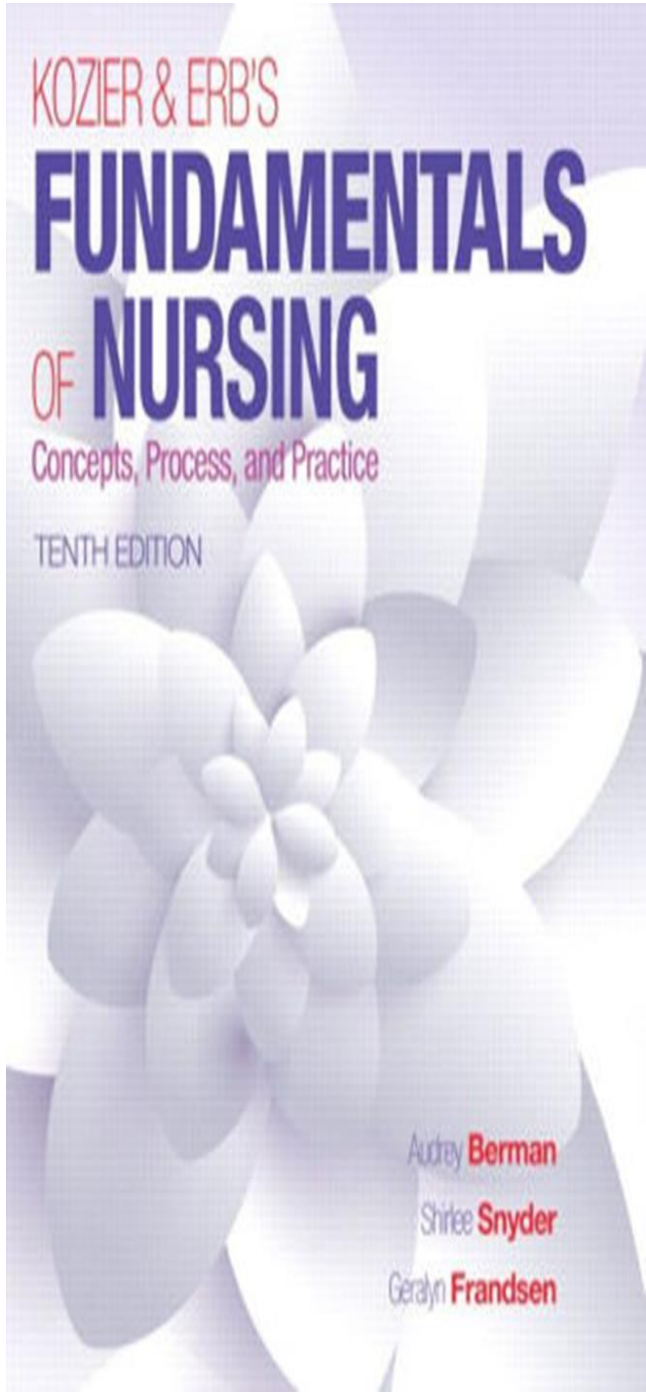
Unit5
Diagnostic testing

-Blood tests

-Specimen collection and testing

-Urinary Elimination

-Fecal Elimination



BLOOD TESTS

- It is a diagnostic tests that can provide valuable information about hematologic system and many other body systems.
- A venipuncture (puncture of a vein for collection of a blood specimen) can be performed by various members of the health care team such as laboratory technician, nurses, physician
- Specimens provide information to diagnose health care problems and also provides a measure of the responses to therapy.

BLOOD TESTS:
1- Complete Blood Count (CBC)

- CBC specimens taken of venous blood
- CBC includes hemoglobin and hematocrit measurements, erythrocyte (red blood cells) count, red blood cell, leukocyte (white blood cell) count, and a differential white cell count.
- CBC is a basic screening test and one of the most frequently ordered blood tests

BLOOD TESTS:
2- Serum Electrolytes

- It is routine screening test for electrolyte and acid–base imbalances. Such as serum tests are for sodium, potassium, chloride, and bicarbonate ions.
- **Blood levels urea and creatinine**, are used to evaluate renal function.
- **Serum Osmolality** is a measure of the solute concentration of the blood. Includes are sodium ions, glucose, and urea (BUN). Normal values are 280 to 300 mOsm/kg. An increase in serum osmolality indicates a fluid volume deficit; a decrease reflects a fluid volume excess.
- **Capillary Blood Glucose:** blood specimen is taken to measure the current blood glucose level

BLOOD TESTS:
2- Serum Electrolytes

- **Arterial Blood Gases:** blood specimens taken from arteries radial, brachial, or femoral. It is important to prevent hemorrhage by applying pressure to puncture side for 5 to 10 minutes after removing needle.
- **Blood Chemistry** serum electrolytes, enzymes (lactic dehydrogenase [LDH], creatine kinase [CK], aspartate aminotransferase [AST], and alanine aminotransferase [ALT]), serum glucose, hormones such as thyroid hormone, and other substances such as cholesterol and triglycerides.

BLOOD TESTS:
2- Serum Electrolytes

- **Metabolic Screening**

✓Newborns are routinely screened for congenital metabolic conditions.

✓Phenylketonuria (PKU) and congenital hypothyroidism , sickle cell disease and galactosemia.

✓Screening involves collecting peripheral venous blood (via a heel-stick) on prepared blotting paper .

✓Discovered abnormalities allow the provider and parents to plan early care (e.g., special diets for children with PKU) that can prevent long-term complications.

SPECIMEN COLLECTION AND TESTING

- The nurse often collects specimens of body fluids, such as urine, blood, stool, sputum, and wound drainage

Nursing responsibilities associated with specimen collection include the following:

- Provide client comfort, privacy, and safety.
- Explain purpose and procedure of specimen collection.
- Aseptic technique is used in specimen collection to prevent contamination
- Note relevant information on the laboratory requisition slip, for example, medications the client is taking that may affect the results
- Transport the specimen to laboratory promptly. Fresh specimens provide more accurate results.
- Report abnormal laboratory findings to the health care provider in a timely manner consistent with the severity of the abnormal results

Sputum Specimens

- Sputum is the mucous secretion from the lungs, bronchi, and trachea.
- It is important to differentiate it from saliva, the clear liquid secreted by the salivary glands in the mouth, sometimes referred to as “spit.”
- Healthy individuals do not produce sputum.
- Clients need to cough to bring sputum up from the lungs, bronchi, and trachea into the mouth in order to expectorate it into a collecting container.
- Obtaining a sputum specimen by use of pharyngeal suctioning, should be performed by the nurse
- Best time for sputum specimen is early-morning

Reasons for Sputum specimens collection :

a. culture and sensitivity to identify a specific microorganism and its drug sensitivities.

b. cytology to identify the origin, structure, function, and pathology of cells to identify lung cancer .

c. acid-fast bacillus (AFB),

d. To assess the effectiveness of therapy.

Throat Culture

- A sample is collected from the mucosa of the oropharynx and tonsillar regions using a culture swab.
- The sample is then cultured and examined for the presence of disease-producing microorganisms.
- Obtaining a throat culture is an invasive procedure that requires the application of scientific knowledge and potential problem solving to ensure client safety.
- Thus it is best for the nurse to perform this procedure.