

Basic Terminology in Pharmaceutical Sciences and Pharmaceutical Practice

„Pharmacy“

is a **health profession** concerned with:

- discovery,
 - development,
 - production,
 - distribution,
 - dispensing
- 
- of drugs

Pharmacy is the profession.

Pharmacy is hereby a place where most pharmacists practice the profession of pharmacy.

There are 2 basic categories:

- A. Community Pharmacies
- B. Hospital Pharmacies

A. Community pharmacies

- **Community pharmacies usually consist of a retail storefront, with a dispensary where medications are stored and dispensed.**
- **It is community pharmacy where the dichotomy of the profession exists—health professionals who are also retailers.**

B. Hospital Pharmacies

- **Hospital pharmacies usually stock a larger range of medications, including more specialized medications**
- Traditionally, hospital pharmacies have also prepared various preparations such as saline, and other drug infusions; but there has been a trend to outsource these functions to specialized pharmaceutical companies (Pharmaceutical enterprises).

The central Term in Pharmacy is “The Drug”

The drug is
a chemical or biological used in:
the diagnosis,
the treatment, or
the prevention and the prophylaxy of
disease.

„Remedy“ or „medicine“

Something that consistently helps treat or cure a disease. From the Latin "remedium" meaning that which heals again.

Medication (or treatment) that cures a disease or disorder or relieves its symptoms.

The **medication** is an act or process of treating with medicine (often administration of medicine).

„Drug product“

A finished dosage form, for example, tablet, capsule, solution, etc., that contains an active drug ingredient generally, but not necessarily.

„Drug Substance“

A drug substance is a component of a drug product, which constitutes an active ingredient.

„Dispensing“

Dispense: To prepare and give out (medicines).

Provision of drugs or medicines as set out properly on a lawful prescription.

A prescription can only be filled, the drugs supplied, by a registered pharmacist.

„Dispensing“

Dispensing is often regulated by governments into three categories:

Over-the-counter (OTC) medications, which are available in pharmacies without special restrictions,

Behind-the-counter (BTC), which are dispensed by a pharmacist without needing a doctor's prescription, and

Prescription only medicines (POM), which must be prescribed by a licensed medical professional, usually a physician.

Drugs, medicines, remedies

are nowadays mostly dispensed as

„**mass-produced drugs**“

MPD.

**They are manufactured in large quantities
often by or as if by assembly-line
techniques
(batches).**

Shelf-life of a drug product

The expiration dating period of a drug product is defined as the time at which the average drug characteristic (e.g. potency) remains within an approved specification after manufacture.

„Pharmacotherapy“
**Treatment of disease through the use
of drugs.**

**There are two basic ways (kinds) of
pharmacotherapy:**

- A. Allopathy**
- B. Homeopathy**

A. Allopathy

A method of treating disease with remedies that produce effects different (antagonistic) from those caused by the disease itself.

Allopathy is the usual method of treating disease with remedies.

B. Homeopathy

- **Homeopathy is the antonym of Allopathy.**
 - **It is based on the administration of minute doses of a drug that in massive amounts produces symptoms in healthy individuals similar to those of the disease itself.**

The practice of homeopathy

was popularised by the physicians and pharmacists worldwide, but **with different emphasis.**

It has become popular among some physicians in European and Asian nations and is widely used by the public in over-the-counter medications.

In connection with the
pharmacotherapy

we speak about:

- pharmacokinetics and
- pharmacodynamics

- Pharmacokinetics is the study of the concentration of a drug and its metabolites in the body over time
- Pharmacodynamics is the study of drug effect versus concentration, or **what effect a drug has on the body.**

Drug utilization.

Drug utilization is defined by WHO in 1977 as

„the marketing, distribution, prescription, and use of drugs in a society, with special emphasis on the resulting medical, social and economic consequences“.

The pharmacotherapy must be
seen in conjunction with:

A. „Pharmacoepidemiology“

B. „Pharmacoeconomy“

A. The pharmacoepidemiology is the study of the utilization and effects of drugs in large numbers of patients.

The discipline of pharmacoepidemiology maintains a close watch on the therapeutic drugs commonly used in society.

B. Pharmacoeconomy has a close relationship to the discipline of pharmacoepidemiology.

It concerns the analyses of cost effectiveness, cost benefit, and cost utility.

They are incorporated in pharmacoepidemiological research.

Classifications of drugs

Drugs may be classified in many different ways:

- **according to mechanism of action,**
- **effects,**
- **or even legal status(ATC).**

Drugs are commonly considered capable of participating in one or more of the following
general kinds of therapy:

A. Curative or specific therapy:

Treatment directed **toward eradication** of one or more of the agencies etiologic to the patient's condition.

B. Palliative (or symptomatic) therapy:

treatment directed **only toward relief of the patient's symptoms**, toward making the patient feel better without necessarily altering the natural course of the disease.

C. Supportive therapy:

treatment directed toward maintaining the patient's physiological or functional integrity until more definitive treatment can be carried out, or until the patient's recuperative powers function to obviate the need for further treatment.

Many drugs can provide supportive therapy; even in a single patient supportive therapy can be provided from agents of such different classes (indication (medication) classes) as sedatives, diuretics, antihypertensives, etc.

D. Substitutive or replacement therapy:

treatment directed toward supplying
a material normally present in the
body, but absent in a specific
patient because of disease, injury,
congenital deficiencies, etc.

E. Restorative therapy:

treatment directed at **rapid restoration of health**, usually regardless of the nature of the original disease;

restorative therapy is most frequently given **during convalescence**.

**From the point of view of the
origin of drugs there are:**

**- Original drugs (or
ethical drugs)**

- Generic Drugs

„Original drugs“
(ethical drugs):

**drugs that are available only
with written instructions from
a physician to a pharmacist
(therefore often as
prescription-only drugs)**

„Generic Drugs“

Generic pharmaceuticals
("Generics")

**Drug formulations of identical composition with respect to the
active ingredient,**

**i.e., drugs that meet current
official standards of **identity,**
purity, and **quality** of **active
ingredient.****

Generic Drug refers to a drug that is **chemically equivalent** to its *brand name* counterpart.

Often becomes available after **patent protection** for the *brand name* product has expired.

The producing companies can sell the products more cheaply.

A generic drug is a drug sold or prescribed under the non-proprietary name of its active ingredients.

The name of the active ingredient is established by a government or international body.

(INN)

„Generic Substitution „

Generic substitution is the dispensing by a pharmacist of a generic drug in place of the brand-name entity prescribed. Every state now permits generic substitution under certain circumstances. Regulations vary considerably, however, from state to state.

„Essential drugs“

are drugs indispensable for the rational treatment of the vast majority of diseases in a given population. Experience has shown that about 30 to 40 drugs are sufficient for primary health care in many countries, the rest being required for secondary and tertiary health care.

The World Health Organization (WHO) is the **creator of the list** containing the recommended essential drugs.

In 1977 WHO developed the Model List of Essential Drugs to encourage rational drug use.

Over the years, this document has been revised regularly and now serves as a guide for more than 120 countries.

TABLE 3.5 Percentage of population with regular access to essential drugs

Country	< 50%	50%–80%	80%–95%	> 95%
Afghanistan	x			
Bahrain				x
Cyprus				x
Djibouti		x		
Egypt			x	
Iran, Islamic Republic of			x	
Iraq		x		
Jordan			x	
Kuwait				x
Lebanon			x	
Libyan Arab Jamahiriya				x
Morocco		x		
Oman				x
Pakistan		x		
Qatar				x
Saudi Arabia				x
Somalia	x			
Sudan	x			
Syrian Arab Republic			x	
Tunisia			x	
United Arab Emirates				x
Yemen, Republic of	x			

Source: Progress of WHO countries in developing national drug policies and in revising essential drugs lists. Geneva, World Health Organization, 1998 (WHO/DAP/98.7).

„Orphan drugs“

This is a group of rarely used drugs, administered in the treatment of rare diseases. These drugs are indisputably needful and their consumption is very low, therefore their production is unattractive from the economic aspect.

ATC Classification of drugs

Since 1982, the Anatomical
Therapeutic Chemical (**ATC**)
classification system has been
maintained by the WHO.

This classification is widely used
(not only) in European
countries.

In the ATC Classification System

there are drugs divided into different groups according to the organ or system on which they act and their chemical, pharmacological and therapeutic properties.

Drugs are classified into groups
at 5 different levels

1st level - At the broadest level, drugs are divided into one of the following **14 anatomical groups**. The first level of the code is based on a letter e.g. "B" for Blood and blood forming organs:
(1 digit)

Level	Main Group	Level	Main Group
A	Alimentary tract & metabolism	L	Antineoplastic & immunomodulating agents
B	Blood & blood forming organs	M	Musculo-skeletal system
C	Cardiovascular system	N	Nervous system
D	Dermatologicals	P	Antiparasitic products
G	Genito urinary system & sex hormones	R	Respiratory system
H	Systemic hormonal preparations	S	Sensory organs
J	Antiinfectives for systemic use	V	Various

**2nd level - is either
a pharmacological or
therapeutic subgroup**

**(e.g., "B03" for Antianemic preparations).
(2 digits)**

3rd level

is a chemical or therapeutic or
pharmacological subgroup

(e.g., "B03A" for Iron Preparations)

(1 digit)

4th level

is a chemical or therapeutic or pharmacological subgroup.

This is the level used to count “number of different drugs” as it is the level which aggregates drugs just above their descriptive chemical substance, (e.g., B03AA" for Iron, bivalent, oral preparations).

A count of an individual's drugs at the 4th level of ATC gives the user a categorical option with which to stratify and then describe pharmaceutical users. It approximates a measure of comorbidity.

(1 digit)

5th level

is the subgroup for the chemical substance (e.g., "B03AA07" Ferrous sulphate).

(2 digits)

In other words
an ATC code of a drug
has five levels
that are described by seven
digits.

The Drug Identification is based on ATC

IDENTIFICATION [\[sommaire\]](#)

CAS : 19774-82-4

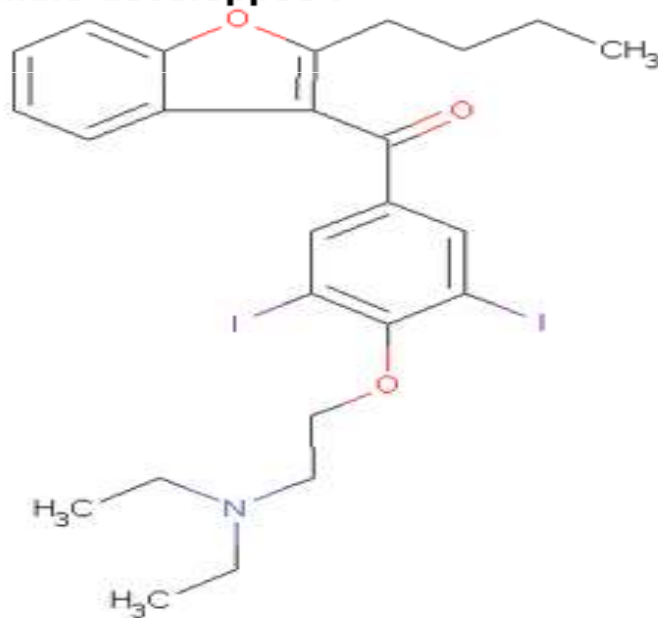
Classe **ATC** : CO1BD01

Formule brute : C₂₅ H₂₉ I₂ NO₃, HCl

Nom chimique :

(2-butyl-3-benzofuranyl)[4-[2-(diéthylamino)éthoxy]-3,5-diiodophényl]méthanone chlorhydrate

Formule développée :



(source : base chemIDplus)

The Drug Utilisation Studies

are based on the sorting according to the
ATC classification system.

Defined Daily Doses (DDD)

are employed **as units of measurements**.

„Pharmacopoeia“

is an authoritative publication
designating the properties, action, use,
dosage, and standards of strength and
purity of drugs.

Health, Illness, Disease



Definitions of Illness and Disease

- **Illness** is a reaction to a change in one's physical state. It is very individual and has social and physical connotations and is influenced by one's age, gender, education, experience, culture, mental state, and resources
- Disease is defined professionally, usually by a physician. It is the basis for medical and pharmaceutical science and practice as well as therapy. It is also the framework for the organization of the health care system and its resources.

International Classification of Diseases

There is the standardized system of codes
describing diagnoses, developed and
maintained by the WHO –

ICD

International Statistical Classification of
Diseases

Confusions on disease and illness

- One can have a disease and not be ill,
- One may be ill and not have a disease,
- One may have both disease and illness.

WHO Definition of Health

“Health **is a state** of complete physical, mental, and social well being, and not merely the absence of disease or infirmity”

Health is determined by interaction of interrelated variables

- genetics or biological determinants
- behavior (diet and lifestyle habits)
- pre-and postnatal environments
(physical, biologic, economic, and social)
- the health care system

Health Behavior

Activity for the purpose of
prevention of disease or detecting
disease in an asymptomatic stage

Disease (Illness) Behaviour

Activity by one
who feels ill
for the purpose of defining the state
of health
and discovering suitable remedy.

Thanks for your attention

To be continued:

**Terms with which you should be
professionally familiar.**