• **Medication (drug):** is substance administered for the diagnosis, cure, treatment, or relief of a symptom or for prevention of disease.

• **Prescription:** the written direction for preparation and administration of the drug.

• **Pharmacology:** is the study of the effect of the drug on living organisms.

• **Pharmacy:** is the art of preparing, compounding, and dispensing drug.
Effect of drugs

- Therapeutic effect (desired effect): is the primary effect intended that the reason is the drug prescribed

- Side effect (secondary effect) one that unintended, May harmful or potentially harmful

- Adverse effect: more severe side effect, may justify the discontinuation of drug

- Drug toxicity: result from over dose, ingestion of a drug for external use and buildup the drug in the blood
• Drug allergy: is an immunological reaction to a drug.

• Anaphylactic reaction: severe allergic reaction usually occur immediately after the administration of the drug.

• Drug tolerance exist in a person who has unusually low physiologic response to drug and how required increase in the dosage to maintain therapeutic affect.
• Drug interaction: occur when the administration of drug before, at the same time as, or after another drug alter the effect of one or both drug.

• Iatrogenic disease: disease caused by unintentionally by medical thereby.

• Cumulative effect: is the increase response to repeated dosage of drug. Rate of administration exceeds the rate of metabolism.

• Idiosyncratic effect: unexpected.
• Drug misuse: is the improper use of common medication in way that tend to do acute or chronic toxicity (e.g. laxcutive, antacid, vitamins, headache, cough and cold medication are often self prescribed)

• Drug abuse: is an inappropriate intake of substances, either continually or periodically. Lead to drug dependence: physiologic or psychological.
Action of drug in the body

- **Absorption**: is the process by which a drug passes into the bloodstream.

- **Distribution**: transportation of drug from its site of absorption to site of action.

- **Biotransformation** (detoxification or metabolism): is the process by which a drug is converted to a less active form, most often occurring in the liver.

- **Excretion**: is the process by which metabolites of a drug are eliminated from the body.
Factor affecting medication action

- Developmental action: pregnancy, newborn, older adult etc...
- Gender: related to distribution body fat and fluid and hormonal differences.
- Cultural ethnic and genetic factor.
- Diet.
- Environment: e.g. temperature.
- Psychological factor.
- Illness and disease.
- Time of administration.
Rote of administration

- oral
- sublingual
- buccal
- parental:
  - subcutaneous
  - intramuscular
  - intradermal
  - intravascular
- topical:
  - dermatological preparation
  - installation and irrigation
  - inhalation
Type of medical order

• **stat order**: immediately and only once

• **single order**: one time order, once at specific time.

• **standing order**: may or may not have termination date, e.g. (ampicillin 500mg 1 by 3).

• **prn order**: as needed
Factor influencing the choice of the rote

- desired action of therapy (local or systemic)
- speed of absorption
- nature of the therapeutic agent
- condition of the patient
essential part of the drug order

• full name of the client.
• date and time the order is writing.
• name of the drug.
• dose of the drug.
• frequency off administration.
• rote of the administration.
• signature of the person writing the order.