

DEFINITION- According to WHO essential drugs are defined as, " the medicines that satisfy the priority healthcare needs of the population."

SELECTION CRITERIA-

1. Prevalent disease of the country.
2. Evidence on efficacy and safety.
3. Financial economy of the country
4. Stability
5. Appropriate dosage form

- First Essential Drug List was released in 1977 with 208 medicines.
- India's first EDL was released in 1996 with 300 medicines.

Need of EDL –

1. To supervise efficacy and safety of drugs
2. To make drugs easily available and affordable for everyone
3. Limited health budgets of country
4. Irrational prescriptions
5. Drug competition in market
6. Easy storage and stability
7. Proper training of health professionals

Examples- Paracetamol, Quinine, Amoxicillin, Ampicillin, Chloramphenicol

- The list is revised after every two years duration.
- latest 21st EDL - 2019 containing 460 medicines.

Essential Drug concept = Basic Introduction

Essential = That must be available all time.

Explⁿ = W.H.O. compiled a list of drug that are required to meet the primary healthcare need of majority of population.

Note:- Should available all time in = Quantity + D. forms

① List may be different for country & must be updated.

Guiding principle -

① Use generic name where possible, if not give brand name

② clear & accurate information of - Supply, storage, distribution

Selection - ① Disease prevalence ② Efficacy ③ Safety

④ cost effective ⑤ Dosage form suitability

Advantages -

① Greater coordination with health care department.

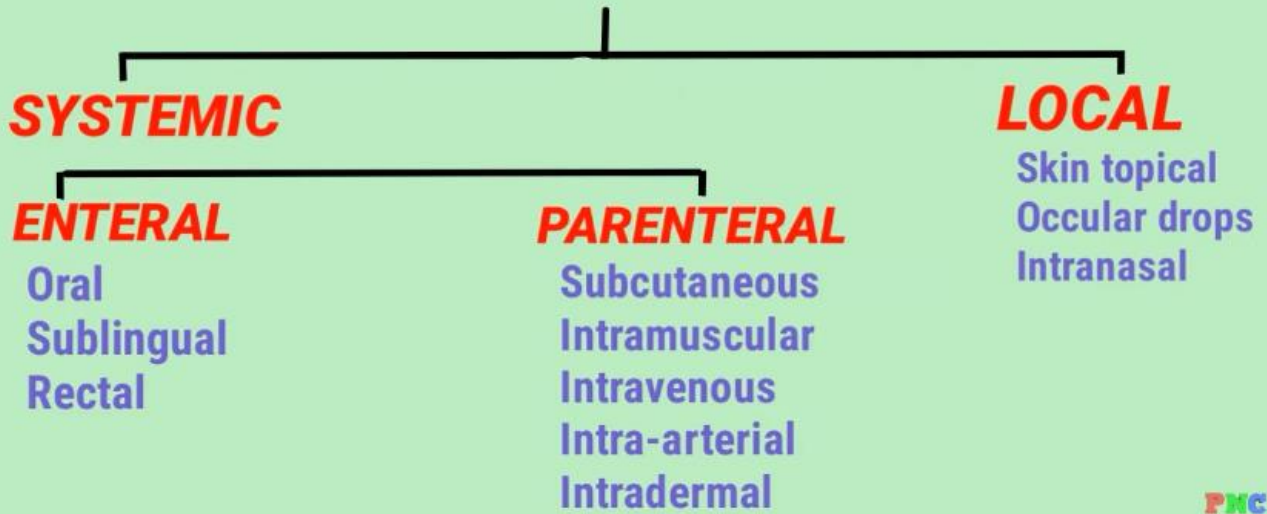
② Development of national formulary. ③ Better stock

GPAT = India's 1st EDL = in 1996 = 300 drugs.

Route of drug administration

Route of drug administration is the medium in which any drug is introduced into the body for its action.

Route Of Drug Administration



ENTERAL ROUTE

1. Oral Route: It is the most common of drug administration. It is mostly used for the neutral drugs. It may be in the form of tablets, Capsules, Syrup, Emulsions or powders.

Advantage

- i) Easy to take
- ii) It is the cheapest available route
- iv) No physician required

Disadvantage

- i) Less amount of drug reaches the target tissue
- ii) Slow absorption
- iii) It might cause gastric irritation
- iv) Some of the drug destroyed by gastric juices, e.g; insulin

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2. Sublingual Route: Sublingual route involves tablets placed under the tongue or between cheeks. The drug should be lipid soluble and small.

Advantage

- i) Rapid absorption takes place
- ii) Drug is dissolved easily
- iii) Drug enters the blood directly



Disadvantage

- i) This method is inconvenient
- ii) Irritation of the mucous membrane might occur
- iii) Person may swallow the drug

3. Rectal Route: Certain irritant and unpleasant drugs can be put into rectum as suppositories or retention enema for systemic effect. This route can also be used when the patient is having recurrent vomiting or is unconscious. Diazepam, Indomethacin, Paracetamol, and few other drugs are sometimes given rectally.

Advantage

- i) This route is preferred if drug is irritant
- ii) This route is preferred in unconscious patients
- iii) This route avoid nausea or vomiting

Disadvantage

- i) This route drug is generally not acceptable by the patients due to ambarrassment

ii) Slow absorption

iii) This route have 50% first pass metabolism

PARENTERAL ROUTE

It refers to any route of administration that do not involve drug absorption via GI tract.

Advantage

- i) It is rapid
- ii) It is useful for unconscious patients
- iii) Bioavailability is 100%

Disadvantage

- i) It is painful
- ii) It is less safe
- iii) This method is expensive

1. Subcutaneous Route: Subcutaneous route might beⁱ used for the arm, forearm, thigh and subscapular space.

Advantage

- i) Absorption is slow and constant
- ii) It is hygienic

Disadvantage

- i) It might lead to abscess formation
- ii) Absorption is limited by blood flow

2. Intramuscular Route: Intramuscular route might be applied to the buttock, thigh and deltoid. The volume used is 3ml.

Advantage

- i) Absorption is rapid than supcutaneous route
- ii) Irritative substance might be given

Disadvantage

- i) This route might cause nerve or vein damage

3. Intravenous Route: In this route fluid is directly delivered into a vein.

Advantage

- i) Immediate action takes place
- ii) Absorption is not required
- iii) This route is preferred for unconscious patients

Disadvantage

- i) This method is more risky
- ii) This is not retreat
- iii) Inflammation of surrounding tissue might result

4. Intra-arterial Route: In this route drugs are administered into an artery. Through this route anticancer drugs are given for localised effects.

Advantage

- i) Bioavailability is 100%
- ii) High concentration of drug can be administered at the desired site of action

Disadvantage

- i) It is painful
- ii) It is less safe
- iii) It is expensive

5. Intradermal Route: In this route drugs are administered into the dermal layer of the skin just beneath the epidermis, usually small amount of liquid is used, e.g., 0.1ml solution is used.

Advantage

i) Slow absorption (tuberculosis & allergy tests)

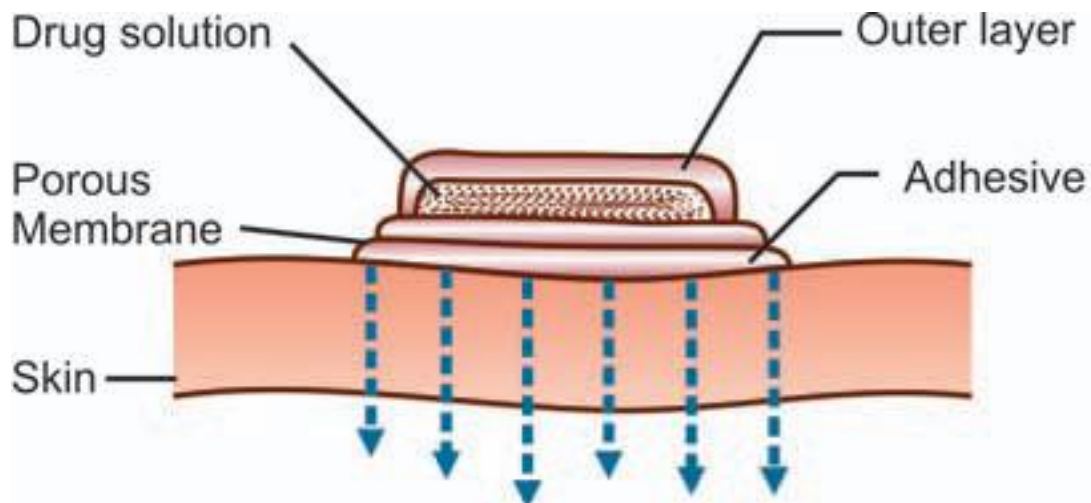
Disadvantage

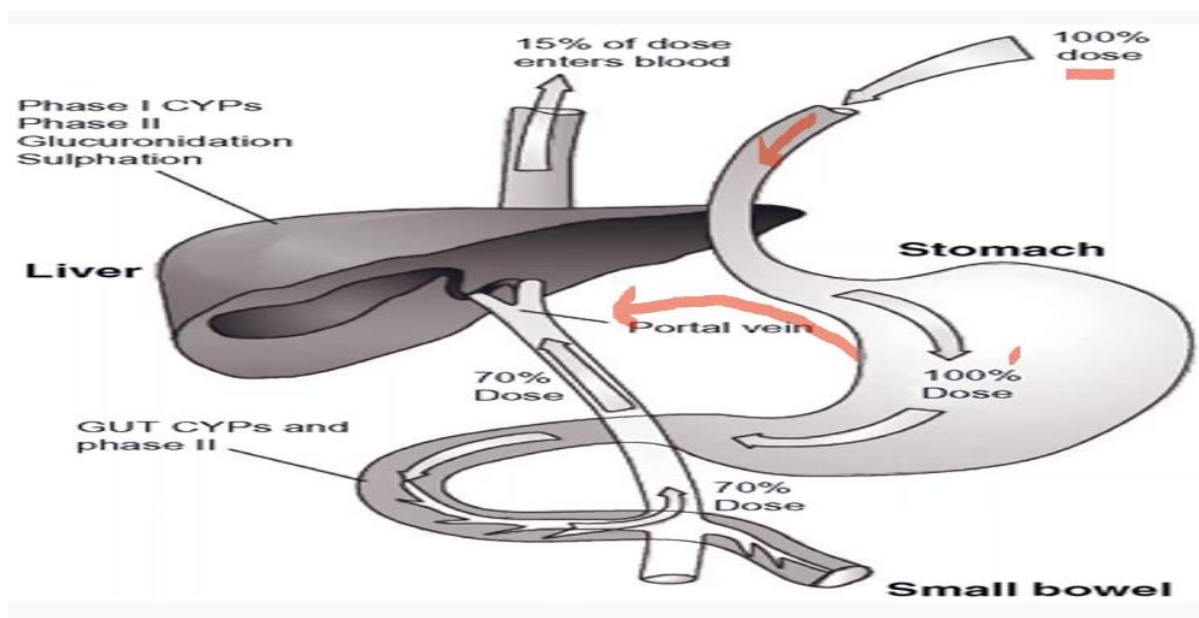
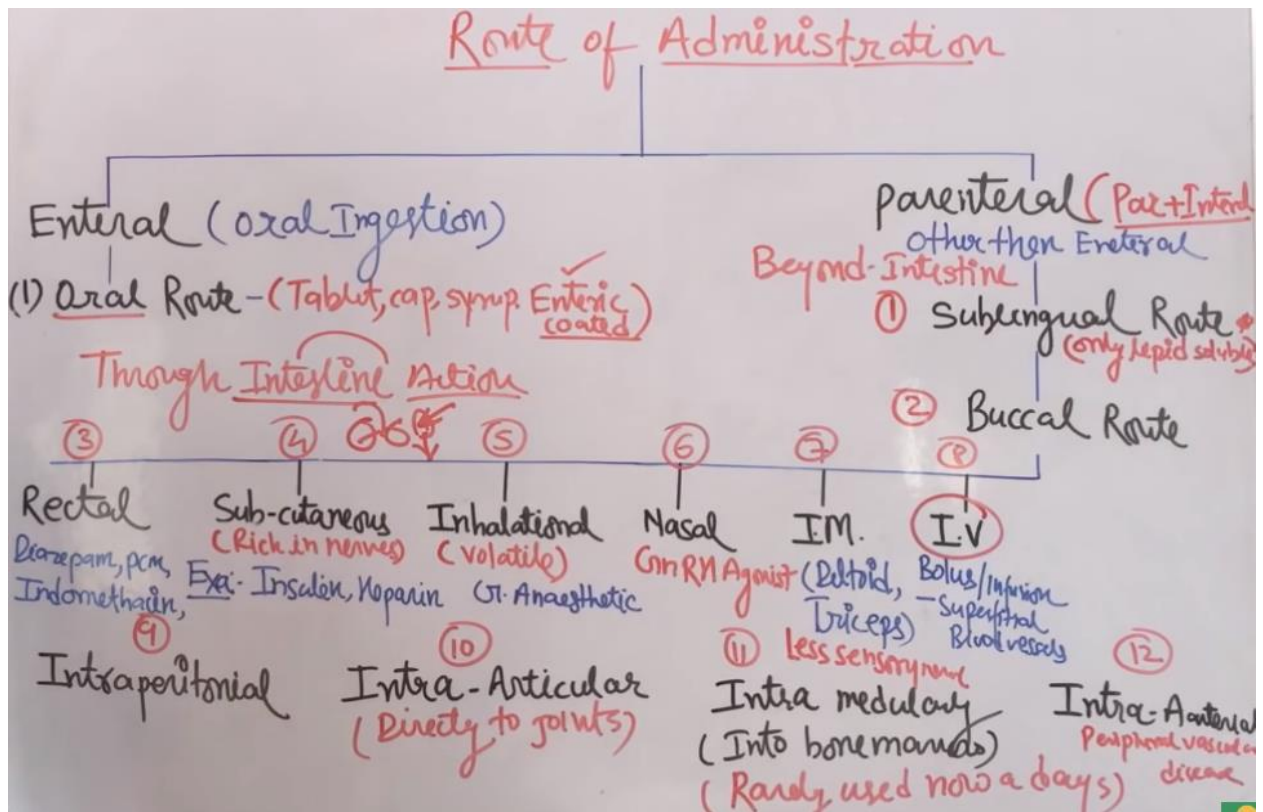
i) Amount of drug administered must be small

ii) It is expensive

Transdermal

Highly lipid soluble drugs can be applied over the skin for slow and prolonged absorption, e.g. nitroglycerine ointment in angina pectoris.





Tolerance Tolerance is the requirement of higher doses of a drug to produce a given response. Tolerance may be natural or acquired.

- **Natural tolerance** The species/race shows

less sensitivity to the drug, e.g. rabbits show tolerance to atropine; Black race are tolerant to mydriatics.

- *Acquired tolerance* develops on repeated administration of a drug. The patient who was initially responsive becomes tolerant, e.g. barbiturates, opioids and nitrites produce tolerance.