

Prescription

A **medical prescription** (℞) is an order (often in written form) issued by a qualified health care professional (e.g. physician and dentist) to a pharmacist or other therapist for a treatment (medicine or device) to be provided to their patient.

There are two broad legal classifications of medications:

- The medications which can be obtained only by prescription which are referred as *prescription* drugs or *legend* drugs.
- The medications which may be purchased without a prescription, which are termed non prescription drugs or over-the-counter (OTC).

COMPONENTS OF PRESCRIPTIONS

Generally, a prescription consists of the following parts (see the sample prescription in [Figure 3.1](#)).

- (1) Prescriber's name, degree, address and telephone number. In the case of prescriptions coming from a hospital or a multicenter clinic, the hospital or clinic's name, address and telephone numbers appear at the top. In such a case, the physician's name and degree would appear near his/her signature.
- (2) Patient's name, address, age, and the date of prescription.
- (3) The ***Superscription***, which is represented by the Latin sign. (℞). This sign represents "take thou" or "you take" or "recipe." Sometimes, this sign is also used to denote the pharmacy itself.
- (4) The ***Inscription*** is the general content of the prescription. It states the name and strength of the medication, either as its brand (proprietary) or generic (nonproprietary) name. In the case of compounded prescriptions, the *inscription* states the name and strength of active ingredients.

(5) The **Subscription** represents the directions to the dispenser and indicates the type of dosage form or the number of dosage units. For compounded prescriptions, the subscription is written using English or Latin abbreviations. A few examples are provided as follows:

- M. et ft. sol. Disp vi (Mix and make solution. Dispense six)
- Ft. ung. Disp ii (Make ointment and dispense two)
- Ft. cap. DTD xii (Make capsules and let twelve such doses be given)

(6) The **Signa**, also known as **transcription** represents the directions to the patient. These directions are written in English or Latin or a combination of both. Latin directions in prescriptions are declining, but since they are still used, it is important to learn them. A few examples are present:

- ii caps bid, 7 days (Take two capsules twice daily for seven days)
- gtt. iii a.u. hs (Instill three drops in both the ears at bedtime)
- In rect. prn pain (Insert rectally as needed for pain)

(7) The prescriber's signature.

(8) The refill directions, in which the information about how many times, if authorized, a prescription can be refilled is provided.

(9) Other information, such as "Dispense as Written."

Types of prescription

- 1- **Simple prescription**: Those written for a single component or prefabricated product and not requiring compounding or admixture by the pharmacist.
- 2- **Compound or complex prescription**: Those written for more than a single component and requiring compounding.
- 3- **e-prescriptions (electronic prescription)**: The use of electronic means for the generation and transmission of prescriptions is used and accepted in some countries.
- 4- **In-patient prescription**: a *medication order form* used in the hospital setting. In addition, other forms may be used within a hospital by specialized units such as infectious disease, cardiac care, pediatrics, and others.

Drug-specific forms also may be used, as for heparin dosing, electrolyte infusions, and morphine sulfate in patient-controlled anesthesia.

- 5- Narcotic prescription: contains a narcotic substance or other habit forming drugs. It must contain in addition to the contents of the simple prescription, the address of the patient, the narcotic registry number of the prescriber. Such prescription should be written by ink or typewriter. The quantities of the narcotic substance must be written in words and numbers.

LABEL ON THE CONTAINER

It is a legal requirement to affix a prescription label on the immediate container of prescription medications. The pharmacist is responsible for the accuracy of the label. It should bear the name, address, and the telephone number of the pharmacy, the date of dispensing, the prescription number, the prescriber's name, the name and address of the patient, and the directions for use of the medication. Some states require additional information. The name and strength of the medication, and the refill directions are also written frequently. The label for a sample prescription is in Figure 3.2.

Henry Huxtable, M.D.
61-40 Flushing Avenue
Monroe, LA 71208
Phone No. 555-1234

Name : Lisa Taylor Age: 70
Address: 96 Havana Blvd., FL 31207 Date: 2/28/96

Rx

Cafergot Suppositories
#12

Sig: In. rect, i HS, prn pain.

REFILL None

DAW

HHuxtable
DEA # AD 7973142

The sample prescription in (Figure 3.1)

NORTHEAST PHARMACY

169 Hillside Avenue
Monroe, LA 71206 555-0342

R # 123456 Date: 2/28/96

Taylor, Lisa
96 Havana Blvd.

Insert one suppository rectally at
bed time, as needed for pain.

Cafergot suppositories # 12

H. Huxtable, M.D.

FIGURE 3.2. Sample label.

COMMON LATIN TERMS AND ABBREVIATIONS

Studying from the copy.

PRESCRIPTION PROBLEMS

A pharmacist or a nurse has to perform some simple mathematical computations related to the dosage form strength, the quantity of medication, dates for the refills, and the medication costs, etc. As a few examples, very often, the prescribing authority writes the dosage regimen for a particular strength of a medication but doesn't write the total units of the medication. The pharmacist or the nurse then calculate the number of dosage units and dispenses them. Sometime the medication available in the pharmacy is of a different strength than the one prescribed. The number of dosage units and the directions for administration have to be modified by a few calculations. The following are a few examples of the prescription problems.

Example 1:

R/

Amoxicillin 125 mg/5 mL

Sig: ii tsp tid, 7 days

How many fluidounces of amoxicillin suspension would the patient receive?

$2 \times 5 \text{ mL} = 10 \text{ mL}$, each dose

$10 \times 3 = 30 \text{ mL}$ per day

$30 \times 7 = 210 \text{ mL}$ for seven days

Answer: 7 fluidounces

Example 2:

R/

HCTZ 50 mg

#XC

Sig: i tab q AM for HPB

Re: 1

If this prescription was filled on April 15, when would the refill be due?

Ninety tablets were dispensed with instructions to take one tablet every morning for high blood pressure. The medication would last for 90 days.

Answer: the refill would be due on July 15

Example 3:

R/

Keflex caps 500 mg
Sig: i cap bid. 10 days

If the pharmacist has only 250 mg capsules in the inventory, how many capsules should be given to the patient?

20 capsules of 500 mg can be substituted with 40 capsules of 250 mg.

Answer: 40 capsules

Practice Problems

R/

Insulin 100 units/cc
#10 cc
Sig: 10 units bid, sc

How many days would the medication last?

R/

Dr. Zogg's otic drops
15 cc
Sig: 0.1 cc au tid, prn pain

If a calibrated dropper delivers 40 drops per 2 mL, how many drops should the patient instill in each each every time?

R/

Aspirin gr v
Caffeine gr i
Lactose qs
Ft. cap. DTD #xx

R/

Chloral hydrate elixir
Sig: i dose of 250 mg, po hs

How many teaspoonfuls of chloral hydrate with a strength of gr viiss/5 mL should be administered to the patient and at what time of day?

R/

Erythromycin liquid (125 mg/tsp)
Sig: 250 mg qid po 10 days

If the medication was dispensed from a bottle containing one pint, how many milliliters of medication would be left in the original container?

R/

Atropine Sulfate 0.3 mg
Sig: Administer intramuscularly

If the available atropine vial label reads gr 1/150 per mL, how many milliliters of the injection should be administered?

ERRORS AND OMISSIONS

Prescription errors are unintentional mistakes in the prescription, transcription, dispensing, and administration of medications. Some prescription errors include wrong patient, incorrect medication, inappropriate dose, wrong time, wrong route of administration, and wrong rate of administration.

To prevent this, it is a good practice to follow the “five rights principle” as a check: the right medication—in the right dose—to the right patients—at the right time—by the right route of administration.

The following guideline may be helpful to a pharmacist for filling prescriptions:

- (1) Make sure all the information required to fill the prescription is present. A systematic, step-by-step checking would be very helpful.
- (2) Make sure that the information is correctly transferred to the prescription label.
- (3) Make sure that the correct drug is being dispensed, whether generic or brand.

A few examples of prescription errors are provided as follows:

Example 1:

Jack Ramos, M.D.
911 Hollywood Avenue
Detroit, MI-71208
Phone No. 555-1234

Name : John Doe Age: 70
Address: 96 Havana Blvd., MI-71208 Date: 2/28/96

Rx

Keflex 500 mg

Sig: i cap qid, 7 days

REFILL None

DAW _____

JRamos
DEA # AD 7973142

NORTHEAST PHARMACY

169 Hillside Avenue
Monroe, LA 71206 555-0342

R # 123456 Date: 2/28/96
Doe, John
911 Hollywood Ave
Take one capsule four times a day for
seven days
Cephalexin Caps 500 mg #40
Refill 1 J. Ramos, M.D.

Errors

1. Patient's address is wrong.
2. Number of capsules = $4 \times 7 = 28$ and not 40.
3. Prescription shows no refill, and the label shows one refill.

Example 2:

Pat Moody
96 Alonzo Drive
Miami, FL-71208
Phone No. 555-1234

Name : Baby Starks Age: 6 mo.
Address: 96 Havana Blvd., FL-71208 Date: 2/29/96

R_x

Vantin 100 mg

Sig: ss $\bar{3}$ bid, 7 days

REFILL None

DAW _____

PMoody

NORTHEAST PHARMACY
169 Hillside Avenue
Monroe, LA 71206 555-0342

R # 123456 Date: 2/29/95
Starks, Baby
96 Havana Blvd.
Take one-half tablet twice daily for seven
days
Vantin 100 mg tablets
Refill 1 P. Moody

Errors

1. Wrong date on the label.
2. The doctor meant Vantin suspension (100 mg/5 mL) which is clear from the *signa*. Tablets are a wrong choice for an infant.
3. *Signa* should be one-half teaspoonful twice daily for seven days.
4. No refills. The label shows one.

Table 4.2 ▼ SELECTED ABBREVIATIONS, ACRONYMS, AND SYMBOLS USED IN PRESCRIPTIONS AND MEDICATION ORDERS^{a,b}

ABBREVIATION (LATIN ORIGIN ^c)	MEANING	ABBREVIATION (LATIN ORIGIN ^c)	MEANING
Prescription Filling Directions		pt.	pint
aa. (<i>ana</i>)	of each	qt.	quart
ad (<i>ad</i>)	up to; to make	ss or \overline{ss} (<i>semissem</i>)	one half
disp. (<i>dispensatur</i>)	dispense	tbsp.	tablespoonful
div. (<i>dividatur</i>)	divide	tsp.	teaspoonful
d.t.d. (<i>dentur tales doses</i>)	give of such doses	Signa/Patient Instructions	
ft (<i>fiat</i>)	make	a.c. (<i>ante cibos</i>)	before meals
M. (<i>mice</i>)	mix	ad lib. (<i>ad libitum</i>)	at pleasure, freely
No. (<i>numero</i>)	number	admin	administer
non rep. or NR (<i>non repatur</i>)	do not repeat	A.M. (<i>ante meridiem</i>)	morning
q.s. (<i>quantum sufficit</i>)	a sufficient quantity	aq. (<i>aqua</i>)	water
q.s. ad (<i>quantum sufficiat ad</i>)	a sufficient quantity to make	ATC	around the clock
Sig. (<i>Signa</i>)	write (directions on label)	b.i.d. (<i>bis in die</i>)	twice a day
Quantities and Measurement		c or \overline{c} (<i>cum</i>)	with
BSA	body surface area	d (<i>die</i>)	day
cm ³	cubic centimeter or milliliter (mL)	dil. (<i>dilutus</i>)	dilute
f or fl (<i>fluidus</i>)	fluid	et	and
fl $\overline{3}$ or $\overline{f3}^d$	fluid dram	h. or hr. (<i>hora</i>)	hour
$\overline{fl3ss}$ or $\overline{f3ss}^d$	half-fluidounce	h.s. (<i>hora somni</i>)	at bedtime
g	gram	i.c. (<i>inter cibos</i>)	between meals
gal	gallon	min. (<i>minutum</i>)	minute
gtt (<i>gutta</i>)	drop	m&n	morning and night
I.U. or IU ^b	international unit(s)	N&V	nausea and vomiting
lb (<i>libra</i>)	pound	noct. (<i>nocte</i>)	night
kg	kilogram	NPO (<i>non per os</i>)	nothing by mouth
L	liter	p.c. (<i>post cibos</i>)	after meals
m ² or M ²	square meter	P.M. (<i>post meridiem</i>)	afternoon; evening
mcg	microgram	p.o. (<i>per os</i>)	by mouth (orally)
mEq	milliequivalent	p.r.n. (<i>pro re nata</i>)	as needed
mg	milligram	q (<i>quaque</i>)	every
mg/kg	milligrams (of drug) per kilogram (of body weight)	qAM	every morning
		q4h, q8h, etc.	every ___ hours
		q.i.d. (<i>quarter in die</i>)	four times a day
		rep. (<i>repetatur</i>)	repeat
		s (<i>sine</i>)	without
		s.i.d. (<i>semel in die</i>)	once a day
		s.o.s. (<i>si opus sit</i>)	if there is need; as needed
mg/m ²	milligrams (of drug) per square meter (of body surface area)	stat. (<i>stamin</i>)	immediately
MIU ^b	million international units	t.i.d. (<i>ter in die</i>)	three times a day
mL	milliliter	ut dict. (<i>ut dictum</i>)	as directed
mL/h	milliliters (of drug administered) per hour (as through intravenous administration)	wk.	week
		Medications	
mOsm or mOsmol	milliosmoles	APAP	acetaminophen
oz.	ounce	ASA	aspirin
		AZT	zidovudine

Table 4.2 ▼ SELECTED ABBREVIATIONS, ACRONYMS, AND SYMBOLS USED IN PRESCRIPTIONS AND MEDICATION ORDERS^{a,b}
(Continued)

ABBREVIATION (LATIN ORIGIN ^c)	MEANING	ABBREVIATION (LATIN ORIGIN ^c)	MEANING
EES	erythromycin ethylsuccinate	D5NS	dextrose 5% in normal saline (0.9% sodium chloride)
HC	hydrocortisone	D5W	dextrose 5% in water
HCTZ	hydrochlorothiazide	D10W	dextrose 10% in water
MTX	methotrexate	elix.	elixir
NTG	nitroglycerin	inj.	injection
Clinical		NS	normal saline
BM	bowel movement	½NS	half-strength normal saline
BP	blood pressure	oint or ungt. (<i>unguentum</i>)	ointment
BS	blood sugar	pulv. (<i>pulvis</i>)	powder
CHD	coronary heart disease	RL, R/L or LR	Ringer's Lactate or Lactated Ringer's
CHF	congestive heart failure	sol. (<i>solutio</i>)	solution
GERD	gastrointestinal reflux disease	supp. (<i>suppositorium</i>)	suppository
GI	gastrointestinal	susp.	suspension
GFR	glomerular filtration rate	syр. (<i>syrupus</i>)	syrup
GU	genitourinary	tab. (<i>tabletta</i>)	tablet
HA	headache		
HBP	high blood pressure		
HRT	hormone replacement therapy		
HT or HTN	hypertension	Routes of Administration	
IOP	intraocular pressure	CIVI	continuous (24 hour) intravenous infusion
MI	myocardial ischemia/infarction	ID	intradermal
OA	osteoarthritis	IM	intramuscular
Pt	patient	IT	intrathecal
SOB	shortness of breath	IV	intravenous
TPN	total parenteral nutrition	IVB	intravenous bolus
URI	upper respiratory infection	IV Drip	intravenous infusion
UTI	urinary tract infection	IVP	intravenous push
		IVPB	intravenous piggy back
		NGT	nasogastric tube
Dosage Forms/Vehicles		p.o. or PO (<i>per os</i>)	by mouth
amp.	ampul	rect.	rectal or rectum
cap.	capsule	SL	sublingual
D5LR	dextrose 5% in lactated Ringer's	SubQ or SC	subcutaneously
		Top.	topically
		V or PV	vaginally

^a Abbreviations that are considered most likely to appear on a prescription are in boldface.