist (compounding and labeling).
7. Instruction for administration including schedule and duration of administration.
8. Any other relevant practitioner instruction regarding patient care (Laboratory test, diet and allergic reaction).

Example of medication

City hospital **Athens, ga 30600**	**Patient name:** **thompson, linda** **Address:** **2345 oak circle** **City state:** **athens, ga** **Age/sex:** **35 female** **Physician:** **j. Hardmer** **Hosp. No:** **900612345** **Service:** **medicine** **Room:** **220 east**	
Physicain's orders		
Date	**Time**	**Order**
06/04/2008	1200	1. Propranolol 40 mg po qid (oral 4 times/day)
06/04/2008	1200	2. Furosemide 20 mg po q am (oral every morning)
06/04/2008	1200	3. Flurazepam 30 mg at prn (when needed)
		Hardmer, md

The order shown above are typed. Under normal circumstances, these are written by the physician in ink.


Types
Of
Prescriptions
Simple prescription
Compound prescription
Narcotic prescription

TYPES OF PRESCRIPTIONS

1. Simple prescription:

- It is the prescription in which the inscription part consisting only of the active ingredients or one product specific to treat a certain disease (as the prescription mentioned before)

2. Compound prescription:

- Compound prescription is written for a medicine that consists of two or more ingredients.
- It requiring the pharmacist to mix different ingredients together in the exact strength and dosage form
- The prescription contains four portions:

1. Base
2. Adjuvant
3. Corrective
4. Vehicle

Example for compound prescription

1. Patient: name……..age……..address……..
2. Date:
3. R/
4. Chloral hydrate 8 gm base
5. Sodium bromide 10 gm adjuvant
6. Syrup of raspberry 22.5 ml corrective
7. Water to 60 ml Vehicle
8. Fiat: mixture
9. Sign: 4 ml every 4 hours
10. Signature of prescriber

Example for compound prescription Cont…

- **Base**: is the main active ingredient with the main therapeutic effect. (Chloral hydrate is hypnotic)
- **Adjuvant**: it aids the base in its action and act at the same time, it enhances its activity (sodium bromide has a sedative action)
- **-Corrective**: the substance added to qualify the action of the basis and the adjuvant.

- used to make other drug less irritating or to serve as flavoring agent, e.g., mask the odor and taste.
- **Vehicle**: (water) is added to dilute the active ingredient to a reasonable dose and to adjust the volume so that the patient can take the dose by house hold measures

3-Narcotic Prescription

- is a prescription contain controlled drugs with narcotic activity e.g. morphine
- **It must include:**

– the name, address, registration number and signature of the prescriber.

– The date when written

– The name and address of the patient.

- It must be written in ink or typewriter.
- The quantity of the narcotic drug must be written in words and numbers.

– In pharmacy, it must include the date on which the prescription was filled, the name, address and registry number of the pharmacy.

- It should be kept in a separate file and cannot be refill.

Example for Narcotic prescription

1. Patient's name……..age…….address……
2. Date…….
3. R/
4. Codeine phosphate 20 (twenty) mg
5. Fiat: Capsule, Mitte 16 (sixteen) Caps.
6. Signa: One Capsule Four times a day
7. Prescriber's name:
   Address:
   Registry no.:
   Signature: Dr……..

Handling the Prescription

It includes the following:

- Receiving the Prescription
- Reading and Checking the Prescription
- Numbering and Dating
- Preparing the Prescription
- Packaging
- Labeling
- Rechecking
- Delivering and patient counseling
- Recording and filling
- Pricing the prescription

1-Receiving the Pprescription:

- Patient hands prescription directly to the pharmacist ⟶ **enhance patient-Pharmacist relationship and** facilitates the gathering of essential disease and drug information from the patient.
- Ask the patient to complete a brief health and medication history

⟶ **To establish patient database in the pharmacy's computer**

- It is important to determine if the patient's medications are provided through insurance coverage or whether the patient will pay for it.
- Pricing prescription before dispensing especially for expensive drugs to avoid subsequent questions concerning the charge.

2-Reading and Checking the Prescription:

- The pharmacist should first read the prescription completely and carefully to make sure that there is no doubt to the ingredients or quantities.
- The pharmacist should determine the compatibility of the prescribed drug with other drugs being taken by the patient and also consider if any drug-food or drug-disease interactions may exist.

To identify possible interactions:

- Prescription computer software programs.
- Also, references may be used such as USP Dispensing information (USP DI)).

- The same, if the patient has known allergy to the drug prescribed, the pharmacist should consult the prescriber for alternative medication to give the best therapeutic effect

2-Reading and Checking the Prescription:

- Pharmacists are frequently confronted in their interpretation of the prescription order with the names of the drugs that look alike or sound alike, these similar names are source of errors.
- Knowledge of the patient's medical problems and diagnoses can often provide the pharmacist with insight into which of look –alike or sound-alike drugs is intended for the patient.

E.g. Ritodrine (uterine relaxant) & Ranitidine

- Incase of strength or dosage form Omissions, pharmacist should never elect to dispense the usual dose or dosage form but should consult the prescriber.
- The amount and frequency must be noted carefully and checked. The USP DI provides usual doses and dosage ranges for many drugs in use.

3-Numebering and Dating:

- It is necessary to number the prescription order and to place the same number on the label.
- This serves to identify the bottle or package and to connect it with the original order for reference or renew the prescription.
- Put the dating of the prescription on the date filled to determine the appropriate refill frequency, patient compliance, and as an alternate means of locating the prescription order in case of lost the prescription number by the patient.

4-Preparing the Prescription:

- After reading and checking the prescription order, the pharmacist should decide the procedure to be followed in compounding the ingredients.
- Most call for dispensing medication already prefabricated into dosage forms by pharmaceutical manufactures
- In filling prescriptions with prefabricated products, the pharmacist should check the manufacturer's label, comparing it with the prescription order, before and after filling the order to make certain of its correctness.
- when the prescription requiring compounding is received, the pharmacist should take into consideration the chemical and the physical compatibility of the ingredients, the proper order of mixing, the need for special techniques, and the mathematical calculations required.

- Once deciding the procedure, the pharmacist assembles the necessary materials transferring it to another location away from the work station to avoid error in compounding.
- Compounding is essential in preparing drug formulations in dosage forms or strengths that are not commercially available.
- The differences in the appearance of the prescription when refilled possible create doubt and apprehension (تخوف) in the mind of the patient.

Compounding of the prescription:

1. Calculation
2. Storage Requirements
3. Container selection
4. Label

1. Calculation:

- Check any calculation for the quantity of medicine

Example:

R/ chloral hydrate 9 gm

Sod. Bromide 12 gm

Syrup of raspberry 22.5 ml

Water to 60 ml

- Fiat: mixture
- Mitte: 100 ml
- Signa: 5 ml every 4 hours

Example:

Each item × 1.666

R/ chloral hydrate 15 gm

Sod. Bromide 20 gm

Syrup of raspberry 37.5 ml

Water to 100 ml

- Fiat: mixture
- Mitte: 100 ml
- Signa: 5 ml every 4 hours

2- Checking the storage Requirements:

- Most of the prescription containers usually are available in colorless but many drugs are photosensitive (degraded in presence of light) therefore need amber containers.
- Some drugs should be protected from atmospheric gases as Oxygen which support microorganisms growth and CO2 which shifts pH, therefore many need tightly dosed containers.

3- Selecting the container: (Packaging)

- In filling a prescription, pharmacists may select a container form among various shapes, sizes, mouth openings, colors, and composition.
- Selection is base primarily on the type and quantity of medication to be dispensed and the method of its use.

Containers generally used in the pharmacy are

- Round vials, for solid dosage forms as capsules and tablets.
- Prescription bottles, used for dispensing liquids of low viscosity.
- Dropper bottles: ear, nasal and eye drops.
- Pots or collapsible tubes: ointment and creams.
- Wide-mouth bottles, used for bulk powders, large quantities of tablets or capsules, and viscous liquids that cannot be poured readily from the narrow necked standard prescription bottles.
- Shifter-top containers, used for powders to be applied by sprinkling.
- Container closure is as important as the container itself.

4- Writing the label:

- Direction for the use of medicine should be clear and written before dispensary on a suitable size label.
- The name, address and telephone number of the pharmacy must appear on the label.

On the label the following should be written:

- The prescription number, date of dispensing, patient name, the prescriber's name
- Direction for use

– Quantity to be taken
– Amount to be used
– Frequency of administration
– Route of administration

For example,

- take one tablet/ (4) times/ day before meals and at bedtime would be preferred to One 4 times a day.

Auxiliary labels:

- are used to emphasize important aspects of the dispensed medication, including
  - its proper use, handling, storage,
  - refill status, and necessary warnings or precautions.

1. Shake the bottle (mixtures, suspension and emulsions)
2. For external use only
3. Keep out of reach of children
4. Not be swallowed in large amount (gargle and mouth wash)
5. For rectal use only
6. For vaginal use only
7. For the eye
8. For the ear
9. Keep in a cool place
10. Use as a gargle

N.B. White labels for oral rout and Red labels for external use preparations.