8.3.4 Collection of urine specimen:

8.3.4.1 Method of collecting single urine specimen :

Single urine specimen means the amount of urine voided at a time. Usually the morning specimens are collected. The amount of 100-120 ml of urine will be sufficient for the usual tests.

After cleaning the genital, the client passes urine into clean urinal or a clean kidney tray or directly in to specimen bottle, taking care not to spill the urine on the out side of the container.

8.3.4.2 Method to collect Midstream specimen for culture:

Ask the client to clean the genital area with soap and water then rinse in water alone. In female clients the labia are separated for cleaning and kept apart until the urine had been collected. In male client, the foreskin should be retracted and the glans penis is cleaned before the collection of the urine.

The client begins to void in to the toilet, commode or bed pan. Than the client stops the stream of urine, the sterile container is positioned and continues to void in to the container. When enough urine has been voided, for specimen, the client stops the stream again; the container is removed and then finishes voiding in the original receptacle.

8.3.4.3 Method of collecting 24 hours urine specimen:

24 hours urine specimen means to collect all the urine voided in 24 hours. The collection of urine begins at 6AM and discard the whole urine. All the subsequent voiding should be measured and collected in the bottle and labelled. Continue to collect till morning. Ask the client to void at 6 -AM on the next day and add it to the previously collected.

8.3.4.4 Method of collecting urine specimen from unconscious clients and children:

In male babies or unconscious male clients, take a test tube, a barrel of syringe or nirodh or condom with rubber tubing and is attached to the penis. It is kept in place by adhesive tapes. In female attach a wide mouthed container or a funnel with rubber tubing to the vulva by means of a T binder. The rubber tubing is connected to a bottle and the urine is collected in the bottle.

8.3.5 Method of collecting sputum specimen:

Water proof disposable sputum cups or wide mouthed containers are used to collect the sputum specimen. The client should be given the container and is instructed to raise the material from the lungs and not simply expectorating the saliva or discharges from the nose or throat. The sputum should be collected before brushing the teeth and the food. Mouth can be rinsed with plain water, not any antiseptic mouth washes.

8.3.6 Method of collecting stool specimen:

Water proof disposable sputum cups or wide mouthed containers are provide with necessary instructions. The client passes stool in a clean bedpan. A small amount of stool is removed with a stick or spatula and is placed in the container. Discard the stick in the waste bin.

Nursing function for specimen collection

1. Complete lab Request
2. Place the specimen is appropriate place for pick up
3. Document specimen sent and anything unusual about the appearance of specimen.
4. Labell the patients details on the containers.

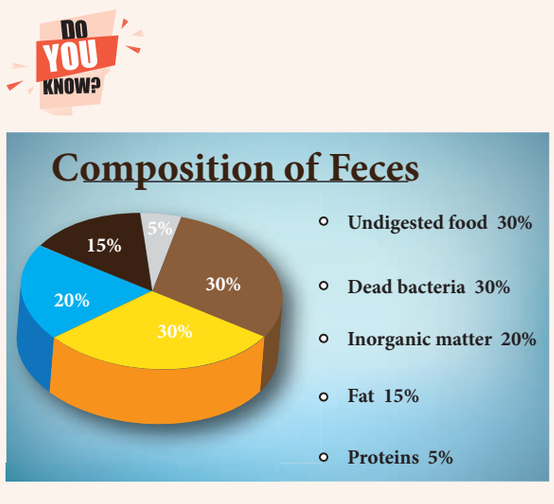
8.3.6.1 Collecting Stool Specimen for Routine Examination:

Definition

Collection of a small quantity of stool sample in a container for testing in the laboratory.

Purpose

To test the stool for normalcy and presence of abnormalities.



Articles

1. A Clean specimen container.
2. A spatula for putting the specimen into the container.
3. Dry bed-pan (for helpless patients). Additional bedpan for rinsing and cleaning.
4. Laboratory requisition form.
5. Clean gloves.
6. Waste paper (for wrapping used spatula).
7. A pitcher of water (for helpless patient).and Tissues / towel

Procedure

Sl.No	NURSING ACTION	RATIONALE
1	Check the physician's order and 'Nursing Care Plan'.	Obtains specific instruction and information
2	Identify the patient.	Helps to perform the right procedure for the right patient.
3	Explain to patient the procedure and make clear what is expected of him/ her.	Aids in proper collection of specimen.
4	Give the labelled container and spatula to the patient with instructions. i. To defecate into clean dry bedpan. Not to contaminate specimen with urine.	
5	Torn gloves	

Sl.No	NURSING ACTION	RATIONALE
6	For helpless patient: assist patient on to the clean bedpan	
7	Leave him with instructions	
8	When done, remove and keep aside the bedpan after placing the second one for cleansing.	
9	Collect about 2cm of formed stool or 20 to 30ml of liquid diarrheal stool	
10	Once the specimen is collected send it to lab with the appropriate requisition forms.	
11	Wash and replace the reusable articles	
12	Dispose off the used spatula wrapped in waste paper.	Prevents contamination
13	Wash and dry hands.	Prevents cross contamination.
14	Record information in the patient's charts.	

Special Considerations

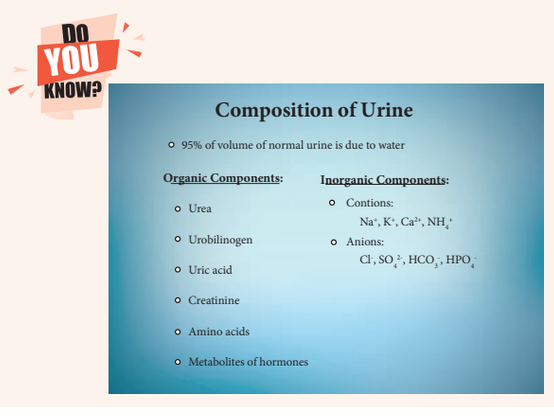
1. Send specimen to be examined for parasites immediately, so that parasites may be observed under microscope while viable, fresh and warm.
2. Inform if bleeding hemorrhoids or hematuria is present.
3. Postpone test if woman has menstrual periods, until three days after it has ceased.
4. Consider that intake of folic acid, anticoagulant, barium, bismuth, mineral oil, vitamin C, and antibiotics may alter the results.
5. Use two bedpans for helpless patient- one for collecting specimen and another for cleaning.

8.4 Urine Analysis

8.4.1 Test for sugar - benedict's test

Benedict's test is used as a simple test for reducing sugars. A reducing sugar is a carbohydrate possessing either a free aldehyde or free ketone functional group as part of its molecular structure. This includes all monosaccharides (eg. glucose, fructose, galactose) and many disaccharides, including lactose and maltose.

Benedict's test is most commonly used to test for the presence of glucose in urine. Glucose found to be present in urine is an indication of Diabetes mellitus



8.4.2 Equipments

Benedict's solution (fresh; certainly not more than 3 months old), Dropper, Test-tube, Test-tube holder. Spirit lamp, Match box, Kidney tray, containers.

Quality checking of the Benedict's solution

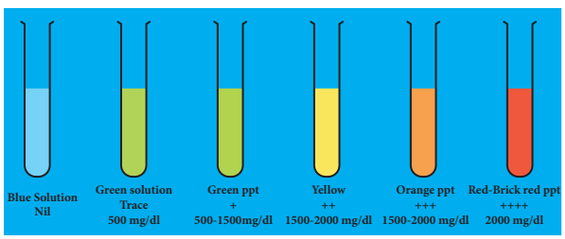
Benedict's solution is blue in color. In order to check purity of Benedict's solution take 5 ml of Benedict's solution in test tube and heat it. If it does not change color, it means, it is pure. Spirit lamp, Match box, Kidney tray, Container.

8.4.3 Procedure

- Take 5 ml (one teaspoon) of Benedict's solution in the test-tube.
- Holding the test-tube with the holder, heat it over a spirit lamp till the Benedict's Solution boils without overflowing.
- Drop 8 to 10 drops of urine into the boiling Benedict's solution.
- After again boiling the mixture, let it cool down.
- While cooling, the mixture changes color.
- Observe the color change and precipitate formation and analyze the test result

8.4.4 Result interpretation

The colour of the mixture serves as a guide to the amount of sugar in the urine :



(ppt – precipitate)

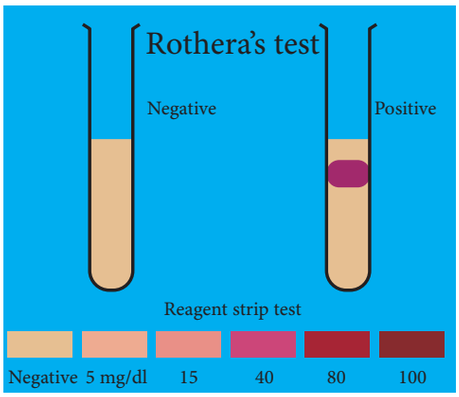
8.4.5 Test For Albumin

- Fill three-fourth of a test tube with filtered urine (filtering removes pus if present).
- See the reaction of the urine is acidic. If found alkaline, add one drop of acetic acid and make it acidic.
- Heat the upper third of the urine over sprit lamp and allow it to boil.
- A cloud may appear either due to phosphate or albumin.
- Add acidic acid drop by drop in to the test tube.
- If the urine is still cloudy it indicates the presence of albumin.
- If it becomes clear it indicates the presence of phosphates.
- No albumin is presence in the normal urine.
- If the urine is highly acidic or highly alkaline, the reading will be false.

8.4.6 Test for Acetone

- Take 5 ml of urine in a test tube and saturate it with ammonium sulphate.
- Add a small crystal of sodium nitroprusside and mix well.
- Slowly run along the side of the test tube liquor ammonia to form a layer.
- Immediate formation of a purple permanganate colored ring at the junction of the two fluids indicates a positive test

Glucose monitoring



8.4.7 Special points

- Keep reagent tables in a cool, dry place at a temperature below 86^0 F(30^o C).
- Do not refrigerate the reagent tablets and strips.
- Keep the container tightly closed.
- Do not use discolored or outdated tablets or strips.

8.4.8 Test For Bile Salts (Hey's Test)

- Take a test tube, half full of urine.
- Sprinkle sulphur powder on the surface of the urine.
- If the powder sinks down to the test tube, it indicated the presence of bile salts.
- This is because, bile salts reduce the surface tension of the urine and allows the sulphur powder to sink down.

8.4.9 Test for Bile Pigments

- Fill three-fourth of a test tube with urine.
- Add iodine drops along the sides of the test tube, so as to form the layer on the surface of the urine.
- A green color at the junction of the two liquids indicates the presence of bile pigments.
- Discard the urine and clean the test tube.

8.5 Helping in Bathing the Patient

Giving a bed bath means washing someone who is in bed. A bed bath cleans the skin and helps keep the skin free of infection. It helps to relax the person being bathed and help him feel better. Let the person wash himself as much as possible. Several types of bath can be used depending upon the clients need. Bath may be used for cleansing or for therapeutic measures related to some skin problems.

8.5.1 Types of Therapeutic Bath

Sitz Bath	-	To decrease pain and inflammation after rectal or perineal surgery or pain relief from hemorrhoids.
Hot water bath	-	To relieve muscle spasm and muscle tension.
Warm water bath	-	To relax and sooth.
Cool water bath	-	To decrease fever and to reduce muscle tension.
Oatmeal or aveneo	-	To sooth irritated skin, softens and lubricates dry scaly skin.
Corn starch	-	To sooth skin irritation.

8.5.2 BED BATH

Definition:

Bathing a bedridden patient in bed.

8.5.2.1 PURPOSES

- To clean the body off dirt and bacteria.
- To increase elimination through the skin.
- To prevent bed sore.
- To simulate circulation.
- To promote comfort to the patient.
- To regulate body temperature.
- To relieve fatigue.
- To provide active and passive exercise.
- To promote the feeling of wellbeing.

8.5.2.2 Articles Needed

- Makintosh and 2 bed sheets
- Disposable gloves.
- Water basin (bowl) to hold the water for the bed bath.
- Soft, lightweight cotton or flannel blanket.
- Bath towel and wash cloth.
- Soap, powder, lotion, deodorant.
- Scissors and nail cutters
- comb, hairbrush and hair oil.
- mouth care supplies, such as toothbrush and toothpaste.
- Kidney tray and paper bag.
- Clothing, such as underwear and clean bedclothes or robe.

8.5.2.3 Preparation of Client and Unit

1. Close the windows or turn up the heat to keep the room warm while giving the bath.
2. Explain the procedure to the patient. Remove the unnecessary items from the work area.
3. Wash hands and put on gloves.
4. Provide privacy Gather the necessary articles at the bedside.
5. Adjust the height of the bed to the comfortable working of the nurse.

   Fill the basin with warm water. The temperature of the water should not be higher than 115° F (46 ° C) using a bath thermometer.

   Put the soft blanket over the top sheet that is covering the person. Pull back the top sheet to keep it from getting wet. Help remove the person's clothes.
6. Offer bed pan or urinal if necessary. Keep the client flat, if the condition permits. Remove extra pillows and backrest.
7. Remove gloves, wash hands
8. Place the client is the supine position near the ride of the bed.

8.5.2.4 Procedure:

1. Close the window or door and screen the bed to prevent draught and to avoid exposure.
2. To collect the equipment next to the patients bed.
3. And arrange the items conveniently at the bed side.
4. Explain the procedure to the patient and get his cooperation.

5. Protect the bed with mackintosh and sheet.
6. Remove the patients linen and cover the patient.
7. Take water in the basin and feel with the back of your hand. The temperature should be comfortably hot.
8. With wet sponge towel, moisten the patient's face first.
9. Apply soap. Carefully wash patient's face, ears and front of the neck. Dry with the towel.
10. Wash the left hand first and the right hand. Support patient's arm by holding the wrist. Wash well between fingers. The patient may place hands in basin.
11. Remove the sheet up to the waist, ask the patients and keep the arms above his head. It will be easy to clean the axillae in this position. Clean chest and abdomen.
12. Change water and turn the patient to the side and sponge his back. Give long firm strokes from back of neck to the buttocks. Watch for any redness over the pressure areas.
13. Do the left leg first and then the right. Have the patient's knee flexed so to facilitate washing. Give the bed pan and ask the patient to clean the genitals. If the patient is unable to do help to do it for him. Patient should be given privacy during this.
14. This back care is done applying alcohol, massage back,use long firm strokes starting from back of the neck out over the shoulders and down to the buttocks. Use also rotation motion to increase the blood circulation. Extra attention to be given to the pressure areas.
15. Apply powder if indicated. This depends upon the condition of the skin. If the skin is wrinked the application of oils/creams is advisable.
16. If the patients is having dribbling of urine, zinc cream is applied.
17. Role up the mackintosh and sheet when the patient is on the side. Then remove it from the other side. Put the soiled linen in the receptacle (bucket for soiled linen).
18. Dress up the patient and remove the top sheet.
19. The bed is kept tidy and dry.
20. The patient is given a warm drink.
21. Remove the articles from the bed side.
22. Clean and replace in respective places.
23. Send soiled linen for wash.

8.5.2.5 After the bath

- Rub lotion onto the person's arms, legs, feet, or other dry skin areas. Help to dress the person. Offer to help him with mouth, hair, foot, or nail care.
- Throw away the dirty water and clean the washbasin. Put away items used to give the bath.

- The person has shaking chills or his temperature is over 101°F (38.3° C).
- The person has skin that is red or sore. These may be areas where the skin is broken down or getting infected.
- You have questions or concerns about the person's injury/illness or medicine.
- Seek care immediately if:
- The person has trouble breathing all of a sudden.
- The person has signs of a heart attack
- Chest pain or pressure that spreads to your arms, jaw, or back. Nausea (sick to your stomach), Trouble breathing, Sweating.

8.6 Pressure Ulcer

8.6.1 Definition

Pressure ulcers, also known as **pressure sores, pressure injuries, bedsores,** and **decubitus ulcers**, are localized damage to the skin and/or underlying tissue that usually occur over a bony prominence as a result of pressure, or pressure in combination with shear and/or friction.

The most common sites are the skin overlying the sacrum, coccyx, heels or the hips, but other sites such as the elbows, knees, ankles, back of shoulders, or the back of the cranium can be affected.

8.6.2 Causes

Pressure ulcers occur due to pressure applied to soft tissue resulting incompletely or partially obstructed blood flow to the soft tissue. Shear is also a cause, as it can pull on blood vessels that feed the skin. Pressure ulcers most commonly develop in individuals who are not moving about, such as those being bedridden or confined to a wheelchair.

There are four mechanisms that contribute to pressure ulcer development:

External (interface) pressure applied over an area of the body, especially over the bony prominences can result in obstruction of the blood capillaries, which deprives tissues of oxygen and nutrients, causing ischemia (deficiency of blood in a particular area), hypoxia (inadequate amount of oxygen available to the cells), edema, possible onset of osteomyelitis, inflammation, and, finally necrosis and ulcer formation. Ulcers due to external

pressure occur over the sacrum and coccyx, followed by the trochanter and the calcaneus (heel).

Friction is damaging to the superficial blood vessels directly under the skin. It occurs when two surfaces rub against each other. The skin over the elbows and can be injured due to friction.

Shearing is a separation of the skin from underlying tissues. When a patient is partially sitting up in bed, their skin may stick to the sheet, making them susceptible to shearing in case underlying tissues move downward with the body toward the foot of the bed.

Moisture is also a common pressure ulcer culprit. Sweat, urine, feces, or excessive wound drainage can further exacerbate the damage done by pressure, friction, and shear.

8.6.3 Signs and Symptoms

The early signs of pressure ulcers are

- Unusual changes in skin color or texture
- Swelling
- Tenderness
- Discomfort
- Pus-like draining
- An area of skin that feels cooler or warmer to the touch than other areas
- Local oedema
- Later the area becomes blue purple and mottled
- Due to continued pressure, the circulation is cut-off, the gangrene develops and the affected area is sloughed off..

8.6.4 Stages of Pressure Sores

Stage 1

Intact skin with non-blanch and redness of a localized area usually over a bony prominence.

Stage 2

Partial thickness, loss of dermis presenting as a shallow open ulcer with a red pink wound bed without slough may also present as an intact or open/ruptured serum filled blister. Also presents as a shiny or dry shallow ulcer without slough or bruising. This stage should not be used to describe skin tears, tape burns, perinea dermatitis, maceration or excoriation

Stage 3

Full thickness, tissue loss, subcutaneous fat may be visible but bone, tendon or muscle are not exposed.

Stage 4

Full thickness tissue loss with exposed bone, tendon or muscle. Slough or eschar may be present on some parts of the wound bed.

Unstageable

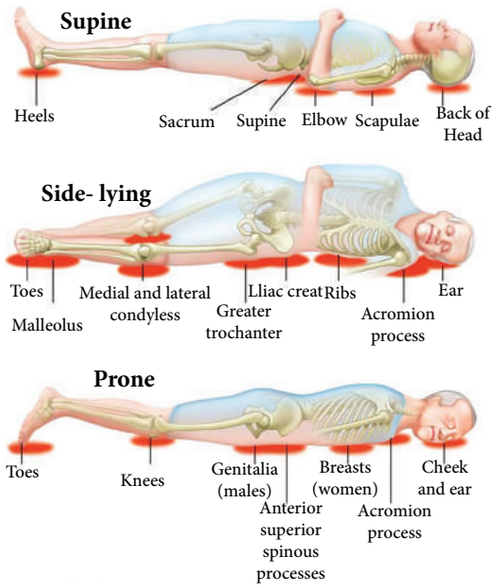
Full thickness tissue loss in which actual depth of the ulcer is completely obscured by slough (yellow, tan, gray, green or brown) and/or eschar (tan, brown or black) in the wound bed. Until enough slough and/or eschar is removed to expose the base of the wound, the true depth, and therefore stage, cannot be determined.

Suspected Deep Tissue Injury

A purple or maroon localized area of discoloured intact skin or blood-filled

blister due to damage of underlying soft tissue from pressure and/or shear. The area may be preceded by tissue that is painful, firm, mushy, boggy, warmer or cooler as compared to adjacent tissue.

8.6.5 Areas Prone to Develop Pressure Sore



8.6.6 Risk Factors

Factors that may place a patient at risk include

- immobility,
- diabetes mellitus
- peripheral vascular disease
- malnutrition
- cerebro-vascular accident and hypotension.
- Other factors are age of 70 years and older,
- current smoking history,
- dry skin,
- low body mass index,
- urinary and fecal incontinence,
- physical restraints,
- malignancy, and history of pressure ulcers.

8.6.7 Prevention

8.6.7.1 Redistributing pressure:

The most important care for a person at risk for pressure ulcers and those with bedsores is the redistribution of pressure so that no pressure is applied to the pressure ulcer.

8.6.7.2 Support surfaces

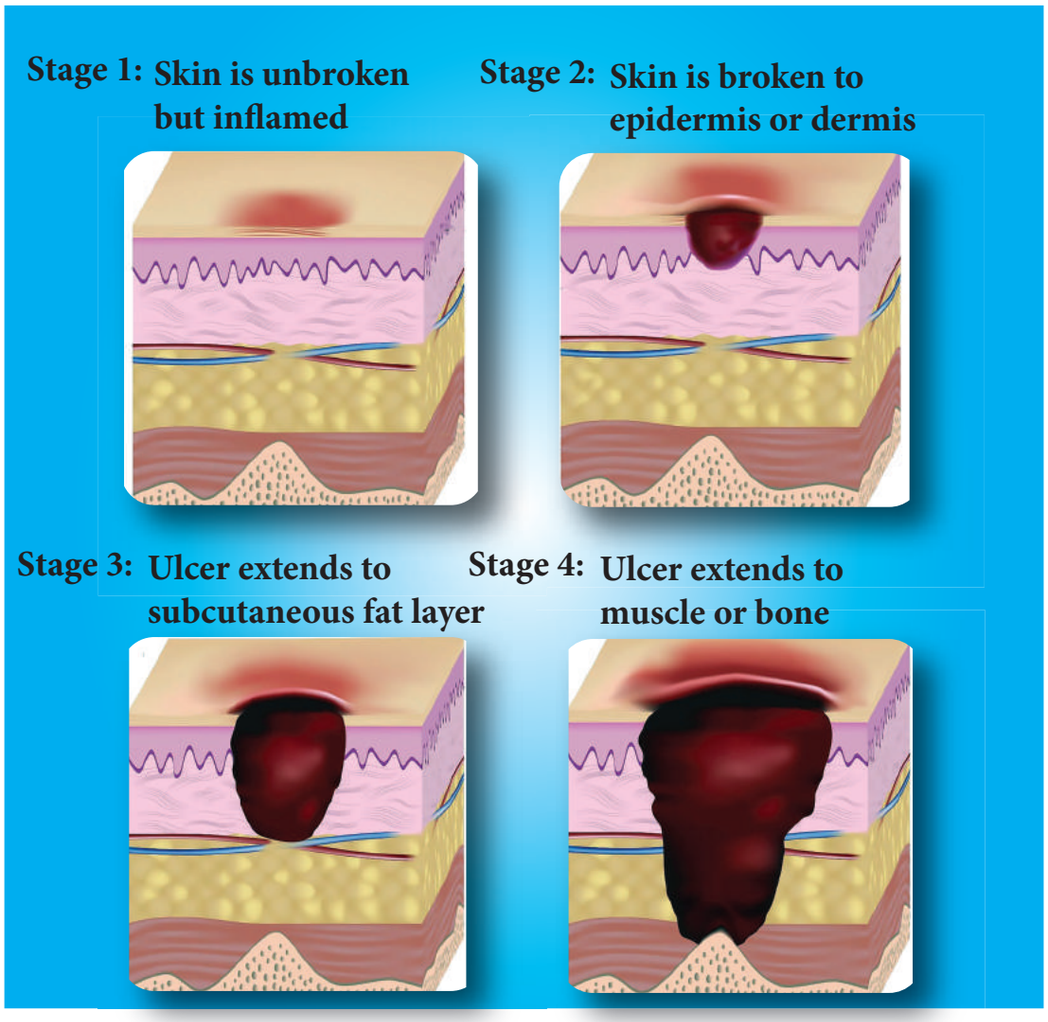
Many support surfaces redistribute pressure by immersing and/or enveloping the body into the surface. Some support surfaces, including anti decubitus mattresses and cushions, contain multiple air chambers that are alternately pumped. Methods to standardize the products and evaluate the efficacy of these products have only been developed in recent years.

8.6.7.3 Nutrition

In addition, adequate intake of protein and calories is important. vitamin C has been shown to reduce the risk of pressure ulcers. People with higher intakes of vitamin C have a lower frequency of bed sores in those who are bedridden than those with lower intakes.

8.6.7.4 Treatment

The treatment includes the use of bed rest, pressure re distributing support surfaces, nutritional support, repositioning, wound care (e.g. debridement, wound dressings) and biophysical agents (e.g. electrical stimulation). Reliable scientific evidence to support the use of many of these interventions, though, is lacking.



The following steps should be taken:

- **Remove the pressure** from the sore by moving the patient or using foam pads or pillows to prop up parts of the body.
- **Clean the wound**: Minor wounds may be gently washed with water and a mild soap. Open sores need to be cleaned with a saline solution each time the dressing is changed.
- **Control incontinence** as far as possible.
- **Remove dead tissue**: A wound does not heal well if dead or infected tissue is present, so debridement is necessary.
- **Apply dressings**: These protect the wound and accelerate healing. Some dressings help prevent infection by dissolving dead tissue.
- Use oral antibiotic cream: These will help treat an infection.

8.6.7.5 Debridement

Necrotic tissue should be removed in most pressure ulcers. The heel is an exception in many cases when the limb has an inadequate blood supply. Necrotic tissue is an ideal area for bacterial growth, which

has the ability to greatly compromise wound healing. There are five ways to remove necrotic tissue.

1. **Autolytic debridement** is the use of moist dressings to promote autolysis with the body's own enzymes and white blood cells.
2. **Biological debridement**, or maggot debridement therapy, is the use of medical maggots to feed on necrotic tissue and therefore clean the wound of excess bacteria. Although this fell out of favor for many years, in January2004, the FDA approved maggots as a live medical device.
3. **Chemical debridement**, or enzymatic debridement, is the use of prescribed enzymes that promote the removal of necrotic tissue.
4. Mechanical debridement, is the use of debriding dressings, whirlpool or ultrasound for slough in a stable wound
5. Surgical debridement, or sharp debridement, is the fastest method, as it allows a surgeon to quickly remove dead tissue.

8.6.7.6 Dressing

Some guidelines for dressing are

Condition Cover dressing

None to moderate exudates - Gauze with tape or composite.

Moderate to heavy exudates - Foam dressing with tape or composite

Frequent soiling - Hydrocolloid dressing, film or composite

Fragile skin -Stretch gauze or stretch net

8.7 Back Care

8.7.1 Definition

Scientific form of massaging the back using different massaging strokes to provide cutaneous stimulation and thus promote comfort.

8.7.2 Purposes

- To relieve muscle tension
- To promote physical and mental relaxation.
- To relieve insomnia
- To stimulate blood circulation
- To assess the condition of skin
- To prevent bedsore

8.7.3 Contraindications

Patients with

- Rib fracture
- Burns
- Immediate post operative period after coronary artery bypass graft
- Spinal injuries
- Surgeries on back
- Lotion or oil

8.7.4 Articles Needed:-

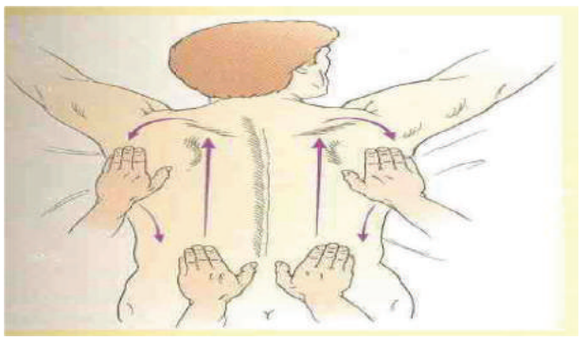
- Lotion or oil
- Bath towel
- Bath blanket
- Soap
- Wash cloth
- Warm water in basin
- Mackintosh and draw sheet

If patient requires hygienic care, it should be provided, followed by massage

8.7.5 Massage Techniques

Effleurage

They are long sweeping strokes that alternate between firm and light pressure and which can be performed using the palm of the hand or the fingertips. The knots and tension in the muscles tend to get broken with this massage technique.



Petrissage

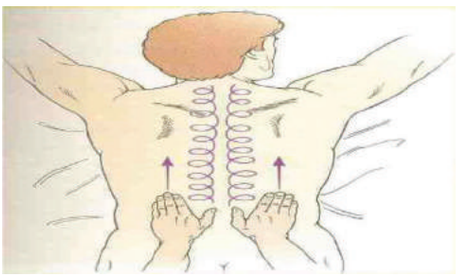
This is the technique of kneading the muscles of the body to attain deeper massage penetration. The thumbs and the knuckles of the fingers are used to knead the muscles of the body and to squeeze them to prepare them for the other massage techniques that follow.

Tapotement or Rhythmic Tapping

As the name suggests, it consists of rhythmic tapping that uses the fists of the cupped hands. This helps to loosen and relax the muscles being manipulated and also helps to energize them.

Friction

This move seeks to create heat to bring about relaxation of the muscles. The palms of the hand are rubbed together vigorously with each other, or they are rubbed onto the skin of the person being massaged in order to produce heat by friction. This technique can be used as a warm up for the muscles of the body to be treated for deeper massage.



Vibration or Shaking

This helps to loosen up the muscles by using a back and forth action of the fingertips or the heel of the hand over the skin. The muscles of the body are litreally shaken up to loosen and relax the muscles.

8.7.6 Procedure

- Explain the procedure and the position to the patient.
- Adjust bed to comfortable height.
- Adjust light, temperature and sound within room.

- Close curtains around bed. Lower the side rails and help patient assume prone or side lying position (sim's position)
- Expose patient's back, shoulders, upper arms, and buttocks. Cover remainder of body.
- Wash your hands with warm water.
- Inform patient that lotion will feel cool and wet
- Apply hands first to sacral area massaging in circular motion, stroke upwards from buttocks to shoulders
- Continue in one smooth stroke from upper back to arm and laterally alongside of back, down to iliac crest.
- Do not take hands off from patient's back till the end of the procedure.
- Continue massage pattern effleurage for at least 3 minutes.
- Perform petrissage along upward along one side of spine from buttock to shoulders.
- Perform tapotement for 2 minutes.
- Apply other remaining massaging techniques for at least 2 minutes.
- Apply oil or lubricants to back as required.
- Wipe excess lubricant from patients back with bath towel/ tissue.
- Retie gown or assist pajamas.
- Help patient to comfortable position.
- Raise side rails as needed
- Disposed of soiled towel and wash hands.
- Record response to back massage and condition of skin.

8.7.7 Special Consideration

- For patients with history of hypertension and dysarrhythmia asses pulse and blood pressure.
- Consider cultural preferences.
- Do not give massage if any discoloration of skin present.
- A back massage should take about five to ten minutes and can be given with the patient's bath, before bedtime, or at any other time during the day.
- Determine if any allergies or skin sensitivities exist before applying lotion to the patient's skin.
- The greatest relaxation effect of a massage occurs when the rhythm of the massage is coordinated with the patient's breathing.

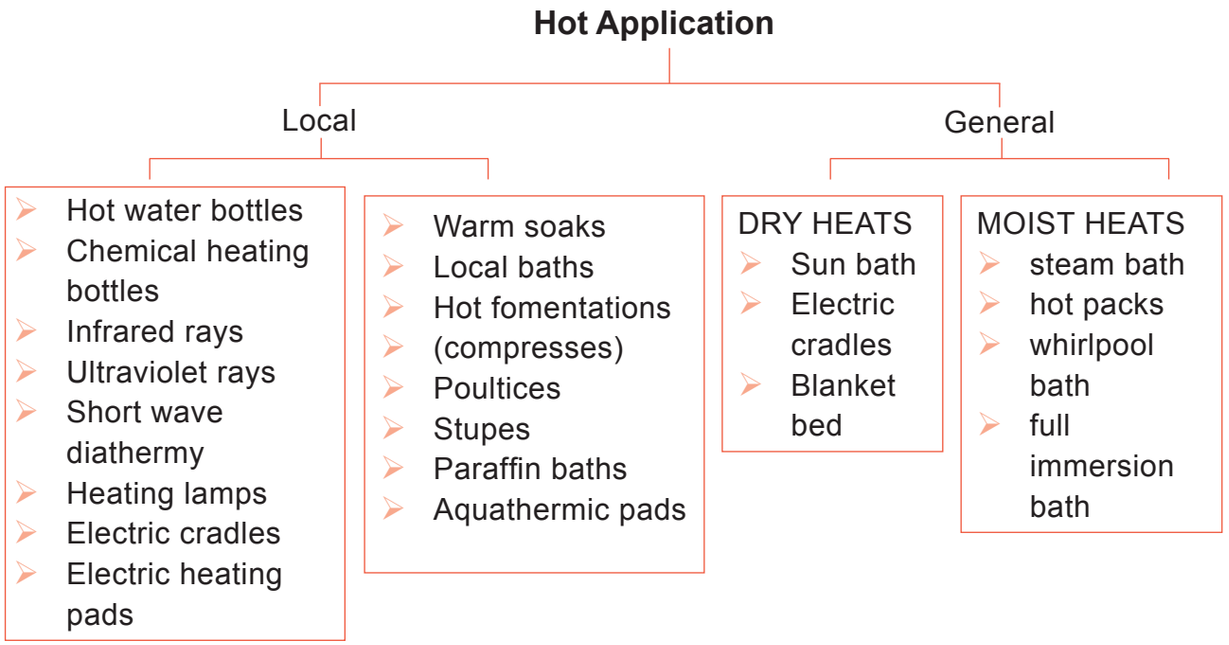
8.8 Hot and Cold Applications

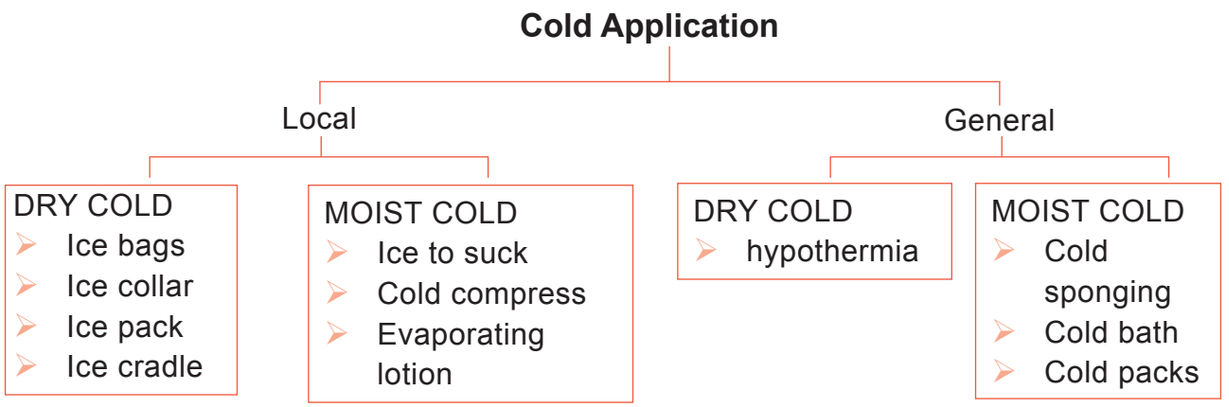
8.8.1 Definitions

Hot application is the application of hot agent, warmer than skin either in a moist or dry form on the surface of the body to relieve pain and congestion, to provide warmth, to promote suppuration, to promote healing, to decrease muscle tone and to softens the exudates.

Cold application is the application of cold agent, cooler than skin either in a moist or dry form on the surface of the body to relieve pain and body temperature, to anaesthetize an area, to check hemorrhage, to control growth of bacteria, to prevent gangrene, to prevent oedema and reduce inflammation.

8.8.2 Classifications





8.8.3 Effects of Hot and Cold Applications

HOT APPLICATION	COLD APPLICATION
Peripheral vasodilation	Peripheral vasoconstriction
Increased capillary permeability	Decreased capillary permeability
Increased oxygen consumption	Decreased oxygen consumption
Increased local metabolism	Decreased local metabolism
Decreased blood viscosity	Increased blood viscosity
Decreased muscle tone	Increased muscle tone
Increased blood flow	Decreased blood flow
Increased lymph flow	Decreased lymph flow
Increased motility of leucocytes	Decreased motility of leucocytes

8.8.4 Therapeutic Uses of Local Hot Applications

- Heat decreases pain
- Heat decreases muscle tone
- Heat promotes healing
- Heat promotes suppuration
- Heat relieves deep suppuration
- Heat provides warmth
- Heat stimulates peristalsis

8.8.5 Therapeutic Uses of Local Cold Applications

- Cold relieves pain
- Prevents gangrene
- Prevents edema and reduce inflammation
- Controls hemorrhages
- Checks the growth of bacteria
- Reduce the body temperature
- Cold anaesthetize an area

8.8.6 Principles of Hot and Cold Applicatons

1. Water is good conductor of heat.
2. Air is poor conductor of heat.
3. Heat always flows from hotter area to the less hot area.
4. Prolong exposure to moisture increases the skin susceptibility to maceration and skin breakdown, reducing the protection of the intact skin.
5. Moisture left on the skin cause rapid cooling due to evaporation of the moisture.
6. Presence of steam increases the temperature of the hot application
7. Oil acts as the insulator and delays the transmission of the heat.
8. Woolen materials absorb moisture slowly, but hold the moisture longer and cold off less quickly than the cotton materials.
9. When immersed in water the body becomes buoyant therefore the exercises are performed under water with less effort.
10. The temperature tolerance varies with individuals and according to the site and area covered.
11. The end organs of the sensory nerves of the skin convey the sensation of cold, heat pain and pressure. The sensation is interpreted in the brain.
12. Friction produces heat.

8.8.7 Contraindications of Hot Applications

- Heat is not used in malignancies
- Heat is not used in patients with heart, kidney and lung diseases
- Should not used in acute inflamed areas.
- Should not be applied on patients with paralysis.
- Should not be applied on open wounds
- Should not be applied when there is an edema associated with venous or lymphatic diseases.
- Should not be applied on patients with metabolic disorders.

- Should not be applied on very young and very old patients.
- Should not be applied on clients with high temperature.

8.8.8 Contraindications of Cold Applications

- Cold should not be applied on clients who are in the stage of shock and collapse
- Cold should not be applied when there is edema.
- Cold should not be applied on clients with circulatory disorders.
- Cold should not be applied on patients with decreased sensation
- Patients with shivering and very low temperature,
- Cold should not be applied when there is infected wound.

8.8.9 Complications of Hot and Cold Applications

HOT APPLICATION	COLD APPLICATION
Pain	Pain
Burns	Blisters and skin breakdown
Maceration	Maceration
Redness of the skin	Gray or bluish discoloration
Edema	Thrombus formation
Pallor(secondary effects)	Redness(secondary effects)
Hyperthermia	Hypothermia

8.8.10 General Instructions

- Asses the condition the clients before and after the hot and cold applications.
- Maintain the correct temperature for the entire duration of the application
- Expose the client only to the safe temperature.
- Do not allow the clients to adjust the temperature control of appliance such as short wave diathermy, electric heating pads etc.
- Never ignore the complaints of clients however small they appear to be.
- Always make sure that the client is in position to remove the application
- The client must have a calling signal within reach
- Never leave a client alone even for a short period that cannot move from the appliances.
- A thin layer of petroleum jelly or oil should be applied to the skin prior the application of moist heat application.
- Do not use electrical appliances near to open oxygen. A small spark may cause explosion.
- Do not handle electrical appliances with the wet hands.
- Hot and cold applications must be very carefully used when the clients is unconscious, anaesthetized or otherwise unable to respond pain.

- Any signs of complications should be recognized early, the procedure should be stopped immediately.
- After the procedure, dry the part gently by patting and not by rubbing to remove the moisture.
- In hyperpyrexia, the temperature of the body should be brought down gradually and steadily, sudden cooling is dangerous to the client.

DO YOU KNOW?

Practice Makes You Perfect

If You Do You Will Remember.
So Practice Like This

SUMMARY

This lesson has introduced the basic nursing care techniques and procedures involved in nursing a patient. The profession is now required to view aspects of nursing scientifically and to ensure that procedures, policies and standards of nursing care. The management of manual handling of procedures in all the settings can be sensitive and diverse. Therefore nursing a patient is an important art and skill oriented profession . By acquiring adequate knowledge, skill and attitude, the consumers will be satisfied with proper nursing care.

DO YOU KNOW?

Student Activity

Divide the students into small groups which consists of 5-6 students in each group. Appoint a group leader and let others be a member of the group.

For oxygen administration based on the color coding and % of the oxygen ,

- Let the students wear the same color of dress and let others identify the % of oxygen.
- Prepare an album with the respective colors with oxygen %
- Collect images of patients with oxygen in flow

Teacher Activity

- Arrange a visit to a local hospital , from where the students can observe and learn the skill of the procedures.
- Demonstrate the procedures to the students and ask them to do the return demonstration.

EVALUATION

I. Choose the correct answer

1. Nursing is considered to be an ------ oriented profession

   a. Art

   b. image

   c. knowledge

   d. none of the above

2. The essential core of nursing practice is to deliver

   a. nurse centered care

   b. holistic care

   c. patient centered care

   d. both b & c

3. The low concentration of the oxygen can be delivered through

   a. venture mask

   b. cannula

   c. face mask

   d. both a & c

4. The oxygen concentration of around 24 to 25% will be delivered in flow rates of

   a. 2 litre b. 3 litre

   c. 1 litre d. 4 litre

5. During urine testing, yellow precipitate shows ------ sugar

   a. 500mg/dl

   b. 500-1000mg/dl

   c. 1000-1500mg/dl

   d. >1500mg/dl

II. Answer the following questions in one (or) two lines.

6. List the risk factors for pressure sore.
7. Write the purposes of back care.
8. List the types of hot application.
9. Classify cold application.
10. List the types of therapeutic bath.

III. Write short notes

11. Table out the effects of hot and cold application.
12. What are purposes of oxygen administration?
13. Explain the test for albumin.
14. Explain the test for acetone.
15. Write the purposes of bed bath.
16. List the mechanism of pressure ulcer.
17. Identify the signs and symptoms of pressure ulcers.
18. Illustrate the areas prone to develop pressure sore.
19. Enlist the therapeutic uses of hot and cold application.
20. Write the advantages and disadvantages of oxygen administration through tent method.

IV. Write in detail

21. Explain the procedure of collection specimen for urine.
22. Write a note on urine analysis.
23. Explain the stages of pressure sore.
24. Describe the procedure of back care.
25. Discuss the procedure of bed bath.

A-Z GLOSSARY

1. CANNULA (வடிகுழாய் (அ) புனல் வகை உபகரணம்) – a thin tube inserted into nostrils for supplying oxygen
2. HUMIDIFIER (ஈரப்பத மூட்டி) – a device for keeping the air moist
3. MIDSTREAM (மத்திம ஓட்ட) – the middle of a stream ie, in between the act of passing urine
4. PRECIPITATE (வீழ்படிவுறுதல்) – Presence of turbidity or cloudiness settling down
5. GLUCOSE (சர்க்கரை/குளுக்கோஸ்) – a simple sugar which is important for energy
6. ALBUMIN (ஆல்புமின்) – a simple form of protein soluble in water
7. ACETONE (அசிடோன்) – a colorless volatile liquid ketone

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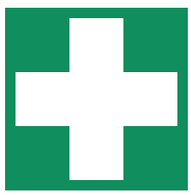
UNIT 9

First Aid

LEARNING OBJECTIVES

After learning this chapter students will be able to

- define of first aid
- list the Golden rules of first aid
- explain first aid for patients with wound, hemorrhage, and shock.
- describe fracture and dislocation of joints.
- explain first aid for snake bite/insect bite, poison.
- elaborate CPR (Cardio- Pulmonary Resuscitation)
- practice ACLS (Advanced Cardiac Life Support)
- explain disaster management.



ISO First Aid Symbol

Star of life

Maltese or Amalfi Cross

St. Andrew's First Aid Badge

Emblem of the Red Cross

9.1 Introduction

First aid to sick and wounded has been practiced since ancient times. But an organized world wide effort for giving first aid came only in the year 1877 with the formation of St. John ambulance association of England after the Great apostle of St. John.

In **1920, Red Cross Society** of India was established. With more than 400 branches all over India, great success has been achieved in the improvement of health and prevention of diseases. Since then the universal need and utility of first aid has been increasing in this modern mechanized civilization.

The famous German Surgeon General Esmarch (1823-1908) is considered to have conceived the idea of 'First Aid'.

9.1.1 Definition of First aid

- First aid is simple medical treatment given the earliest possible to a person who is injured or who suddenly becomes ill.
- First aid is the initial assistance or treatment given to a casualty for any injury or sudden illness before the arrival of an ambulance, doctor or other qualified person. First aid is not an end by itself. It indicates that the person is in need of a "**Secondary Aid".**

First Aider

The person who is trained to render emergency service on the spot until the medical aid is obtained is called a "**First Aider".**

Qualities of a First Aider.

- Calm
- Confident
- Willing to offer assistance whenever neccessary

A simple way to remember the aims of first aid is to think of the **"Three Ps"**

Preserve, Prevent, Promote.

Aims of first aid:

3Ps Preserve life

Prevent injuries /condition from worsening

Promote Recovery

Scope of First Aid

The scope of first aid includes

a) Diagnosis

b) Treatment

c) Disposal of the case.

(a) Diagnosis

Know the possible cause of accident or sudden injury.

Gather information from casualty and bystanders.

Watch for symptoms like faintness, bleeding, thirst, pain or shivering

Watch for abnormal signs like swelling, paleness etc.

(b) Treatment

Remove the causative agent from the casuality eg. falling machinery, fire, electrical wire, poision etc.

(c) Disposal

Arrange for the safe transportation of the casuality to the care of a doctor or hospital as soon as possible.

Inform the family or relatives at once.

9.2 Golden rules of first aid

1. Do first things first, quickly-quietly without fuss or panic.
2. Reassure the casualty through encouraging words.

3. Check ABC Rule. (Airway, breathing, Circulation)
4. Open the airway by tilting the head.
5. Give artificial respiration if breathing has stopped.
6. Perform chest compression if the pulse is not present
7. Stop bleeding if any by direct pressure.
8. Treat for shock.
9. Do not allow people to crowd around.
10. Don't remove clothes unnecessarily.
11. Arrange for transportation of the casualty.
12. Casualty should be sent to a hospital or doctor by quickest means of transport. Always inform police about serious accidents and the relatives.

9.3 First aid for patients with Wound, Hemorrhage, and Shock

9.3.1 Wounds

Any abnormal break in the skin or the body surface is known as a wound.

In all wounds, even in small cuts or tiny stab wounds, there is danger that germs will grow in the wound, causing an infection.

Types of Wound

1. Penetrating wound-wound that breaks through the full thickness of skin.
2. Non-penetrating wound-wound does not break through the skin.
3. Miscellaneous wound

Penetrating wound	Non-penetrating wound	Miscellaneous wound
Stab wound Trauma from sharp objects,	**Abrasions** Scraping of the outer skin layer.	**Thermal wound** Injuries resulting from extreme hot or cold.
Skin cuts Cuts in the skin to perform surgical procedures.	**Laceration** Skin and tissue may be partly or completely torn away.	**Chemical wound** Injuries result from contact with or inhalation of chemical materials.
Gun shot wound Wounds resulting from fire arms.	**Contusions** The soft tissues beneath the skin are damaged but the skin is not broken.	**Bites and stings** Injuries resulting from bites from human, dogs, rodents, snakes, scorpions and tick.
	Concussion Damage to the underlying organs and tissue without external wound.	**Electrical wound** Injuries results from passage of high-voltage electrical current.

Fig; Types of Wound

Principles of wound care

1. To stop the bleeding
2. To prevent infection
3. To prevent shock

First aid for wounded patients

Major wounds	Minor wounds
Call for medical help	Clean the wound with soap and running water. Always clean away from the wound.
Apply continuous firm direct pressure to wound using clean cloth or bandage until bleeding stops.	Apply continuous firm, direct pressure to wound until bleeding stops.
If bleeding soaks through bandage do not remove the original bandage, apply more bandages and pressure over it.	Once bleeding stops apply antibiotic ointment and cover with bandage.
Get medical help to cleanse and close the wound.	If bleeding soaks through bandage do not remove original bandage. Apply more bandages and pressure.

9.3.2 Hemorrhage

Haemorrhage or bleeding is a flow of blood from an artery, vein or capillary accompanied an accident in which a wound, a fracture or damage to organs occurs.

Bleeding can occur internally, where blood leaks from blood vessels inside the body, or externally, either through a natural opening such as the mouth, nose, ear, urethra, vagina, or anus, or through a break in the skin.

Types of hemorrhage or bleeding,

a) arterial Bleeding-blood coming from Arteries ,bright red in colour, spurts.

b) Venous Bleeding-blood coming from veins, dark red in colour, flows steadily.

c) Capillary Bleeding. – blood from small blood vessels, oozes and most common.

first aid nemonic PEEP to deal with a severe bleeds.

***P** - Position*
***E** - Expose & examine*
***E** - Elevation*
***P** - Pressure*

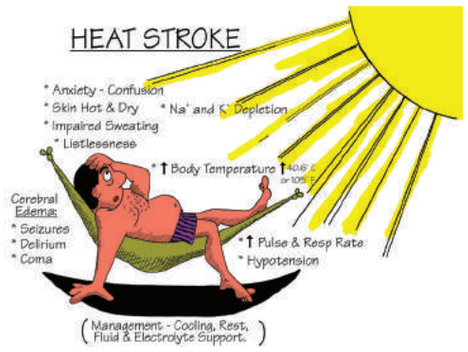
First aid treatment for hemorrhage

External hemorrhage	Internal hemorrhage
Check the area to know exactly from where the blood is coming.	Provide comfortable position

External hemorrhage	Internal hemorrhage
Clean the area with clean cloth	Do not give anything by mouth.
Place a sterile gauze pad or clean cloth and apply firm pressure at the point to stop bleeding,	If the casuality is unconscious check ABCs
If the bleeding does not stop in 10 minutes elevate the part above heart level to reduce blood flow,	If unconscious put in side lying position to prevent aspiration of secretion.
Reassess circulation every 20-30 minutes. Keep the casuality warm.	Treat the shock by raising the legs 8-12 inches.
Treat the shock by raising the legs 8-12 inches.	Transport immediately for medical care.

Effects of Extreme Heat Stroke

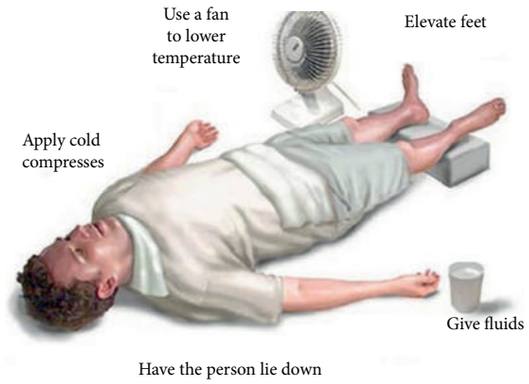
- It occurs when body can no longer controls its temperature anymore and the body's temperature increases to106 degree or higher within 10 to 15 minutes.
- It is caused by very high environment temperature or illness like malaria.
- Exposure to heat and humidity for long time
- Prolonged confinement in hot atmosphere.
- Consumption of alcohol.



Management

- Move the causality to cold place and remove the clothing.
- If the casualty is conscious, then place him in half sitting position with head and shoulders supported.
- If the casualty is unconscious, then place in recovery position.
- Wrap the casualty in a wet sheet and keep it wet. Fan should be on.pour water all over the body. Colds ponging should be started
- Replace the body fluids. Give cold water to drink
- Apply ice cap with ice pieces over the head and neck.
- Cold water enema can be given
- If required, shift him to hospital.

Heat stroke if not treated immediately can cause permanent brain damage.



Have the person lie down

HEAT CRAMPS

Heat cramps, are muscle spasms that result from loss of large amount of salt and water through exercise. This can be caused by inadequate consumption of fluids or electrolytes.

Treating Heat Cramps

Identify when you have a heat cramp

typically due to exercising or working in hot environments.

Stop the activity being performed

Heat cramps are not something you "push through" during exercise. They are your body's way of telling you that it needs a break.

Rest in a cool environment

Find a cooler spot in the shade or indoors and give yourself time to rest and cool down

Drink plenty of fluids

The cramp is a response to dehydration and loss of electrolytes, so you should also drink lots of fluids while you rest. Dissolve a quarter or half teaspoon of regular table salt into one quart of water

Gently stretch the muscles that are cramping.

9.4 Frost Bite

It is a condition in which skin and the tissue below the skin freeze. This is caused due to prolonged exposure to intense cold. Frostbite is often accompanied by hypothermia.

Signs and symptoms

At first, the feeling of prick by "pins-and-needles"

Paleness followed by numbness

A hardening and stiffening of the skin.

A color change to the skin of the affected area.

Management;

a. Very gently remove gloves rings and other constriction.
b. Warm the affected part with your hands.
c. Move the casualty into warm before you thaw the affected part.
d. Place the affected part in warm water
e. Apply a high dressing of fluffed-up, dry gauze bandage.
f. Raise and support the limb to reduce swelling.

9.5 Shock

Shock is a life- threatening condition in which not enough blood is reaching the vital organs in the body as a result of injury or illness.

Causes	Symptoms	Signs
Heart problems, such as a heart attack, or heart failure	weak, rapid pulse	Casuality is anxious and restless

Severe internal or external bleeding Loss of body fluids, from dehydration, diarrhea, vomiting or burns Severe allergic reactions and severe infection Severe or extensive injuries Electric shock Exposure to extreme heat and cold Bites or stings Gas poisoning Emotional stress, illness.	cold, clammy skin faintness/ dizziness Blood pressure falls Pupils are dilated Lustreless eyes Shaking and trembling of arms and legs Unconsciousness may develop.	Weakness and fainting Giddiness & disorientation Shallow, rapid or gasping breathing Skin become pale, cold and clammy Nausea, vomiting or extreme thirst.

Effects of shock

- Early loss of consciousness
- Failing heart output and insufficient oxygen to cells that are vital for survival.
- Sustained lowered blood pressure

Types of Shock	
Neurogenic Shock	From damage to the nervous system such as a severed spine or a brain injury.
Haemorrhagic Shock	Loss of blood due to wound and internal bleeding.
Respiratory Shock	Insufficient amount of oxygen in the blood due to inadequate breathing.
Cardiogenic Shock	Cardiac muscle not pumping effectively due to injury or previous heart attack.
Circulatory shock,	It is a life-threatening medical condition of low blood perfusion to tissues resulting in cellular injury and inadequate tissue function.
Hypovolemic shock	Related to low blood-volume from hemorrhage, internal bleeding, severe dehydration, vomiting, diarrhea, uncontrolled diabetes, large areas of severely-burned skin, or extreme heat stress.
Metabolic	Loss of body fluids with a change in biochemical equilibrium
Septic Shock	Toxin causes pooling of blood in capillaries not enough blood available for tissues.
Anaphylactic Shock	Severe allergic reaction of the body to sensitization by a foreign protein caused by an allergic reaction to a food, drug, or venom.

Types of Shock	
Traumatic shock	Brought on by either a traumatic physical injury such as being hit by a car or a mental/emotional blow such as seeing a loved one killed.
Insulin shock	Hypoglycemic (low blood sugar) reaction to an overdose of insulin, a skipped meal, or strenuous exercise.
Electric shock	Injuries caused when electric current passes through body.

Dropping blood pressure to dangerously low levels by widening blood vessels, causing respiratory distress, liver and kidney failure, and coma. Includes **toxic shock syndrome.**

Management

a. Immediately reassure and comfort the casuality.

b. Normally the lower extremities should be elevated. This reduces the blood in the extremities and improves the blood supply to the heart.

c. If there are indications of the head injuries, the head could be raised slightly to reduce pressure on the brain.

d. If there are breathing difficulties, the victim may be more comfortable with head and shoulders raised

e. Loosen the tight clothing to help the circulation and assist breathing.

f. Treat the cause of shock, stop bleeding, immobilize fracture.

g. If breathing and heart beat stop then;-

h. Establish the airway

i. Begin resuscitation immediately.

j. Keep patient in recovery position.

Follow DRSABCD and manage other severe injuries

D - Danger — Ensure the area is safe.

R -Response — Check for response: ask their name, squeeze their shoulders.

S-Send for help

A – Airway — Open patient's mouth.

B-Breathing — Check for breathing: look, listen and feel.

C- CPR — Start CPR: 30 chest compressions followed by 2 breaths.

D- Defibrillation

9.6 Fracture

A break or crack in a bone is called a fracture.

A dislocation is where a bone has been displaced from its normal position at a joint. A fracture is when a bone has been broken.

Fracture

closed fracture the skin surface around the damaged bone is not broken".

open fracture the skin over the fracture has been damaged or broken.

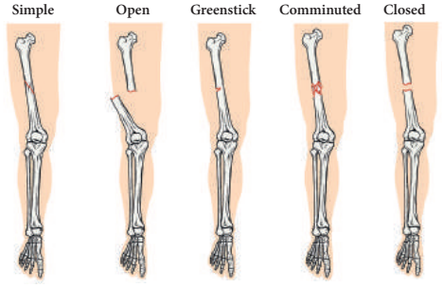
FLFPDX

Causes;-

Direct force:- A bone may break at the point where a heavy blow is received.

Indirect force:- a bone breaks away from the spot of application of force.

Types of Fracture	
Simple fracture	This is the clean break or crack in the bone
Compound fracture	in this type of fracture the skin is torn by the broken bone which may protrude through the wound
Greenstick fracture	Is a break that happens on oneside of a bone.
Comminuted fracture	This type of fracture produce multiple fragments
Impacted fracture	This type of fracture the ends of the broken bone driven in to each other.



DO YOU KNOW?

Green stick fractures occur in children younger than 10 years because their bones are softer and more flexible than the bones of adults

What to look for – fractures

Swelling.

Pain at or near the site of injury.

Difficulty moving.

Movement in an unnatural direction.

A limb that looks shorter, twisted or bent.

A grating noise or feeling.

Loss of strength .

The aims of first aid for the fractures are:

1. To prevent further damage
2. To reduce pain and shock
3. To make the patient feel comfortable
4. To get medical aid as soon as possible.

If you suspect that someone has fractured a bone

Do's

- Stop any bleeding .
- Immobilize the injured part.
- Apply ice pack wraped in a towel .
- Treat for shock.

Don'ts

- Do not force anyone to use a painful body part.
- Do not straighten a misshapen bone.
- Do not place ice/cold pack directly on skin.
- Do not move victim if neck or spine injury is suspected, unless absolutely necessary.

- Do not move until injury has been immobilized.
- Do not remove shoes, boots, or clothes around a possible fracture.
- Splinting is unnecessary if victim can give the broken bone sufficient support and immobility.
- Do not splint a possible fractured bone if doing so causes pain.
- Do not Massage the affected area

Points to Remember
DO NOT move the casuality until the injured part is secured and supported unless he/she is in danger
DO NOT let the casuality eat or drink
DO NOT try to replace a disclosed bone into its socket

9.6.1 Dislocation of Joints

A joint is where two bones join or connect. A dislocated joint happens when bones are partly or completely pulled out of their normal position.

The most common joints that dislocate are the shoulder, knee, jaw, or joints in the thumbs or fingers.

Signs of Dislocated joints

The four signs of a dislocated joint are:

1. Strong, sickening pain
2. Not being able to move the joint
3. Swelling and bruising around the joint
4. Shortening, bending or deformity of the joint

First aid for dislocated joints

- Advise them to stay still and help them to support their dislocated joint in the most comfortable position.
- Stop the joint from moving using a bandage. For an arm injury, make a sling to support the arm. For a leg injury, use padding or broad-fold bandages..
- Apply an ice pack. Ice can ease swelling and pain in and around the joint.
- Once you've stopped the joint from moving, take or send the injured person to hospital.
- Keep checking their breathing, pulse and level of response. Check the circulation beyond the bandages every ten minutes and loosen if necessary.

9.7 Insect Bites

Bee, Wasp, Ant stings and other Insect bites.

Remove the sting by scraping, never squeeze the site.

Wash the area and apply antiseptic cream.

Keep the sting site rested, elevated and cool.

To relieve pain and swelling apply cold compress.

Local swelling and irritation may last for several days.

Scorpions Bites

Scorpion stings can be very painful and the pain may persist for several hours. Local redness and numbness often occur.

Some people are allergic to stings and can rapidly develop the serious condition of anaphylactic shock.

Australian scorpions do not cause severe symptoms

Symptoms and signs

Itching, swelling

Burning pain

Increased sensation or numbness

Lacrimation

Salivation

Nausea and vomiting

Profuse sweating

Treatment

Apply a tourniquet proximal to the site of the sting and release it every 5 to 10 minutes. Apply ice pack on the region to slow down the absorption of poison.

Shift the patient to hospital

Centipedes

Local redness, itching and pain are common. Severe pain is sometimes experienced. Apply antiseptic to the bite site.

Snake bite

Bites from sharp pointed teeth cause deep puncture wounds that can carry germs far into the tissues. Snake bite results in punctured wounds caused by the fangs of a snake.

Signs and symptoms of snake bite:

A pair of puncture marks.

Severe burning pain at the site of the bite

Redness and swelling around the bite

Nausea and vomiting

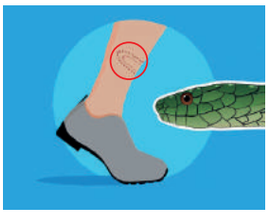
Difficult in breathing and speech.

Dimness of vision.

Increased salivation and sweating.

Examples of Snakebites

Venomous Snake



Nonvenomous Snake

- Do not wash, squeeze or puncture the bite site.
- Apply a pressure immobilization bandage.
- Keep the victim calm and still.
- Do not give food or alcohol.
- Do not allow the victim to walk.
- Bites to the head and body must be bandaged as firmly as possible.
- Do not attempt to catch or kill the snake.

Animal bites

One infection someone might get from an animal bite is rabies, which is a serious viral infection that attacks the brain and nervous system. If an infected animal bites a human, they will pass on the virus, through their saliva.

Tetanus (a bacterial infection) is also a potential risk after an animal bite.

Animal bites- First Aid Management

- Wash the wound from the bite thoroughly with soap and warm water as it can reduce the risk of infection from an animal bite.
- Raise and support the wound and then cover it with a sterile wound dressing.
- If the wound is large or deep, then treat for bleeding.
- If there's a risk of rabies, then you need to get them to hospital as fast as you can.

If the bite is from another human, there's also a risk of getting hepatitis or HIV/ AIDS viruses.

9.8 Cardio Pulmonary Resuscitation (CPR)

CPR stands for cardio-pulmonary resuscitation. It's a life saving medical procedure which is given to someone who is in cardiac arrest. It helps to pump blood around the person's body when their heart can't.

To carry out CPR a person presses up and down on the casualty's chest (chest compressions) and gives them a series of rescue breaths to help save their life when they are in cardiac arrest.

CPR comprises the following 3 steps, performed in order:

- Chest compressions
- Airway
- Breathing.

Indications and contra indications

CPR should be performed immediately on any person who has become unconscious and is found to be pulseless and absence of breathing.

Contra indications

- The only absolute contra indication to CPR is a do-not-resuscitate (DNR) order or other advanced directive indicating a person's desire to not be resuscitated in the event of cardiac arrest.

6 Major CPR steps

Before starting CPR check is the environment safe for the person.

Step 1: Shake and shout

If the person appears unconscious tap or shake the shoulders ask loudly are you (ok)? No response call for help.

Step 2: Check for normal breathing and circulation

Check if the person is breathing normally by looking for:

- regular chest movements
- listening for breathing
- feeling for breath on your cheek.
- Check if the person has circulation by placing the index and middle fingers on the neck to the side of wind pipe.
- If there is no pulse and breathing start chest compression and rescue breathing,
  - If the person is breathing normally, then put them in the recovery position

Step 3: Give 30 chest compressions

- Kneel next to the person.
- Place the heel of one hand in the centre of their chest. Place your other hand on top of the first. Interlock your fingers.
- With straight arms, use the heel of your hand to push the breastbone down firmly and smoothly, so that the chest is pressed down between 5–6 cm, and release.
- Do this at a rate of 100 to 120 chest compressions per minute – that's around 2 per second.
- Give **30 chest compressions.**

Step 4: Give two rescue breaths

- Open the airway Place one hand on the person's forehead, gently tilt their head back, then lift their chin using two fingers of your other hand under their chin – when you do this you open their airway.
  - Take a normal breath, make a seal around their mouth and breathe out steadily.
  - The person's chest should rise and fall. Keeping the person's head back and the chin lifted, take your mouth away, take another normal breath, and give a second rescue breath. The two breaths should take no longer than five seconds.

Step 5: Repeat until an ambulance arrives

Repeat 30 compressions and two rescue breaths.

Complications of CPR

- Fractures of ribs or the sternum from chest compression.
- Gastric insufflations from excessive artificial respiration.

9.9 Disaster

A disaster is a sudden calamitous event that seriously disrupts the functioning of a community or society and causes losses that exceeds the community or societys ability to cope using its own resources.

Red Cross (1975) defines Disaster as "An occurrence such as hurricane, tornado, storm, flood, high water, wind-driven water, tidal wave, earthquake, drought, blizzard, pestilence, famine, fire, explosion, building collapse, transportation wreck, or other situation that causes human suffering or creates human that the victims cannot alleviate without assistance."

DISASTER' alphabetically means:

D - Destructions
I - Incidents
S - Sufferings
A - Administrative, Financial Failures.
S - Sentiments
T - Tragedies
E - Eruption of Communicable diseases.
R - Research programme and its implementation

9.9.1 Types of disaster

Types of disaster	Examples
Natural disaster	earthquake, floods, hurricane, tsunami
Manmade disaster	nuclear accidents, industrial accidents
Hybrid disaster	spread of disease in community global warming.

Classification of First Aids during Disasters

Type of Disaster	Possible First Aid Services
Fire	1) Assist people to evacuate the affected premises through the emergency exit or safest route. 2) Ensure that electrical fittings are untouched. 3) Shut down all electrical connections, by putting off the electrical mains. 4) Avoiding the sprinkling of water on fire effected person or objects. 5) Appropriate usage of fire extinguishers. 6) Protecting children from the impact of the fire. 7) assist the firemen once the fire services personnel arrives.
Earthquake	1) Ask all the people residing inside the building to come out in open space. 2) Pass on the message to all possible known contacts in the area through telephone. 3) Give priority to save human lives rather than protecting non-living objects. 4) Protect the children from building breakdown etc.
Cyclone	1) Protect the humans from high speed winds and heavy rains. 2) Ensure smooth flow of water so as to prevent flooding and water clogging. 3) Protect external electrical and electronic fittings from lightning associated with cyclone, which may result in fire.
Flood	1) Protect people from water currents.

Type of Disaster	Possible First Aid Services
	2) Protect living beings from water borne diseases 3) Ensure everyone consumes non-contaminated food and water. 4) Arranging essentials and necessities if the water level is increasing. 5) Moving to safer places if the water level isn't receding after a point of time.

The first aid immediately after a disaster may consist of the following-

1) Attending to the individuals who have broken limbs, bones and apply local massage therapy.
2) Disinfecting the body parts/areas where there has been minor bruises with antiseptic and then plastering those areas with bandage.
3) Attending the parts having burns.
4) Putting in place a working communication system.
5) Prevent the spread of contaminated food and drinking water.
6) Provide post-accident SOS support services to all the affected individuals.

9.9.2 Disaster Triage

The word triage is derived from the French word trier, which means, "to sort out or choose."

"Triage is a process which places the right patient in the right place at the right time to receive the right level of care"

(Rice & Abel, 1992)

Types of Triage

There are two types of triage:

1. Simple triage
2. Advanced triage

Simple Triage

Simple triage is used in a scene of mass casualty, in order to sort patients into those who need critical attention and immediate transport to the hospital and those with less serious injuries.

S.T.A.R.T. (Simple Triage and Rapid Treatment) is a simple triage system that can be performed by lightly trained lay and emergency personnel in emergencies.

Triage separates the injured into four groups:

- 0 – The deceased who are beyond help
- 1 – The injured who can be helped by immediate transportation
- 2 – The injured whose transport can be delayed
- 3 – Those with minor injuries, who need help less urgently

Advanced Triage

Advanced care will be used on patients with less severe injuries. Because treatment is intentionally with held from patients with certain injuries

It is used to divert scarce resources away from patients with little chance of

survival in order to increase the chances of survival of others who are more likely to survive.

Principles of advanced triage is

- "Do the greatest good for the greatest number"
- Preservation of life takes precedence over preservation of limbs.

Advanced Triage Categories

CLASS I (EMERGENT) RED IMMEDIATE

- Victims with serious injuries that are life threatening but has a high probability of survival if they received immediate care.
- They require immediate surgery or other life-saving intervention, and have first priority for surgical teams or transport to advanced facilities; they "cannot wait" but are likely to survive with immediate treatment.

"Critical; life threatening—compromised airway, shock, hemorrhage"

CLASS II (URGENT) YELLOW DELAYED

- Victims who are seriously injured and whose life is not immediately threatened; and can delay transport and treatment for 2 hours.
- Their condition is stable for the moment but requires watching by trained persons and frequent re-triage, will need hospital care (and would receive immediate priority care under "normal" circumstances).

"Major illness or injury;—open fracture, chest wound"

CLASS III (NON-URGENT) GREEN MINIMAL

- "Walking wounded," the casualty requires medical attention when all higher priority patients have been evacuated, and may not require monitoring.
- Patients/victims whose care and transport may be delayed 2 hours or more.

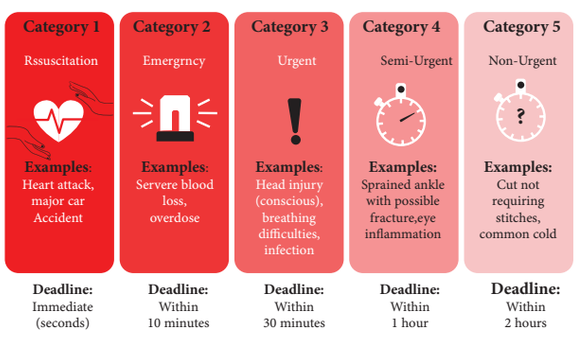
"minor injuries; walking wounded—closed fracture, sprain, strain"

CLASS IV (EXPECTANT) BLACK EXPECTANT

They are so severely injured that they will die of their injuries, possibly in hours or days (large-body burns, severe trauma, lethal radiation dose), or in life-threatening medical crisis that they are unlikely to survive given the care available (cardiac arrest, septic shock, severe head or chest wounds);

They should be taken to a holding area and given painkillers as required to reduce suffering.

"Dead or expected to die—massive head injury, extensive full-thickness burns"



9.10 Role of Nursing in Disasters

"Disaster preparedness, including risk assessment and multi-disciplinary management strategies at all system levels, is critical to the delivery of effective responses to the short, medium, and long-term health needs of a disaster-stricken population." (International Council of Nurses, 2006)

Major Roles of Nurse in Disasters

1. Determine magnitude of the event
2. Define health needs of the affected groups
3. Establish priorities and objectives
4. Identify actual and potential public health problems
5. Determine resources needed to respond to the needs identified
6. Collaborate with other professional disciplines, governmental and non-governmental agencies
7. Maintain a unified chain of command
8. Communication

Consider These Facts

- 25% of all emergency room visits can be avoided with basic first aid and CPR certification
- Sudden cardiac arrest represents 13% of all workplace deaths
- Nearly 5 million workers were injured on the job in 2012, costing companies $198.2 billion
- 75% of all out-of-hospital heart attacks happen at home

SUMMARY

- First aid is the initial assistance or treatment given to a casualty for any injury or sudden illness. The First aid is not an end by itself. It indicates that the person is in need of a "Secondary Aid"
- A simple way to remember the aims of first aid is to think of the **"Three Ps"-Preserve / Prevent / Promote**.
- A wound is an injury in which the skin is cut or penetrated.
- Bleeding, technically known as hemorrhaging, is the loss of blood escaping from the circulatory system.
- first aid mnemonic **PEEP** to remember how to deal with a severe bleeds. **P**osition, **E**xpose & examine, **E**levation, **P**ressure.
- Shock is a syndrome that results from a decrease in effective circulating blood volume in the body as a result of injury or illness
- Shock, a potentially life-threatening condition in which the organs and tissues of the body are not receiving an adequate flow of blood.
- To manage severe injuries follow. **DRSABCD**
- A break or crack in a bone is called a fracture.

- A dislocation is where a bone has been displaced from its normal position at a joint.
- Respiratory emergencies are medical emergencies characterized by difficulty in breathing or inability to breathe.
- Poisonous bites.
- CPR stands for cardiopulmonary resuscitation. It's a life saving medical procedure which is given to someone who is in cardiac arrest. It helps to pump blood around the person's body when their heart can't.
- There are 6 Major CPR steps.
- Bandages are used to prevent contamination of wound by hold dressings in position, provide support to the part that is injured, sprained or dislocated joint and to prevent & control hemorrhage.

EVALUATION

I. Choose the correct answer

1. First Aid is
- a. Initial care of the ill or injured
- b. First response to natural disasters
- c. How to use a First Aid kit
- d. Medical treatment of an injured person

2. The first step in managing a First Aid situation is
- a. Move the casualty out of the car
- b. Ask the casualty if they are in pain
- c. Sit the casualty up
- d. Check for danger, using all your senses

3. Technique used open the airway of an unconscious casualty is
- a. Head tilt and chin lift.
- b. Jaw thrust.
- c. Head tilt and jaw thrust.
- d. Lift the chin.

4. The medical condition which develop due to severe blood loss is
- a. Shock.
- b. Hypoglycemia.
- c. Anaphylaxis.
- d. Hypothermia.

FLYGH8

5. An open fracture is
- a. A fracture in which the bone ends can move around.
- b. A fracture in which the bone is exposed as the skin is broken.
- c. A fracture which causes complications such as a punctured lung.
- d. A fracture in which the bone has bent and split.

6. The correct ratio of chest compressions to rescue breaths for use in CPR of an adult casualty is
- a. 2 compressions: 30 rescue breaths.

b. 5 compressions: 1 rescue breath.

c. 15 compressions: 2 rescue breaths.

d. 30 compressions: 2 rescue breaths.

7. What does the 'A' stand for in the acronym DRABC?

a. Accident b. Airway

c. Ambulance d. Alert

8. Which is more serious?

a. Heat Stroke

b. Heat Exhaustion

c. Heat Cramps

d. Heat Rash

9. The first action to be taken when treating an electrical burn is

a. Ensure that the casualty is still breathing.

b. Wash the burn with cold water.

c. Check for danger and ensure that contact with the electrical source is broken.

d. Check for level of response.

10. What steps would you take to control bleeding from a nosebleed?

a. Sit casualty down, lean forward and pinch soft part of nose.

b. Sit casualty down, lean backward and pinch soft part of nose.

c. Lie casualty down and pinch soft part of nose.

d. Lie casualty down and pinch top of nose.

II. Answer the following questions in one (or) two lines.

11. Explain the golden rules of first aid.

12. Write the first aid management for frost bite.

13. What are the causes of unconsciousness and explain the first aid management for an unconscious patient?

14. Write the rules for applying roller bandages.

15. List the first aid equipments.

III. Write short notes

16. Snake bite.

17. Burns and scalds.

18. Drowning.

19. Disaster Nursing.

20. Methods of handling and transporting injured patients.

IV. Write in detail

21. What is CPR? Explain in detail about the indication, contraindication and steps of CPR.

22. First aid management for Poisoning.

23. Elaborate the types of Bandages.

24. Explain Respiratory emergencies and its management.

25. Write the first aid management for shock.

A-Z GLOSSARY

1. **Anaphylaxis** (*மிகையுணர்வுக்கம்*), a life-threatening condition in which the airway can become constricted and the patient may go into shock.
2. **Battlefield first aid** (*போர்க்களத்தில் முதலுதவி*) — This protocol refers to treating shrapnel, gunshot wounds, burns, bone fractures, etc. as seen either in the 'traditional' battlefield setting or in an area subject to damage by large-scale weaponry, such as a bomb blast.
3. **Bone fracture** (*எலும்பு முறிவு*), a break in a bone initially treated by stabilizing the fracture with a splint.
4. **Burns** (*தீப்புண்*), which can result in damage to tissues and loss of body fluids through the burn site.
5. **Cardiac Arrest (***இதய நிறுத்தம்***)**, which will lead to death unless CPR preferably combined with an AED is started within minutes.
6. **Choking** (*மூச்சுதிணறல்*), blockage of the airway which can quickly result in death due to lack of oxygen if the patient's trachea is not cleared,.
7. **Cramps** (*தசை பிடிப்பு*) in muscles due to lactic acid build up caused either by inadequate oxygenation of muscle or lack of water or salt.
8. **Heart attack** (*மாரடைப்பு*), or inadequate blood flow to the blood vessels supplying the heart muscle.
9. **Hair tourniquet** (*குருதி வழிதலைத் தடுக்க குருதி நாடியை இறுக்க கட்டும் துணி*) a condition where a hair or other thread becomes tied around a toe or finger tightly enough to cut off blood flow.
10. **Seizures** (*வலிப்பு*), or a malfunction in the electrical activity in the brain.
11. **Sprains and Muscle strains** (*தசை விகாரங்கள் மற்றும் சுளுக்கு*), a temporary dislocation of a joint that immediately reduces automatically but may result in ligament damage.
12. **Stroke** (*பக்கவாதம்*), a temporary loss of blood supply to the brain.

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ICT Corner

First Aid

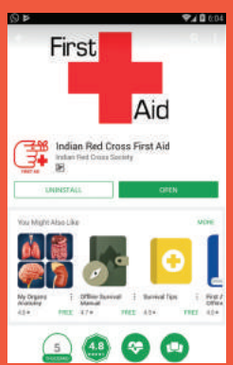
Through this activity you will be understand the procedures of First Aid.

Step - 1 Open the browser and paste the link given below (or) by typing the URL given. You can download and install the ''First Aid" app.

Step - 2 Open the App, you can see many options like Emergency, Instructions, Call etc. Among these options, select 'Emergency' and you can see many types of illnesses and select 'Burns'.

Step - 3 You can see the First Aid steps to be followed in case of burns.

Step - 4 Click on 'Instructions' in main page and select CPR. You can see the first aid steps for CPR.



Step 1

Step 2

Step 3

Step 4

First aid learning app's URL:

https://play.google.com/store/apps/details?id=org.indianredcross.firstaid&hl=en

*Pictures are indicative

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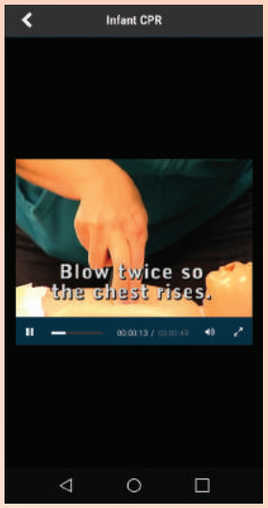
ICT Corner

CPR, AED and Choking



Learn the first aid procedures of CPR, AED and Chocking.

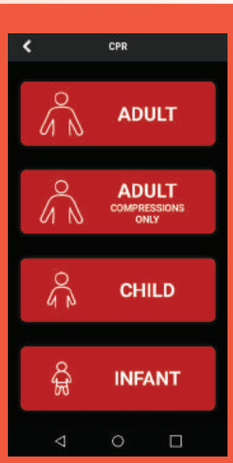
Step - 1 Use the URL or scan the QR code to download 'Resuscitate' app in your smartphone. Tap 'CPR' tab and to enter the procedure list.

Step - 2 Select the type of patient list and observe the procedure to be followed.

Step - 3 Reach the home page by tapping back button from the top of the page and enter 'AED' procedure list to observe.

Step - 4 Then enter 'Chocking' procedure list and observe the procedures for every age group of people.

Step 1



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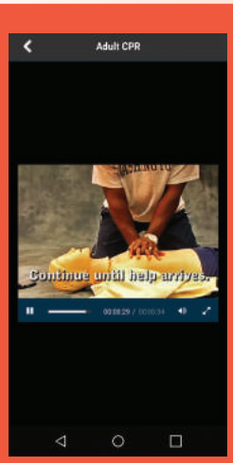
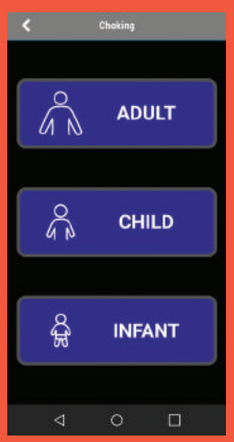


Step 3



Step 4

URL:

https://play.google.com/store/apps/details?id=org.learncpr.videoapp

*Pictures are indicative

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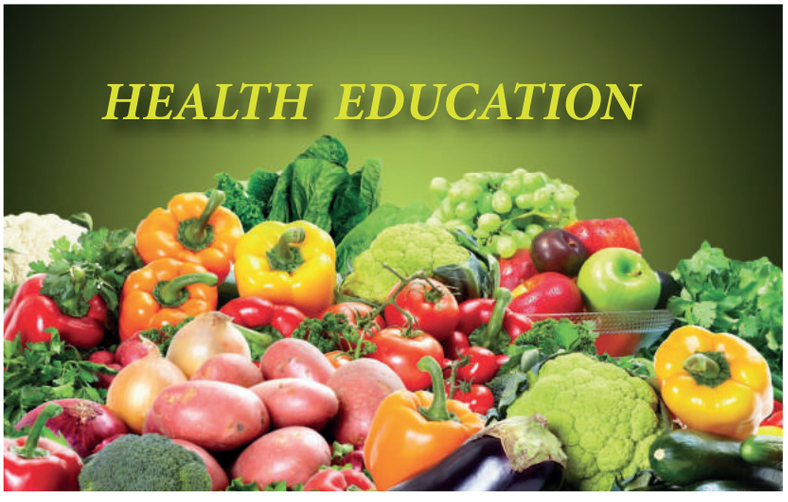
UNIT 10

Health Education and Audio visual Aids

LEARNING OBJECTIVES

At the end of the unit, the students will gain adequate knowledge regarding Health Education and AV Aids and will develop desirable skill and positive attitude in following the principles for health educating the people by using appropriate AV Aid at all setting.

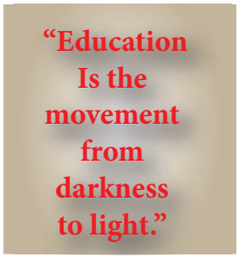
- define the term health education
- discuss the concept of health education
- enumerate the goal of health education
- list the objectives of health education
- explain the principles of health education
- extrapolate the roles and responsibilities of health educator
- narrate the different methods and approaches to health education
- brief out the various audio visual aids



HEALTH EDUCATION AND AUDIO VISUAL - Aids

10.1 Introduction

Education brings change in behaviour of the individual in a desirable manner. Education can help to increase knowledge. It is often assumed that knowledge determines attitudes and attitudes determine behaviour.



Health education is a powerful and effective medicine in the treatment and prevention of illness. It is the cheapest but very effective tool. If administered with great awareness by every health worker, in any setting- hospital, school, health centre, home and community as a whole-it will be the best tool in promoting health. It is "to win friends and influence people" in order that they may attain the best of health.

10.1.1 Definition, Aims & Goal of Health Education

Definition

Health education is defined as "the process by which individuals and groups of people learn to behave in a manner conducive to the promotion, maintenance, or restoration of health.

John M. Last

According to National Conference on Preventive Medicine in USA "Health education is a process that informs, motivates and helps people to adopt and maintain healthy practices and life style. Advocates environmental changes as needed to facilitate this goal and conducts professional training and research to the same end.

"A process aimed at encouraging people to want to be healthy, to know hjow to stay healthys, to do what they can individually and collectively to maintain health and to seek help when needed". -Alma-ata (1978)

10.1.2 Aims of Health Education

The definition adopted by WHO in 1969 and the alma ata declaration adopted in 1978 provided in useful basis for formulating the aims and objectives of health education which may be started as below;

1. To encourage people to adapt and sustained health promoting lifestyle and practices
2. To promote the proper use of health services available to them
3. To arouse interest, provide new knowledge, improve skills and change attitudes in making rational decision to solve their own problems.
4. To stimulate individual and community self-reliance and participation to achieve health development through individual and

community involvement at every step from identifying the problem to solving them.

10.1.3 Goal of health education

The goal of Health education is teaching people to live life to its healthiest – that is to strive towards achieving ones health potentials under given socio-cultural, geo-climatic conditions, at every opportunity a nurse gets to teach a client / patient.

10.2 Objectives of Health Education

10.2.1 Informing People

Dissemination of information to the people regarding prevention of disease and promotion of health. This creates awareness of health needs, problems, take away the barrier of ignorance and misconceptions about health and Disease.

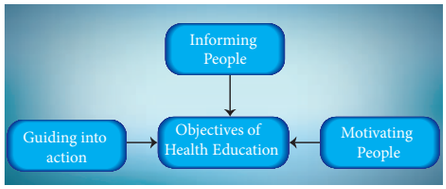
10.2.2 Motivating People

People should be motivated to change their ill habits, way of living as many diseases can be corrected by alteration of human behaviour or changes in health practices which are detrimental to health.

10.2.3 Guiding into action

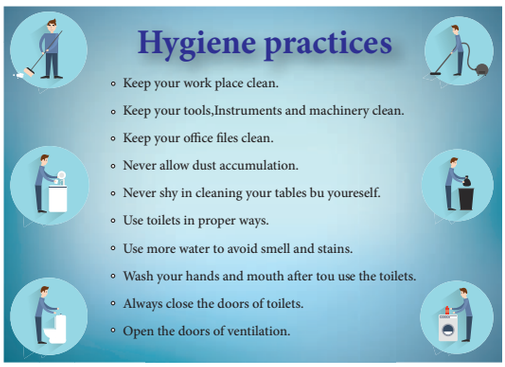
People should be motivated, communicated, and educated, to adopt and maintain health practices and lifestyle practices.

Health Education should be made an integral part of Education, Which will enable to change their life styles



DO YOU KNOW?

1. These are the important hygiene practices a child has to inculcate.
2. Identify and carryout five hygiene practice in your school premises



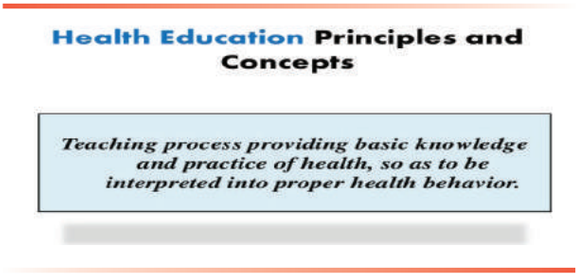
10.2.4 Areas of health education

Health education is as wide as community health. Every aspect of community health has an educational component. In practice, the content of health education may be

divided in to the following divisions for the sake of simplicity

1. ***Human biology***; The topics which may be covered include the structure and function of the body, how to keep physically fit ,the need for the exercise ,rest and sleep; the effect of alcohol, smoking and drugs on the body and first aid
2. ***Nutrition*;** Education in nutrition holds an important place in the fight against malnutrition. They should be educated about the nutritive value of foods; storage, preparation, cooking, serving and eating of food.
3. ***Hygiene*;** There are two aspects of hygiene –personal and environmental. both are important areas for health education. Personal hygiene includes bathing, clothing, washing hands, toilet, care of feet, nail, teeth; spitting ,coughing, sneezing ,personal appearance and inculcation of clean habits in the young. Environmental hygiene has a 2 aspects –domestic and community. Domestic hygiene comprises that of the home, use of soap and water, lighting, ventilation, food hygiene, control of rats and mice etc. In community hygiene, we teach the desirability of safe water, the benefits of drainage, good housing, town planning –in short, everything about the environment in which people live.
4. ***MCH and family planning*;** The fears of the mother about pregnancy and childhood can be dispelled only by health education

10.3 Principles of health education



Some basic principles that should be followed in imparting health education. (It can be summed up using a mnemonics -**"MILK CPR LG CSF")**

M: Motivation

I: Interest

L: Learning by doing

K: Known to unknown

C: Credibility

P: Participation

R: Reinforcement

L : Leader

G : Good human relation

C : Comprehensive

S : Setting an example

F : Feed back

Students Activity

Divide students into groups and ask them to write slogans for world health days. The best slogan can be selected and awarded.

10.3.1 Motivation

In every person there is a fundamental desire to learn. Stimulation or awakening of this desire is called motivation. The two types of motives - primary and secondary motives. The primary motives are sex, hunger, survival; these are inborn desires. The secondary motives are praise, love, rewards, punishment and recognition.

10.3.2 Interest

It is well -known psychological principle, that unless people are interested, they will not learn. Health education should therefore relate to the interests of the people. All health teaching, in order to be effective, must be based on the health needs of the people.

10.3.3 Learning by doing

Learning is an action process. The following Chinese proverbs emphasizes the importance of learning by doing

"IF I HEAR, I FORGET

IF I SEE, I REMEMBER

If i do, i know"

10.3.4 Known to unknown

We must always go from "simple to complex"; from concrete to the abstract, from easy to difficult and from known to unknown. These are the rules of teaching. One should start educating people from what they know already and then expose them to new knowledge.

10.3.5 Credibility

It is the degree to which the message to be communicated is perceived as trustworthy by the receiver. It must be based on facts. It must be consistent, compatible with scientific knowledge and also with local culture, educational system and social goods.

10.3.6 Participation

It means taking part in or involving oneself or contributing towards something. It is one of the active principles in learning. It is better than passive learning. Personal involvement is more likely to lead to personal acceptance.

10.3.7 Reinforcement

Few people can learn all that is new in a single period. Repetition at intervals is necessary. If there is no reinforcement there is a possibility that the individual will forget what is taught.

10.3.8 Leader

We learn a best from people whom we respect and regard in the work of health education. We penetrate the community through local leaders. e.g. School teacher, Agents, etc. Leader understands the needs and demands of the community and provides proper guidance.

10.3.9 Good human relations

The health educator must be kind and sympathetic. People must accept him as their real friend. Good relationships that lead to good communication are of utmost importance in health education.

10.3.10 Comprehension

In health education, we must know the level of understanding, education and literacy of the people to whom the teaching is directed. The teaching should be within the mental capacity of the people.

10.3.11 Setting an example

The health Education should set a good example in the things he is teaching. e.g. If he is explaining the hazards of smoking, he will not be very successful, if himself smokes.

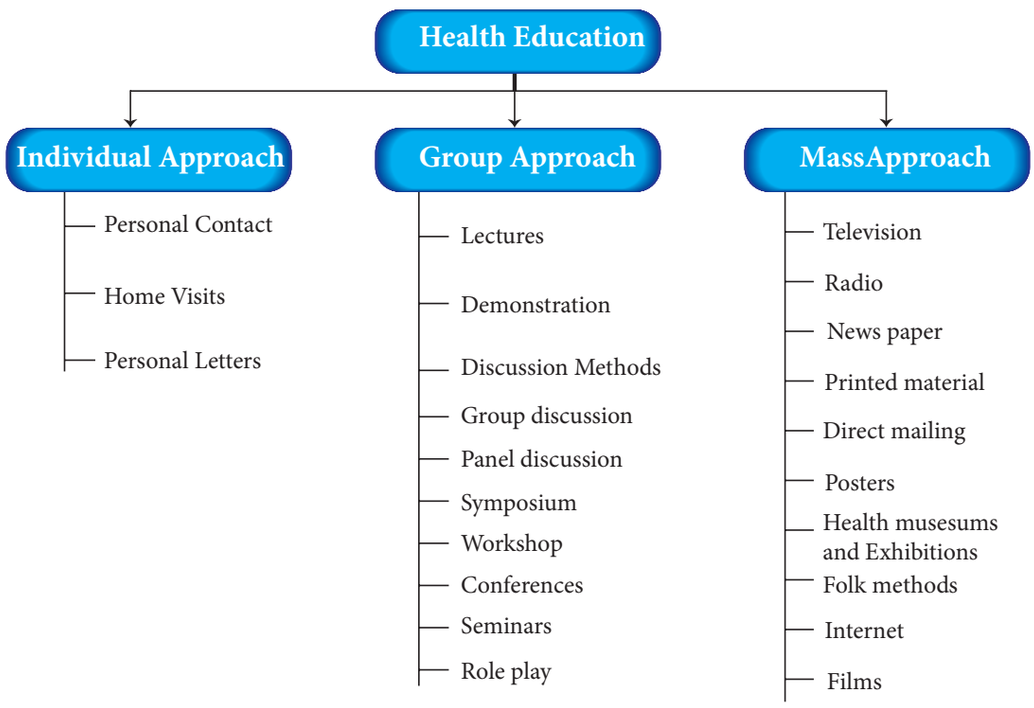
10.3.12 Feed back

It is one of the key concepts of the system's approach. For effective communication, feed back is of paramount importance.

"FOR GOOD HEALTH'S SAKE, RUN, JUMP, AND SHAKE."

10.4 Methods & Approaches of Health Education

FMH8KI



10.4.1 Methods of health education

Health education is carried out at 3 main levels;

- Individual Approach.
- Group Approach.
- General Approach/Mass.

Individual Health Education:

Doctors and nurses, who are in direct contact with patients and their relatives, have opportunities for much individual health education. The topic selected should be relevant to the situation. For instance, a mother who has come for delivery should be told about child birth-not about malaria eradication.

The biggest advantage of individual health teaching is that we can discuss, argue and persuade the individual to change his behaviour. The disadvantage is that the numbers we reach are small.

Group Health Education:

The groups are many – mothers, school children, patients, industrial workers – to whom we can direct health teaching. The choice of subject in group health teaching is very important; it must relate directly to the interest of the group. For instance, mothers may be taught about baby care; school children about oral hygiene; a group of TB patients about tuberculosis, and industrial workers about accidents.

10.4.2 Methods of Group Teaching

These have been classified as below:

(i) One – way or didactic methods:

- Lecture
- Films
- Charts
- Flannel graph
- Exhibits
- Flashcards

1. **Lectures:**

   Lectures are the most popular method of health teaching. In this, communication is mostly one-way, i.e., the people are only passive listeners; there is no active participation on their part in learning. How impressive and effective the lecture is, depends upon the personality and reputation of the speaker. A lecture does provide basic information on the subject, but it may fail to change the health behaviour of the people. Nevertheless lectures have an important place in the health education of small groups.

2. **Films, charts & Puppets:**

   These are mass media of communication. They can be of value in educating small groups.

Suspense Charts:

Each section of the charts is covered and is exposed one by one to reveal the story or ideas without exposing the whole chart at a time.

Puppets:

Puppets are dolls made by hand and a story can be narrated using them it is a popular teaching aid to health teaching.

3. **Flannel graph:**

   A flannel graph consists of a wooden board over which is pasted or fixed a

piece of rough flannel cloth or khadi. It provides an excellent background for displaying cut out pictures and other illustrations. These illustrations and cut out pictures are provided with a rough surface at the back by pasting pieces of sand-paper, felt or rough cloth, and they adhere at once, put on the flannel. Flannel graph is a very chief medium, easy to transport and promotes thought and criticism. The pictures must be arranged in proper sequence based on the talk to be given.

4. **Exhibits:**

These consist of objects, models, specimens, etc. They convey a specific message to the observer. They are essentially mass media of communication.

5. **Flash Cards:**

They consist of a series of cards, approximately 10 x 12 inches – each with an illustration pertaining to a story or talk to be given. Each card is "flashed" or displayed before a group as the talk is in progress. The message on the cards must be brief and to the point.

They are pictures arranged in sequence, which illustrate a story support the cards in front of the chest and practice in order to make the teaching effective. Use a Pointer so that the picture is not covered by your hand.

(ii) Two-way or Socratic Methods:

- Group discussion
- Panel Discussion
- Symposium
- Workshop
- Role playing
- Demonstration

1. **Group Discussion:**

Group discussion is considered a very effective method of health teaching. It is a tow-way teaching method. People learn by exchanging their views and experiences.

To be effective, the group should comprise not less than 6, and not more than 12 people.

There should be a group leader who initiates the subject, helps the discussion in the proper manner, prevents side-conversations, encourages everyone to participate and sums up the discussion in the end.

The proceedings of the group discussion are recorded by a "recorder", who prepares a report on the subject and agreements reached.

2. **Panel Discussion:**

Panel discussion is a novel method of health education. The success of the panel depends upon the Chairman.

The Panel consists of a Chairman or Moderator, and 4 to 8 speakers.

The Panel sits and discusses a given problem in front of a group or audience.

The Chairman opens the meeting, welcomes the group and introduces the panel speakers who are experts on the subject.

He introduces the topic briefly and invites the panel speakers to

present their points of view. There are no set speeches, but only informal discussion among the panel speakers.

It is said that the discussion should be spontaneous and natural.

After the subject has been discussed by the panel speakers, the audience is invited to take part. If properly planned and guided, panel discussion can be an effective method of health education.

3. **Symposium:**

A Symposium is a series of speeches on the selected subject by experts. There is no discussion on the subject by the experts. In the end, the audience may raise questions and contribute to the Symposium.

4. **Workshop:**

The Workshop consists of a series of meetings. The total workshop is divided into small groups, and each group will choose a Chairman and a recorder. Each group solves a part of the problem with the help of consultants and resource personnel. Learning takes place in a friendly, happy and democratic atmosphere under expert guidance.

5. **Role Play:**

Role Play or socio-drama is a particularly useful device for putting up problems of human relationship. The group members enact the roles as they have observed or experienced them, e.g. the expectant mother in an antenatal clinic, the public health nurse on a home visit, etc. The size of the group should not be more than 25. Role play is followed by a discussion of the problem.

6. **Demonstrations:**

Practical demonstration is an important technique of the health education. We show people how a particular thing is done – using a tooth-brush, bathing a child, feeding an infant, etc. A demonstration leaves a visual impression in the minds of the people.

Education of the general public (Mass Approach) :

For the education of the general public, we employ "mass media of communication' – Posters, health magazines, films, radio, television, health exhibitions and health museums. Mass media are generally less effective in changing human behaviour than individual or group methods. But however, they are very useful in reaching large numbers of people with whom otherwise there could be no contact. For effective health education mass media should be used in combination with other methods.

Individual Approach

Advantage	Disadvantage
■ Credible	■ Expensive
■ Permit 2 way discussion	■ Time Consuming
■ Can be motivational, influential and supportive	■ Limited Audience
■ Most effective for teaching, caring and helping	

Group Approach

Advantage	Disadvantage
■ Familiar, trusted and influential ■ Provide Motivation / support more than media alone ■ Can be inexpensive ■ Offer shared experiences ■ Reach large intended audience in one place	■ May not provide individual personal attention ■ Needs approval from organization Can be costly and time consuming

Mass Approach

Mass Media	Advantage	Disadvantage
News Paper	■ Reach broad intended audience rapidly ■ Can convey health news/ break thoughts more thoroughly than T.V ■ Intended audience has the chance to clip reread, en template and pass along materials	■ Larger circulating papers may take only paid advertisement ■ Exposure is limited only to one way ■ Article placement requires contacts and may be time consuming
Internet	■ Reach large number of people rapidly ■ Updated and disseminated information ■ Control information provided ■ Tailor information specifically for intended audience can be interactive ■ Demonstration can be by individual and graphs ■ Can use banner advertisement to direct intended audience	■ Can be expensive ■ Many people do not have access to internet ■ Intended audience must be proactive ■ May require monitoring ■ May require maintenance over time

Radio	■ Range of intended audiences with known listening preference ■ Opportunity for direct intended audience involvement ■ Distribution is Expensive	■ Reaches Smaller intended audiences than T.V ■ Public service ads run infrequently and at low listening times ■ Many stations have limited formats that may not be conducive to health messages ■ Difficult for intended audiences to retain or pass on material
TV	■ Reaches potentially the largest & widest range ■ Combination of Audio visual is effective in emotional appeals and demonstration of behaviours ■ Can reach low – income audience ■ Specific programmes can reach specific intended audience ■ Opportunity for direct intended and audience involvement	■ Advertisement is expensive to produce ■ Running infrequently and in low viewing times ■ Message can be observed by commercial culture ■ Some stations reach small intended audience ■ Promotion can result in huge demand ■ Difficult to retain or pass on materials

10.5 Role and Responsibility of health educator

The seven areas of responsibilities which are shown below.

Responsibility I: Assessing Individual and Community Needs for Health Education

- Provides the foundation for program planning
- Determines what health problems might exist in any given groups
- Includes determination of community resources available to address the problem
- Community Empowerment encourages the population to take ownership of their health problems
- Includes careful data collection and analysis

- It is essential for healthy life
- to find out the vital health statistics in community

Responsibility II: Plan Health Education Strategies, Interventions, and Programs

- Actions are based on the needs assessment done for the community (see Responsibility I)
- Involves the development of goals and objectives which are specific and measurable
- Interventions are developed that will meet the goals and objectives
- According to Rule of Sufficiency, strategies are implemented which are sufficiently robust, effective enough, and have a reasonable chance of meeting stated objectives

Responsibility III: Implement Health Education Strategies, Interventions, and Programs

- Implementation is based on a thorough understanding of the priority population
- Utilize a wide range of educational methods and techniques

Responsibility IV: Conduct Evaluation and Research Related to Health Education

- Depending on the setting, utilize tests, surveys, observations, tracking epidemiological data, or other methods of data collection
- Health Educators make use of research to improve their practices.

Responsibility V: Administer Health Education Strategies, Interventions, and Programs

- Administration is generally a function of the more experienced practitioner
- Involves facilitating cooperation among personnel, both within and between programs

Responsibility VI: Serve as a Health Education Resource Person

- Involves skills to access needed resources, and establish effective consultative relationships.

Responsibility VII: Communicate and Advocate for Health and Health Education

- Address diverse audience in diverse settings
- Translates scientific language into understandable information
- Formulates and support rules, policies and legislation
- Advocate for the profession of health education

10.6 Audiovisual Aids

Audiovisual aids play an important role in health education. They can be classified into three groups – purely auditory aids, purely visual and a combination of both auditory and visual aids

Media or materials in health education can be used for different purposes and for different groups of

people. Learning and understanding seems to result when more senses, such as touch, sight and hearing are reached by the media.

If used properly they create interest and motivate people to learn. Learning is made more permanent because these aids supply a concrete basis for learning rather than abstract thinking.

10.6.1 Types of Audio - Visual Aids:

No health education can be effective without audio-visual aids. Audio-visual aids can be classified into 3 groups – (1) purely auditory;(2) Purely visual; (3) combined audio-visual.

(1) Auditory Aids

(2) Visual Aids

10.6.2 Combined Audio-Visual Aids

- Sound films
- Slide tape combination
- Television
- Computer & Internet
- A Knowledge of the advantages, disadvantages and limitations of each audio-visual and is necessary in order to take proper use of them. Audio-visual aids are means to an end; not an end in themselves.

10.6.3 Audio Visual Aids (Used in Mass Media:)

(1) **Posters:** Posters are intended to attract public attention. Therefore, the material needs artistic preparation. The message on the poster should be short, simple, direct and one that can be taken at a glance and easy to understand. The life of a poster is usually short and needs frequent replacement. As a medium of health, education, posters are not effective in changing human behaviour.

Posters should be colourful to catch the eye and convey the message clearly, Simple language and short sentences should be used. If used in the clinic, Outpatients department or health centers, they should be changed frequently. When possible explain the message to the learners and use them to supplement the teaching

(2) **Health Magazines**: A good health magazine can be an important channel of communication. The material needs expert presentation.

The Swasth Hind from Delhi and World Health from WHO are important health magazines. The health magazines stimulate awareness among people.

(3) **Press:** Newspapers are the most widely distributed of all forms of reading material. They are an important channel of communication to the people.

(4) **Films:** Films are very expensive to produce, and they get out-of-date very quickly. But film-shows attract large gathering.

(5) **Radio and TV:** These are found nearly in every home. They are potent instruments of education. Radio talks should not exceed 15 minutes.

(6) **Health Exhibitions**: If properly organized, health exhibitions can attract large numbers of people. Health exhibitions are used in connection with key points of interest – e.g., fairs and festivals, mass campaigns, etc.

(7) **Health Museums**: A good health museum can be a very effective mass media of education, such as the one at Hyderabad in Andhra Pradesh.

(8) **Indigenous Media**: Indigenous Media like katha-vartha, prabhat pheries, songs and dramas have roots in our culture. Health messages can be carried through these media.

10.6.4 Selection and uses of Audiovisual Aids

The following criteria are guides for the selection of the books and other printed teaching materials. How each applies in a given instance depends upon the teaching objectives, which have been set up to meet particular needs.

Students Activity

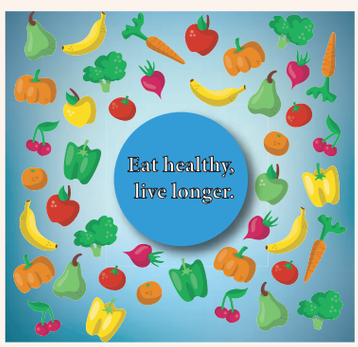
Divide students into group and encourage each group to prepare different types of AV-aid like poster, flash card, etc.

Organize an AV- aid exhibition in your school and conduct interschool competition

DO YOU KNOW?

The below has been given the benefits of bowling.

Now ask the students to identify the benefits of each activity



10.6.5 Criteria for selecting Audiovisual Aids

1. The facts should be scientifically accurate
2. Needed materials should be present
3. All the information should be pertinent
4. It should cover the entire requirements
5. All the ideas should be essential, significant and important to clear understanding.

DO YOU KNOW?

A health tip to keep you fit

10.7 Administration and Organization

The Government of India established a Central Health Education Bureau at Delhi in 1956 to promote and co-ordinate health education work in the country. Many State Governments in India now have health Education Bureau in their Health Directorates. There are also other special agencies in the country such as the Directorate of Advertising and Visual Publicity (DAVP), Government has a responsibility for the health education of the general public. Press Information Bureau, and the All India Radio (AIR), and TV which are active in health education work. At the International Level, there is the International Union for the Health Education, with headquarters in Paris, whose main task is to promote the creation of national committees and societies for health education.

SUMMARY

Health influences ones way of life, personal efficiency and helps the individual to attain the personal goals. Health education is a process aimed at encouraging people to want to be healthy, to know how to stay healthy and to maintain health.

The aim of health education is to help people to develop an awareness of health needs and problems.

In selecting audio visual aids for health education, the facts should be scientifically accurate, pertinent information and cover entire requirements and should be essential, important and clear to understand.

EVALUATION

FMR4M6

I. Choose the correct answer

1. The following is not an objective of health education
   a. Informing people
   b. Motivating people
   c. Guiding into action
   d. Distracting people
2. The principle of awakening of fundamental desire to learn is
   a. Interest

b. Motivation

c. Credibility

d. Feedback

3. The more time-consuming approach of health education is

a. Individual approach

b. Group approach

c. Mass approach

d. Family approach

4. The pictures arranged in sequence which illustrates a story is known as

a. Posters

b. Puppets

c. Flash cards

d. Charts

5. The hand made dolls which narrates a story is known as

a. Puppets

b. Flash cards

c. Charts

d. Posters

II. Answer the following questions in one (or) two lines.

6. Define Health education.

7. Define audio visual aids.

8. List the criteria for selecting audio visual aids.

9. Enumerate areas of health education.

III. Write short notes

10. Differentiate the advantages and disadvantage of Group approach is health education.

11. List the methods of group teaching is health education.

12. Write about the Role and responsibilities of Nurse in health education.

IV. Write in detail

13. Describe the aims and objectives of health education.

14. Explain the principles of health education.

15. Classification of audio visual aids.

16. Describe the Stages in health Education.

17. Explain the methods of Group Teaching.

A-Z GLOSSARY

1. Concept (*கருத்து*) - an abstract idea
2. Comprehensive (*விரிவான/பரந்த*) - including or dealing with all or nearly all elements or aspects of something
3. Credibility (*நம்பகத்தன்மை*) - the quality of being trusted and believed in
4. Criteria (*அடிப்படை/கட்டளை விதிகள்*) - a principle or standard by which something may be judged or decided.

5. Panel discussion (குழு விவாதம்) - is a specific format used in a meeting, conference or convention
6. Reinforcement (வலுவூட்டல்) - the action or process of reinforcing or strengthening.
7. Residue (மிகுதி) - a small amount of something that remains after the main part
8. Restoration (மறு சீரமைப்பு) - the action of returning something to a former owner, place, or condition
9. Statistics (புள்ளி விவரங்கள்) - the practice or science of collecting and analysing numerical data in large quantities

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INTERNET LINKS

- www.smartbowler.com/about-smartbowler/
- https://www.slideshare.net/draneesalsaadi/health-education-principles-and-concepts
- https://www.ncbi.nlm.nih.gov/pubmed/15275179
- https://www.ncbi.nlm.nih.gov/pubmed/11586870

UNIT 11

Pharmacology

FMZZNT

LEARNING OBJECTIVES

After mastering the contents of this lecture, Students will be able to,

- define the terminologies used in pharmacology
- list the importance of pharmacology for nurses
- enlist the sources of drugs
- enumerate the forms of medication
- describe about classification of drugs
- explain about the pharmacodynamics
- describe about pharmacokinetics

உற்றவன் தீர்ப்பான் மருந்து உழைச் செல்வானென்று
அப்பால்தான் கூற்றே மருந்து.

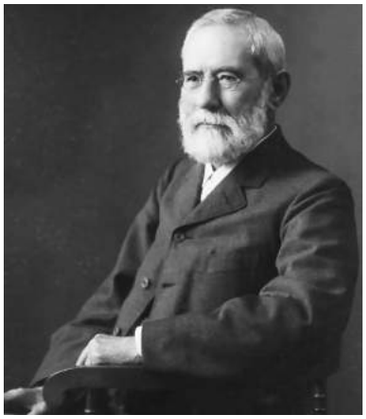
- திருக்குறள்

For patient, leech, and remedies, and him who waits by patient's side,
The art of medicine must fourfold code of laws provide.

11.1 Introduction

Medications are frequently used to manage diseases. Administration of medication is the main responsibility of a nurse. Hence it becomes important that nurses should have a sound knowledge of actions and effects of medications. Administering medication safely requires an understanding of all aspects of pharmacology.

All around the world, registered nurses play an important role in administering medication to patients in a typical busy hospital environment. This duty requires a huge amount of effort on behalf of nurses to stay updated about medical advancements and pharmaceutical drugs. Improving knowledge about medication requires a continuous education on drugs among nurses.



Schmiedeberg obtained his medical doctorate in 1866 with a thesis on the measurement of chloroform in blood. In 1872, he became professor of pharmacology at the University of Strassburg, receiving generous government support in the form of a magnificent institute of pharmacology. He studied the pharmacology of chloroform and chloralhydrate. In 1869, Schmiedeberg showed that muscarine evoked the same effect on the heart as electrical stimulation of the vagus nerve. In 1878, he published a classic text, ***Outline of Pharmacology*, and in 1885, he introduced urethane as a hypnotic.**

11.2 Definition:

The term pharmacology is obtained from the Greek word **"pharmakon"** meaning as drug and "logos" means the study or science. The term "drug" is derived from the French word "drogue" denotes" dry herb".

PHARMACOLOGY:- is the study of drugs. Drugs are the chemical substance that produce therapeutically useful effects.

Pharmacist: A person licensed to prepare and dispense drugs

Pharmacokinetics: It is the study of how medications enter the body, reach their site of action, are metabolized and exit the body

Pharmacodynamics: It is the study of drugs – their mechanism of action, pharmacological action and their side effects which deals with "what the drug does to the body"

11.3 Sources Of Drugs:

There are three varieties of sources – natural, semisynthetic and synthetic. Natural sources are plants, animals, microorganism, minerals, etc. semisynthetic drugs are obtained from natural sources and modified chemically later. Synthetic drugs are produced artificially.

The different sources of drugs are as follows:

Plants – morphine, atropine, digoxin

Animals – insulin

Minerals – ferrous sulphate, magnesium sulphate

Microorganisms – penicillin, streptomycin

Semisynthetic – hydromorphone

Synthetic – most of the drugs used today are synthetic – aspirin, paracetamol

Drugs are also produced by genetic engineering – human insulin, human growth hormone

11.4 Forms of Medication:

Medications are available in a variety of forms or preparations. The form of medication determines the route of administration.

1. Solid forms are tablet, capsule, gelatine capsule (TAB).

2. Liquid forms are syrup, elixir (SYP)

3. Inhalation forms are aerosol, lozenge

4. Topical forms are ointment, lotion

5. Parenteral forms are powder, solution vial

6. Instillation forms are suppository, intraocular disk

DO YOU KNOW?

Anaphylactic reaction may leads to anaphylactic shock which is a medical emergency can lead to sudden death. e.g. penicillin.

11.5 Classification of Drugs

There following are a classification of drugs according to the action

1. **ANALGESICS:-** Drugs used to relieve pain.
2. **ANAESTHETICS:-** Drugs which causes loss of sensation.
3. **ANTI -PYRETICS:-** Drugs which reduce fever.e.g crocin
4. **ANTHELMINTICS:-** Drugs which destroy and expel worms.e.g mebandazole
5. **ANTIDOTES:-** Substance used to counteract effects of poison. eg large quantity of diluted alkali is given to neutralize acid poisoning.
6. **ANTACIDS:-** Substance that react with hydrochloric acid to decrease

the activity of the gastric secretions e.g.gelucil

7. **ANTI-EMETICS:-** Drugs relieving or preventing nausea and vomiting.
8. **ANTI-HISTAMINES:-** The agents which used to prevent or relieve allergies.
9. **ANTI-COAGULANTS:-** Substance which inhibit or decrease blood – clotting process .
10. **ANTI-CONVULSANTS:-** Use to treat convulsion
11. **ANTI- SEPTIC:-** A Substance that inhibit the growth of bacteria.
12. **DIURETICS:-** Which increase the flow of urine.ex. lasix
13. **EMOLLIENT:-** Substance that soften, smooth and protect the skin.
14. **EXPECTORANTS:-** Increase the bronchial secretions and aid in the expulsion of the mucus.
15. **HYPNOTICS:-** Drugs that produce sleep.
16. **HYPOGLYCAEMICS:-** Drugs that lower the blood sugar level.
17. **MUSCLE RELAXANTS:-** Agents used for diminution of tension or functional activity of muscles.
18. **NASAL DECONGESTANTS:-** Drugs which used to relieve the nasal congestion.
19. **NARCOTICS:-** A drugs that reduce complete insensibility.
20. **SEDATIVES:-** Substance which lessen the body activity and induce sleep.
21. **STIMULANTS:-** Increase the functional activity of an organ or system.
22. **TRANQUILLIZERS:-** To calm nervous anxious, excited or disturbed helps client.
23. **VASODILATOR:-** It reduce blood pressure
24. **EMETICS:- Drugs which produce vomiting**
25. **MYDRIATICS:- Drugs which dilate pupil of the eye**

11.6 Importance of Pharmacology for Nurses

1. Understand drugs and how they can affect living things
2. Know the right dosage of drugs and not just quantity
3. Identify and respond to drug interactions, reactions and side effects and treat accordingly
4. Know when to use drugs because some conditions do not need drug therapy
5. Understand the process of drug intake, absorption, distribution, metabolism and elimination.
6. Identify the properties of ideal drugs and otherwise it will create problem.
7. Know the application of pharmacology in nursing with regards to the right of medication administration.

Abbreviations Used Regarding Time of Administration

Abbreviation	Derivation	Meaning
A.C	Ante cibum	Before meals
P.C	Post cibum	After meals
O.D	Omni die	Daily (once a day)
H.S	Hora somni	At bedtime
S.O.S	Si opus sit	If necessary
B.D	Bis in die	Twice a day
T.I.D	Ter in the die	Three times a day
Q.I.D	Quater in die	four time a day
STAT	Statim	At once
Q	Quaque	Every

EXAMPLES:-

- Q4H:- Every 4 hours (6 Times a day)
  8-12-4
  8-12-4
- Q6H:- Every 6 hours (4 Times a day)
  6-12
  6-12

Abbreviations Used Regarding the Route

Abbreviation	Meaning
IM	Intramuscular
P.O	Per Oral
IV	Intravenous
SC	Subcutaneously
ID	Intradermal

11.7 Types of Order

Standing Order

This is one that should be carried out for a specified number of days or until another order cancels it. For example, standing orders given by the medical officer of PHC in emergency situations.

Prn Orders

It states guidelines for administering a medication when needed.

(e.g., pain killers, laxatives.)

One Time Order or Single Order

It is a written order for a medication which is administered only once, (e.g., preoperative medications.)

Stat Order

It is a medication order which is administered immediately and only once,

(e.g., INJ Lasix 20 mg IV stat.)

Telephone Orders

Sometimes after discussion with the doctor about the clients condition over the phone, the nurse may write the ordered medication on the physicians order sheet which is designated as "T.O." The physician must countersign the order at a specified time period, which is usually 48 hours.

11.8 Preventing Medication Error

To help prevent errors, perform 'three checks' and "six rights" when giving medication.

- **THREE CHECKS:**

  Check each medication three times as a nurse:

  1. *BEFORE you our mix or draw up a medication,* check its label against the entry on the MAR. be sure that the name, route, dose, and time match the MAR entry. [medication administration record]
  2. *AFTER you prepare the medication,* and before returning the container to the medication cart or discarding anything, check the label against the MAR entry again.
  3. AT *THE BEDSIDE, check the medication again* before actually administering it.

Observing the "three checks" rule will help you to practice the "six rights"

11.8.1 Six Rights of Medication Administration

Practicing the six rights' will help to ensure accurate administration. This means the nurses will give the right medication to Right patient, by using Right dose, at the Right route in a Right time, and Right document ation is necessory for medication administration.

1. **RIGHT DRUG:**
   - Always check the doctor order before administer.
2. **RIGHT DOSE:**
   - Be sure that the dose is within the recommended range for the patients age and condition.
3. **RIGHT TIME:**
   - Exact time of administration of the medication is needed.
4. **RIGHT ROUTE:**
   - Be sure that the drug is in the proper form for the route ordered. Be sure about site of administration.
5. **RIGHT PATIENT:**
   - Always double check the patients identification. To ensure correct patient.
6. **RIGHT DOCUMENTATION:**
   - After administering of medication, document it immediately on the patients case sheet.

11.8.2 Patient Rights:

In addition to the" "six rights" already discussed, patients also have the following rights.

- **RIGHT REASON:**

  Right to not receive unnecessary medication, for example sleeping pill should be give because the patient is very anxious or cannot sleep not for the convenience of the caregivers.

- **RIGHT TO KNOW:**

  This means that you tell the patient about name of the medication, why it is being given, its action, and potential side effects

- **RIGHT TO REFUSE:**

  The patient always as a right to refuse a medication.

Students Activity

Prepare an album on various forms of medication

DEFINITION

Medication error can be defined as 'a failure in the treatment process that leads to, or has the potential to lead to, harm to the patient'.

These are not adverse drug reactions

Medication errors can occur in:

- choosing a medicine—irrational, inappropriate, and ineffective prescribing, underprescribing and overprescribing;
- writing the prescription—prescription errors, including illegibility;
- manufacturing the formulation to be used—wrong strength, contaminants or adulterants, wrong or misleading packaging;
- dispensing the formulation—wrong drug, wrong formulation, wrong label;
- administering or taking the drug—wrong dose, wrong route, wrong frequency, wrong duration;
- monitoring therapy—failing to alter therapy when required, erroneous alteration.

11.9 Systems of Medication Measurement

Metric system: Most commonly used and convenient system. Basic units of measurements are metre, litre and gram.

Apothecary system: Infrequently used and basic unit of measurements are grain, minim.

Household system: Least accurate and used only in houses. Basic units of measurements are teaspoon, tablespoon.

Conversion within systems:

1g = 1000mg, 1L = 1000ml

Metric	Apothecary	Household
1ml	15 to 16 minim	15 drops
4-5ml	1 fluidram	1 tsp
15-16ml	4 fluidram	1 tbsp
30ml	1 ounce	2 tbsp
240ml	8 ounce	1 cup
480 ml (apprx. 500 ml)	1 pint	1 pint
960 ml (apprx. 1 lt.)	1 quart	1 quart
4800 ml (apprx. 5 lt.)	1 gallon	1 gallon

11.10 Routes of Medication Administration

There are 5 major routes of medication administration that includes:

I. Oral route:

- Oral
- Enteral (through enteral tube)
- Buccal (placing between cheek and gum)
- Sublingual (placing under tongue)

II. Parenteral route:

- Intradermal (under epidermis)

- Subcutaneous (under dermis)
- Intramuscular
- Intravenous
- Intra arterial
- Intra cardiac
- Intra osseous (bone)

III. Topical route:

- Vaginal administration
- Rectal administration
- Inunction (rubbing drug into skin)
- Instillation (placing drug into direct contact with mucous membrane)
- Irrigation (flushing mucous membrane with drug in solution)
- Skin application (Applying transdermal patch)

IV. Inhalation or Pulmonary Route:

- Through nasal, oral, endotracheal or tracheostomy tubes

V. Intraoccular Route:

- Eye medication disk (inserting similar to contact lens)

Students Activity

Visit to a Pharmacy in Government Hospital

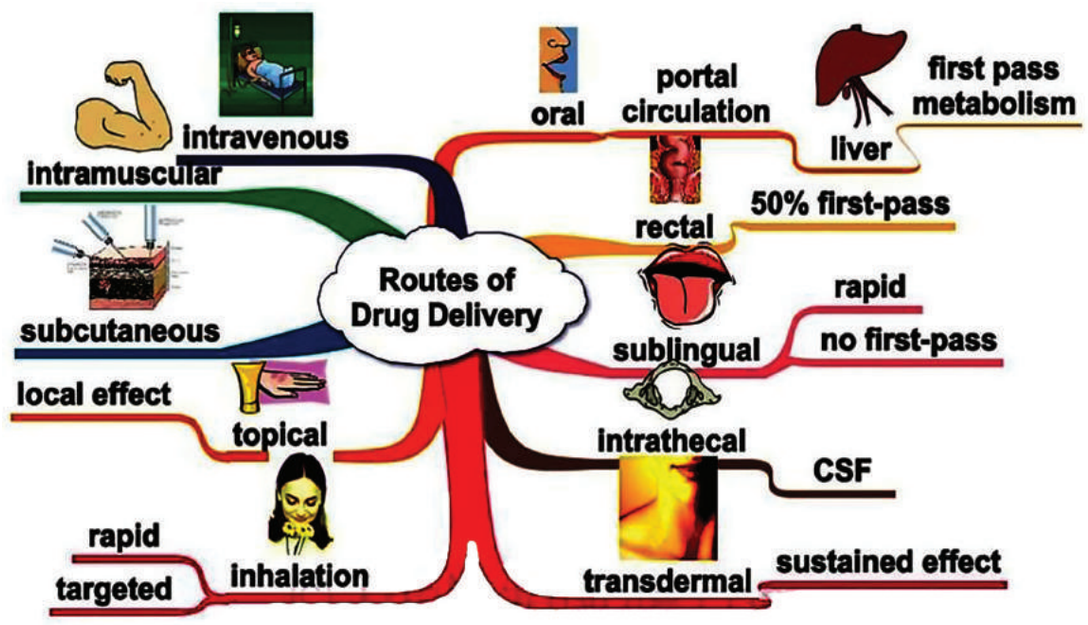
11.11 Pharmacodynamics

It covers all the aspects relating to "what the drug does to the body". It is the study of biochemical and physiological effects of drug and their mechanism of action at organ level as well as cellular level.

11.11.1 Types of Drug Action:

Different types of drug actions are follows:

Stimulation: Some drugs act by increasing the activity of specialised cells, eg., catecholamine stimulate heart to increase heart rate and force of contraction.



Depression: Some drugs act by decreasing the activity of specialised cells, eg., general anaesthetics depress the central nervous system.

Irritation: Certain drugs on topical application can cause irritation of the skin and the adjacent tissues, eg., eucalyptus oil.

Replacement: When there is a deficiency of endogenous substances, they can be replaced by drugs, eg., Insulin.

Chemotherapeutic: Drugs are selectively toxic to infective organism or cancer cells, eg., antibiotics, anticancer drugs.

11.11.2 Effects of Drugs on the Body

THERAPEUTIC EFFECTS: It is the expected or predictable physiological response of medication. The drugs are administered for the following purpose.

1. **TO PROMOTE HEALTH;-** Drugs are given to the individual to increase the resistance against diseases (e.g. vitamins).
2. **TO PREVENT DISEASES;-** (e.g. vaccines and anti-toxins).
3. **TO DIAGNOSE DISEASE:-** (e.g. barium used in the X-ray studies).
4. **TO ALLEVIATE DISEASES:-** Certain drugs are given for the palliative effect or for the temporary relief of distressing symptoms but does not remove the cause or cure the disease (e.g. analgesics)
5. **TO TREAT OR CURE A DISEASE:-**
   - By restoring normal functions (e.g. digoxin).
   - By destroying the causative organisms (e.g. quinine in malaria.)

Local and Systemic Effects

Local effects of a drug are expected when they are applied topically to the skin or mucus membrane.

A drug used for systemic effect must be absorbed into the blood stream to produce the desired effects in the various systems and parts of the body.

Adverse Effects:

Adverse effect is any effect other than the therapeutic effect. These are generally considered severe responses to medication.

Side Effects:

Side effect are the minor adverse effects side effects can harmful or harmless.

Allergic Reactions:

A client can react to a drug as a foreign body and thus develop symptoms of allergic reaction. Allergic reaction can be either severe or mild. A severe allergic reaction usually occurs immediately after the administration of the drugs it is called *anaphylactic reaction*. A mild reaction has a variety of symptoms. From skin rashes to diarrhoea. Such as:

SKIN RASHES: (urticaria) Oedematous pink-ish elevation with itching .

PRURITIS: Itching of the skin with or without a rash.

RHINITIS: Excessive watery discharge from the nose.

LACRIMAL TEARING: Excessive tears from the eyes.

Students Activity

State any one drug that you are commonly using in your home for minor ailments and describe about its action and side effects.

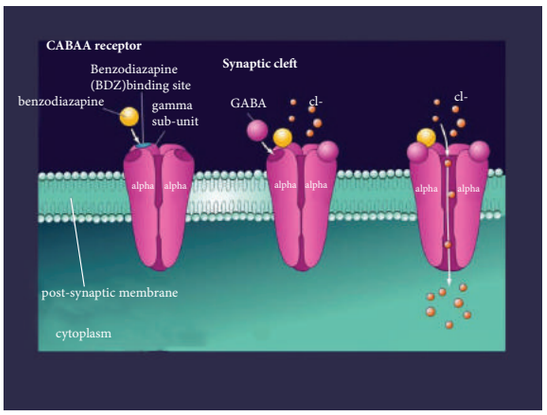
Proven Human Teratogens:

Drug	Abnormality
Thalidomide	Phocomelia, multiple defects
Anti-neoplastic drugs	Multiple defects, foetal death
Androgens	Virilization, esophageal, cardiac defects
Progestins	Virilization of female foetus
Stilboestrol	Vaginal carcinoma
Tetracyclines	Discloured teeth, bone defects
Warfarin	Nose, Eye, Hand defects, Growth retardation
Phenytoin	Cleft lip/palate, microcephaly, hypoplastic phalanges

Teratogenic drugs:

A teratogen is an agent that can disturb the development of the embryo or fetus. This produce a congenital malformation (a birth defect) ex., radiation exposure, drugs used for maternal infection.

11.12 Mechanism of Drug Action



Two types of mechanisms

1. Non-receptor mediated
2. Receptor mediated

Non-receptor mediated mechanisms include:

1. By physical action like osmosis, absorption.
2. By chemical action like antacids, metals.
3. Through enzymes like angiotensin converting enzyme inhibitor.
4. Through antibody production like vaccines.
5. Placebo which is a dummy medicine having no pharmacological activity like distilled water.

Receptor mediated mechanisms include:

1. Affinity: Ability of the drug to get bound to the receptor.
2. Agonist: Capable of producing pharmacological action after binding to the receptor.

3. Antagonist: Capable of not producing pharmacological action after binding to the receptor.

Drug Potency: It is the quantity of a drug to produce a desired response. The lower the dose required for a given response, the more potent is the drug.

Drug Efficacy: It is the maximum effect of a drug.

11.13 Pharmacokinetics

It is "what the body does to the drug". It includes absorption, distribution, metabolism and excretion.

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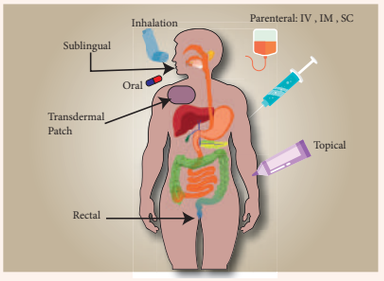
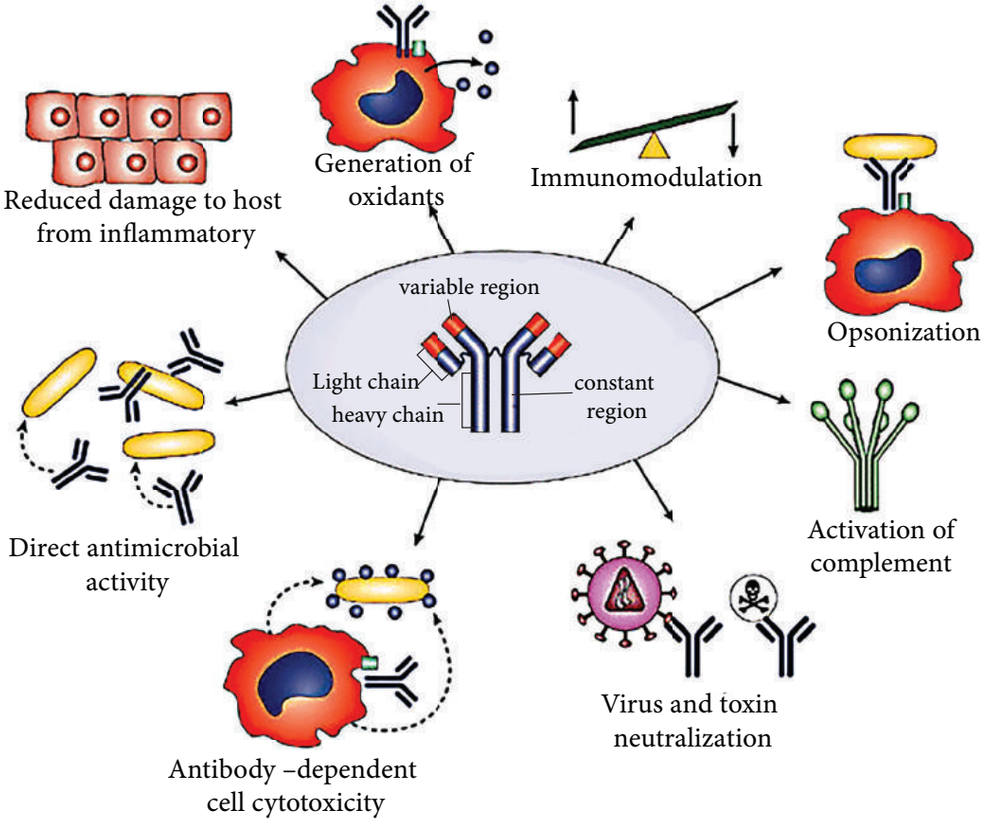
11.13 .1 Drug Absorption:

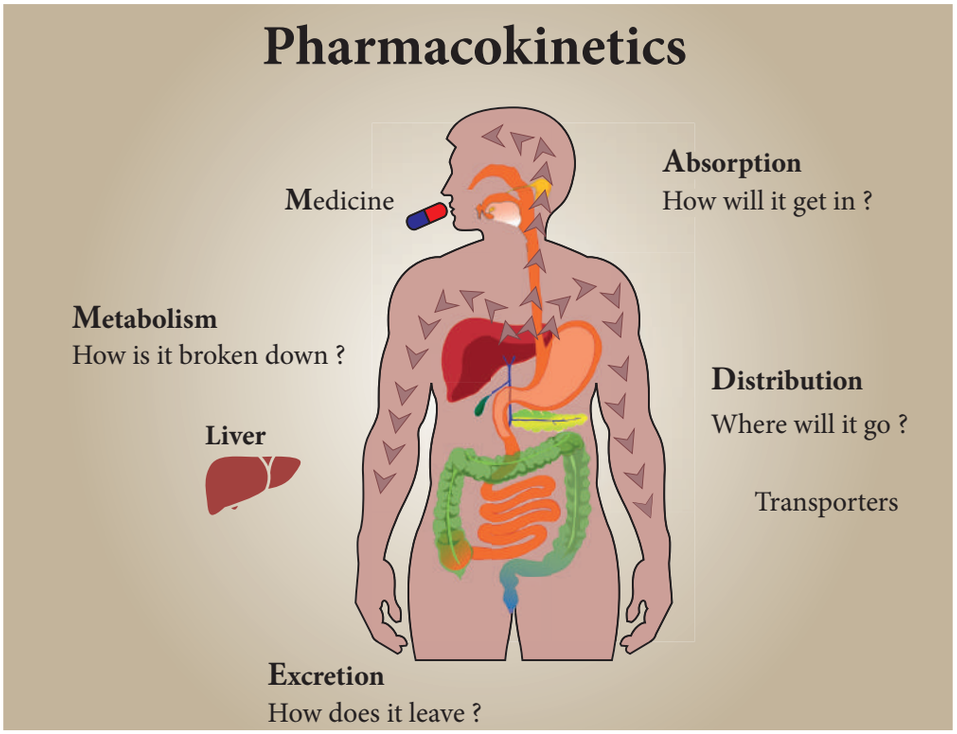
DEFINITION



"The process of movement of unchanged drug from the site of administration to systemic circulation is called as drug absorption".

It is the movement of a drug from the site of administration into the blood stream. There are various factors influencing drug absorption. It includes:





- **Physiological properties of the drug.** eg., lipid soluble form better absorbed than water soluble.
- **Route of drug administration.** eg., intravenous route directly enters the circulation.
- **Food** eg., milk and milk products decrease the absorption.
- **Presence of other drugs** eg., ascorbic acid increases the absorption of oral iron.
- **Gastrointestinal and other diseases** eg., gastroenteritis decreases drug absorption.

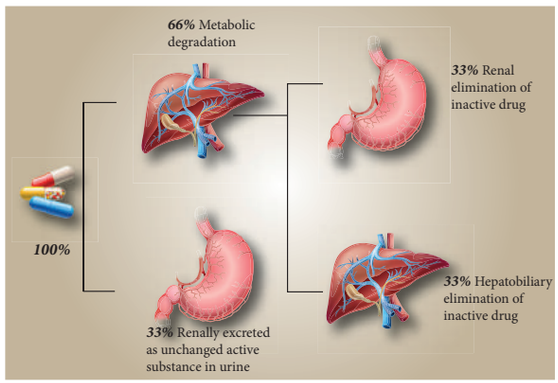
11.13.2 Drug Distribution

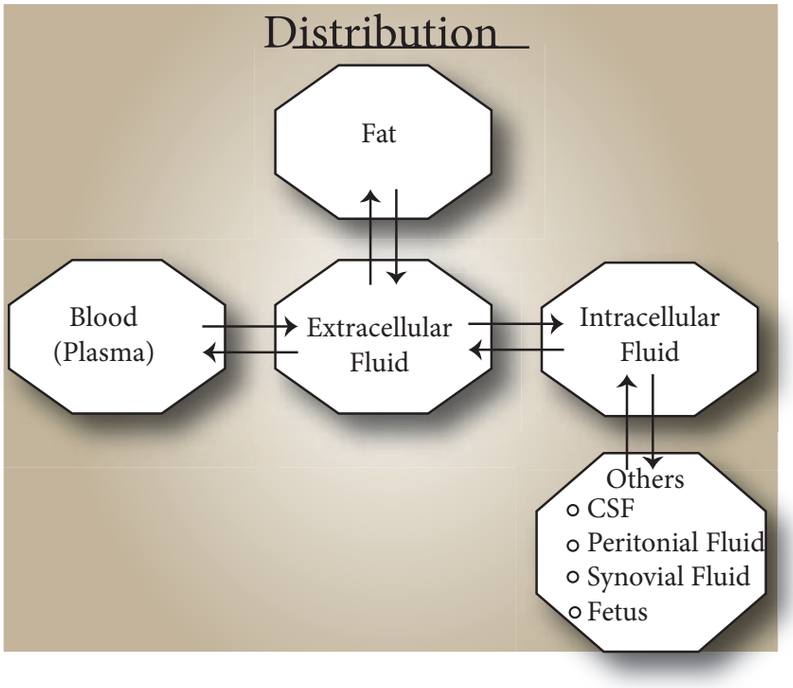
Drug distribution: refers to the reversible transfer of a drug between the blood and the extra vascular fluids and tissues of the body (for example, fat, muscle, and brain tissue). Drugs come into the circulation after absorption. From plasma drugs have to cross the capillary membrane to come to interstitial space then it cross the cell membrane and enter into the intracellular fluids.

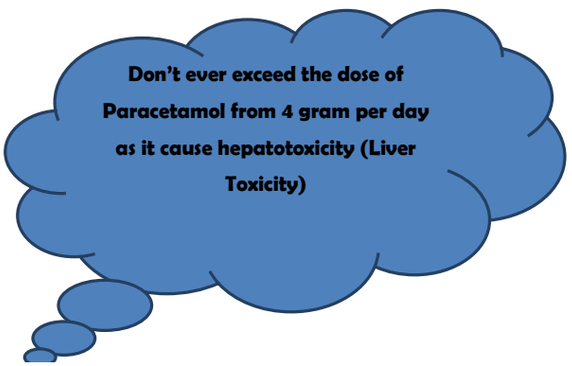
11.13.3 Drug Metabolism

- Chemical alteration of the drug in a living organism is called drug metabolism or biotransformation.

Site: Liver is the main site for drug metabolism; other sites are GI tract, kidney, lungs, blood, skin and placenta.







Factors Affecting Drug Metabolism

Age: Neonates and elderly metabolize to a lesser extent than adults.

Diseases: Liver diseases impair the drug metabolism.

11.13.4 Drug Excretion

Removal of the drug and its metabolites from the body is known as drug excretion. The main channel of excretion of drugs is the kidney; others include lungs, bile, faeces, sweat, saliva, etc.

11.14 *Nurses Responsibility in the Administration of Medications*

- Assess gag reflex and patients ability to swallow.
- Do not touch tablets.
- Head end of the bed should be elevated at least by 90 degrees to administer oral medications.
- Make sure the patient as swallowed the medication.
- It is essential to hand wash before preparation of drugs.
- Always check for patients history for allergies.
- Check the expired dates of drugs and before administering.
- Never administer medications prepared by another staff member.

- Before administering unfamiliar drugs try to know the route of administration, dose or combination of medications.
- Explain the procedure to the client discuss the need for medication.
- Before administering the anti hypertensive medication check BP.
- Before administering an analgesics assess the type of pain it's intensity, and location.
- Report on error in medication immediately to the charge nurse and the physician.
- Record the date, time, name of the drug administered. The dose of the medicine and the strength immediately after the medicine.

SUMMARY

All around the world, registered nurses play an important role in administering medication to patients in a typical busy hospital environment. Improving knowledge about medication requires a continuous education on drugs among nurses.

EVALUATION

I. Choose the correct answer

1. The study that deals with chemicals that affect the body functioning is known as
   a) Pharmacokinetics
   b) Pharmacology
   c) Pharmacodynamics
   d) Anaesthetics
2. The Drugs which produce vomiting is known as
   a) Coagulant
   b) Sedatives
   c) Emetics
   d) Antacids
3. The abbreviation used to administer of they if necessary is
   a) SOS order
   b) STAT order
   c) prn order
   d) o.d
4. The expected or predictable physiological response of medication is termed as
   a) Side effect
   b) Toxic effect
   c) Adverse effect
   d) Therapeutic effect

FNIRS4

5. The process of movement of drug from the site of administration to systemic circulation is called as
   a) Absorption
   b) Distribution
   c) Metabolism
   d) Excretion
6. The main site for drug metabolism is
   a) Kidney
   b) Blood
   c) Liver
   d) Skin

II. Answer the following questions in one (or) two lines.

1. Define Pharmacokinetics.
2. Define Pharmacodynamics.
3. List four sources of drugs.
4. Enumerate any four rights of medication administration.

III. Write short notes

5. Describe the different forms of medications.
6. Describe the different routes of medication administration.
7. Enumerate the factors modifying drug action.

IV. Write in detail

8. Explain the classification of drugs.
9. Explain about pharmacodynamics.
10. Explain about pharmacokinetics.

A-Z GLOSSARY

1. Drug Efficacy: (*மருந்து திறன்*) It is the maximum effect of a drug.
2. Drug or Medication: (*மருந்து*) Any substance that modifies body functions when taken into the body
3. Drug Potency: (*மருந்து சக்தி (அ) ஆற்றல்*) It is the quantity of a drug to produce a desired response.
4. Pharmacodynamics: (*மருந்தியல் இயக்கவியல்*) It is the study of drugs – their mechanism of action, pharmacological action and their side effects which deals with "what the drug does to the body"
5. Pharmacist: (*மருந்தாளுனர்*) A person licensed to prepare and dispense drugs
6. Pharmacokinetics: (*மருந்தினால் இயக்கவியல்*) It is the study of how medications enter the body, reach their site of action, are metabolized and exit the body
7. Pharmacology: (*மருந்தியல்*) The study that deals with chemicals that affect the body's functioning

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- Potter P A, et al., (2013). Potter & Perry's Fundamentals of Nursing (1st ed.) Newdelhi: Elsevier
- Shanbhag, T.V., et al., (2011). Pharmacology for Nurses. Newdelhi: Elsevier

INTERNET LINKS

- http://www.slideshare.net/maryline1979/mdication-error-25474916
- http://www.study.com/academy/lesson/what-is-pharmacokinetics-definition-principles.html

UNIT 12

Alternative Medicine and Practices in Nursing

LEARNING OBJECTIVES

After learning this chapter students will be able to

- gain knowledge and attain a favourable attitude towards AYUSH
- students will be able to define AYUSH
  - discuss the history of AYUSH
  - list the purpose, indications and contraindications of AYUSH
- describe the application of AYUSH.
- explain health services in Tamilnadu regarding AYUSH.

12.1 Introduction

A paradigm shift is occurring within our society wherein a growing number of people are adopting an expanded view of health which embraces a holistic perspectives rather than a purely allopathic one. As a result, we are seeking and using a variety of complementary and alternative healing modalities. In an effort to promote primary health care the World Health Organization (WHO) recommended in 1978 that traditional (alternative) medicine be promoted, developed and integrated wherever possible with modern, scientific medicine, stressing the necessity to ensure respect, recognition and collaboration among the practitioners of the various systems concerned.

Complementary and alternative medicine (CAM) has received an enormous amount of attention around the world over the past decade. Nurses need to be well informed about various CAM modalities that clients might be using because of the increased interest in CAM.

12.2 Definition

The National Center for Complementary and Alternative medicine (NCCAM) defines

Complementary and Alternative medicine (CAM) as a group of diverse medical and health care systems, practices and products that are not presently considered to be part of conventional medicine.

According to the NCCAM, complementary and alternative therapies are not the same. Complementary medicine is used together with conventional medicine.

Conventional medicine is defined by NCCAM as medicine practices by holders of M.D (Medical Doctor) and D.O (Doctor of Osetopathy) degrees and by allied health professionals, such as nurse-practitioners or advanced practice nurses, registered nurses, physical therapists, and psychologists.

12.2.1 Reasons Why People Seek Cam Therapies

- Wanting greater control over their lives.
- Having a sense of responsibility for their own health care.
- Wanting a more holistic orientation in health care.
- Concern over the side effects of conventional therapies.
- Finding the results of conventional treatments to be inadequate.
- A desire for cultural and philosophical congruence with personal beliefs about health and illness.
- Dissatisfaction with conventional health care.
- Unwillingness to 'grin and bear' the effects of diseases.
- The rapid pace and ease in consumers' awareness of alternative therapies.
- Growing evidence of effectiveness of alternative therapies.

12.2.2 Principles Underlying Alternative Healing

In 1999, Eliopoulos identifies five basic principles underlying CAM:

- The body has the ability to heal itself.
- Health and healing are related to a harmony of mind, body and spirit.
- Basic good health practices build the foundation for healing.
- Healing practices are individualized.
- People are responsible for their own healing.

12.3 Types or Classifications of Cam Therapies

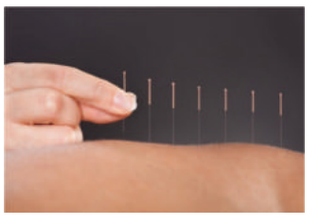
Alternative medicine is any practice that is perceived by its users to have healing effects of medicine.

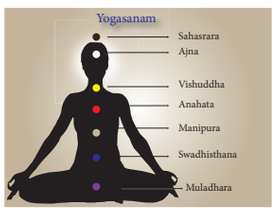
Systems of Medicine and Healthcare

Department of Indian systems of Medicine and Homeopathy [ISM & H] was created in March 1995 and renamed as Department of AYUSH in November 2003 with a view to providing focused attention to development of Educational research in AYUSH.

Classification of complementary and alternative medicine

Whole or Alternative Medical Systems	Mind – Body Intervention	Biological – Based Therapies	Manipulative and Body-Based Methods	Energy Therapies
■ Acupunture ■ Ayurveda ■ Homeopathy ■ Naturopathy	■ Meditation ■ Relaxation ■ Hypnosis ■ Art, music and dance therapy ■ Prayer ■ Imagery ■ Bio-feedback ■ Body-Mind Spiritual interventions	■ Herbal therapies ■ Aromatherapy ■ Special diet therapies ■ Mega doses of vitamins or minerals	■ Tai Chi ■ Yoga ■ Massage	■ Therapeutic touch ■ Reflexology ■ Electromagnetic ■ Therapy ■ Light therapy





AYUSH – generally means "Long Lived"

A – Ayurveda

Y – Yoga & Naturopathy

U – Unani

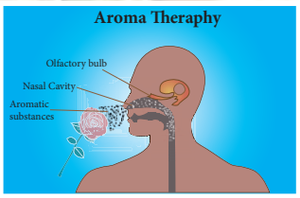
S – Siddha

H – Homeopathy

We exercise at least 36 muscles when we smile

12.4 Objectives of Alternative Medicine

- To upgrade the educational standards of AYUSH.
- Quality control and standardization of drugs.
- Improving the availability of medicinal plant material, promotion and cultivation of herbs.
- To strengthen existing research institution and provide awareness, research programme on identified disease.



12.5 Types of Alternative Medicine

Ayurveda

Ayurveda literally means **"The Science of Life"** and it represents the oldest complex medical system about healthy lifestyle principle. [**Ayur**-life, **veda**- knowledge (or) science]

Students Activity

Album preparation – collect some medicinal plants, write its uses and make an album.

Ayurveda aims at making a happy, healthy and peaceful society. The two most important aims of Ayurveda are:

- To maintain the health of healthy people.
- To cure the diseases of sick people.

12.5.1 The Origin of Ayurvedic Medicine

Auyveda originated in the vedic civilization of India about 4,000 years ago. The origin of its teachings dates back to the ancient Indian scriptures [Vedas]

Atreys was the first great physician and teacher of ayurvedha. "**SushruthaSamhita**" is written by the great surgeon sushrutha who says "The physician, the patient, the drug and nurses are four feet of the medicine upon which the cure depends.

The great physician Charaka was written the charakasamhita in which he deals with ayurvedic surgery.

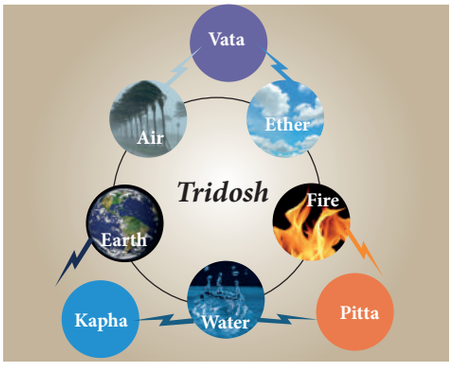
Ayurveda is regarded as the mother of all medical system.

- In India we had the ayurvedic system of medicine which can be traced of about 3000 B.C. Ayurveda stressed on hygiene, prevention of sickness, Inoculation against small pox, Lavatories, good ventilation, construction of hospitals, cultivation of medicinal plants.

12.5.2 Ayurvedic Perspective

- Ayurveda represents a holistic and simple form of healing approach
- Ayurvedic practice above all appeals to conscious prevention, healthy life style.
- Following a programme of positive change to include proper diet a regular

herb usage it is possible to remove various health problems.



Panchamaha Bhutas

The central concept of Ayurvedic medicine is the theory that health exist when there is a balance between three fundamental bodily humors (or) doshas called [Vatha, Pitta, Kapha].

12.5.3 The Body Matrix

Life in ayurveda is conceived as the union of body senses, mind and soul. Thus the total body matrix comprises of the humours, the tissue and waste product of the body.

12.5.4 Causes of Disease

- It represent the balance between three biological principle [Vata, Pitta, Kapha], bodily tissues, their function, sensory organs, the mind and psychic consciousness.
- Imbalance [vata, pitta, kapha] can be caused by number of factors, including stress, lifestyle and improper diet.
- Imbalance of the body and bias from its natural balance results in different kinds of ailments.

12.5.5 Diagnosis in Ayurveda

There are three main methods mentioned in Ayurveda for diagnosing the Dosha imbalance and disease process in a person. They are –

1. Darsana Pareeksha – By observing the patient's physical signs and symptoms,

   Example – colour of skin, hair, eyes, behavior, body condition etc.
2. Prasna Preeksha – By asking minute questions regarding the imbalance of each Doshas.
3. Sparsana Pareeksha – By touching the patient. The pulse diagnosis, palpation, percussion and auscultation are included in this method.
4. Nadi Pareeksha (Pulse diagnosis) is a very important tool for diagnosis. The physician feels the radial artery pulsations on the wrist of the patient

and through his experience he can get a clear picture of the milieu interior.

12.5.6 Treatment

The treatment in Ayurveda can be classified broadly into two:-

1. Shamana Chikitsa (Alleviating Therapy)
2. Sodhana Chikitsa (Purification Therapy)

Samana Chikitsa

This is specially done after the sodhana therapy and in less vitiation. Herbal medicines are used internally and externally to correct the derangement of functions of Doshas, Dhatus, Malas and Agni and also to increase the Immunity. The restoration of normality is brought about without any elimination.

Sodhana Chikitsa

The main aim of this treatment is to eliminate the internal causative factors of the disease. Large quantities of toxic bi-products are formed in the body as a result of continuous metabolic process. All though most of these toxins are eliminated naturally by the body's excretory system, some may get deposited in the various tissues of the body, which ensures the vitiation of Doshas, Dhatus etc. and then the normal functioning of the system is impaired. Similarly disease causing toxins accumulate in the body as a result of various factors like wrong body habits, wrong food habits, incompatible combination of food items, suppression of the body urges, emotional imbalance etc. Panchakarma therapeutic procedures are used to facilitate the elimination of such harmful factors.

Nerve impulse travel at over 400 km /hr

We give birth to over 200 billion RBC cells every day

PANCHKARMA TREATMENT

[Cleaning process]

Nasyam – Purifies and strengthen Nasal passage.

Kizhi – Massage by medicinal oils over the body.

Panchakarma is the cornerstone to Ayurvedic management of disease. Pancha Karma is the process, which gets to the root cause of the problem and re-establishes the essential balance of 'Tridosha' (three doshas: Vata, Pitta and Kapha) in body.

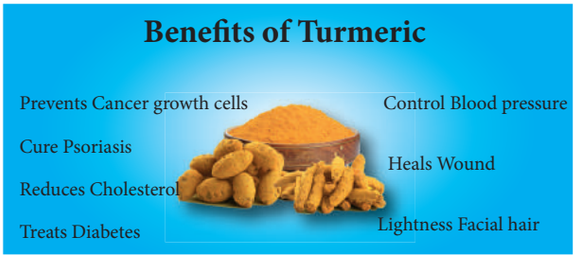
Panchakarma is a Sanskrit word that means "five actions" or "five treatments". This science of purifying the body is an ancient branch of Ayurveda.

Panchakarma is designed to reduce symptoms and restore harmony and body balance. To achieve this an Ayurvedic Practitioner might rely on:-

Blood – Purification

Massage – Medical oils, herbs.

Enemas (or) Laxativs – Cleanse your body of undigested foods.



Physician – should use his knowledge with humility, wisdom, service of humanity.

Medicaments – Food and drugs.

Nursing – Must know the skills of their art affectionate, sympathetic, intelligent, heat clean and Resourceful.

"ONLY THE SILENCE OF THE HEART CAN CURE THE ILLNESS OF THE MIND"

Patient – Co-operative and obedient to follow instruction of the physician.

- Regulation of diet as therapy has great importance.
- An individual's mental and spiritual development is influenced by proper treatment.
- Ayurveda stresses the use of plant based medicine and treatment with some animal products and added minerals.

Our blood is on a 60000 miles journey per day

12.6 Yoga & Naturopathy

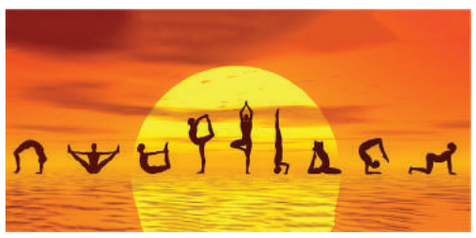
12.6.1 Definition

Yoga is an ancient art based on harmonizing system of development for the body mind and spirit. The continued practice of yoga will lead you to sense of peace and well being and also a feeling of being at one with their environment.

12.6.2 Origin of Yoga

Yoga combines –

- **PHYSICAL EXERCISES**
- **MENTAL MEDITATION**
- **BREATHING TECHNIQUES.**



Yoga philosophy is an art and science of living. Yoga has its origin in the Vedas,

The oldest record of Indian culture. It was systematize of by the great Indian sage **Patanjali** in the yoga sutra as a special **Darshana.** Yoga gurus from India later introduced yoga to the West, following the success of Swami Vivekananda in the late 19th and early 20th century. In the 1980s, yoga became popular as a system of physical exercise across the Western world.

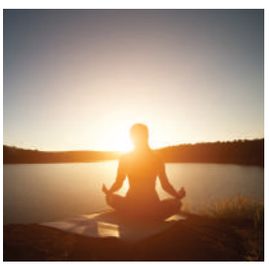
"**SWAMI VIVEKANANDA"**- defines yoga

It is a means of compressing one's evolution into a single life or a few months or even a few hours of one's bodily existence.

Yoga is a science as well as art of healthy living physically, mentally, morally, spiritually.

"**Maharishi Patanjali**" rightly called as the Father of yoga, compiled and refined various aspects of yoga systematically in his "Yoga sutras".

The term "yoga" has been applied to a variety of practices and methods, including Jain and Buddhist practices. In Hinduism these include, they are:



12.6.3 Streams of Yoga

- Ashtanga Yoga-Discipline of mind.
- Hatha Yoga-Discipline of Body and Prana.
- Bhakti Yoga –Discipline of Emotions
- Karma Yoga- Discipline of Actions.
- Jnana Yoga-Discipline of Intellect

Tantra-

- Mantra Yoga
- Kundalini Yoga
- Swara Yoga, Nada Yoga, Laya Yoga etc.

A set of Asanas, Mudras, Pranayamas practiced with faith, perseverance and insight rejuvenates all parts of the body, by ensuring oxygenated and balanced blood supply.

12.6.4 Principles

- Yoga means a holistic approach towards the cause and treatment of disease.
- The basic approach of yoga is to correct the life style by cultivating a rational positive and spiritual attitude towards all life situation.
- Yoga also takes up the cleansing of the body as the first measure to fight disease.
- It preventing the disease and promoting health by reconditioning psycho-physiological mechanism of the individual.

Students Activity

Collect and stick pictures related to back pain.

Practice yogic postures to relieve back pain.

June 21st is the international yoga day

12.6.5 Treatment

Experts of various branches of medicine are realizing the role of these techniques in the prevention of disease and promotion of health.

12.6.6 Awareness

In recent times there is a growing awareness among the people about the efficacy and utility of yoga in keeping one fit at physical, mental, emotional, social, spiritual plans.

Students Activity

Yoga – practise breathing exercise and perform meditation

12.7 Naturopathy

12.7.1 Definition

Naturopathic medicine is based on a belief that the body heals itself using a supernatural vital energy that guides bodily processes.

12.7.2 Origin and Its Development

History of Nature cure movement started in Germany and other western countries with [Hydrotheraphy] "water cure". In credit of making world famous goes to Vincent preissnitz who was a farmer. Dr. HenryLindlahr was called as the "Father of Naturopathy".

12.7.3 Principles

- Acute diseases are our friends not enemies, chronic disease are the outcome of wrong treatment and suppression of the acute disease.
- Nature is the greatest healer. Body has the capacity to prevent itself form disease and regain health if unhealthy.
- In Naturophathy diagnosis is easily possible.
- Nature cure treats body as whole instead of giving treatment to each organ separately.
- Nature cure treats physical, mental, social and spiritual.
- Naturopathy does not use medicines. According naturopathy food is medicine.

The whole practice of Nature cure based on the following three principles.

1. Accumulation of morbid matter.
2. Abnormal composition of blood and lymph.
3. Lowered vitality.

It also believes that the human body possess inherent self constructing and self healing power.

The five main modalities of treatment are air, water, fire, mud and space.

12.7.4 Diagnostic Methods

- **Facial diagnosis –** Studying the Facial expression.
- **Iris diagnosis** - Studying the condition of visceral organs.
- **Full life history** - Covering all the Facts of life.
- **Modern Clinical diagnosis.**

12.7.5 Treatment

- Water therapy – Water is the most ancient of all remedies.
- Air therapy - Fresh air is essential for good health.
- Fire therapy - Heating techniques are used.
- Space therapy – Fasting is the best therapy
- Mud therapy - Mud absorbs and dissolves & eliminates toxin.
- Food therapy - Nutritious diet is the only medicine.
- Massage therapy – By applying medicinal plant extracts.
- Acupressure - By applying pressure on selected points.
- Magneto therapy – Magnets influence health.
- Chromo therapy – Sun rays have seen colors – [VIBGYOR] employed through irradiation on body.

Students Activity

Collect the information regarding naturopathic centre.

12.8 Unani System of Medicine

12.8.1 Introduction

The Unani system of Medicine has a long and impressive record in India. It was introduced in India by the Arabs and Persians sometime around the eleventh century. Today, India is one of the leading countries in so far as the practice of Unani medicne in concerned. It has the largest number of Unani educational, research and health care Institutions.

12.8.2 Origin

Unani system of medicines originated in Greece and is based on the teaching of Hippocrates and Galen.

Unani medicine is substantially based on Ibn Sina's *The Canon of Medicine* (11th century).

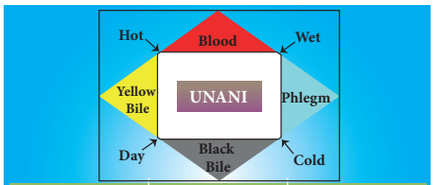
The medical tradition of medieval Islam was introduced to India by the 13th century with the establishment of the Delhi Sultanate and it took its own course of development during the Mughal Empire, influenced by Indian medical teachings of Sushruta and Charaka. Alauddin Khalji (d. 1316) had several eminent physicians (Hakims) at his royal courts.This royal

patronage meant development of Unani practice in India, but also of Unani literature with the aid of Indian Ayurvedic physicians.

12.8.3 Principles

According to principles of Unani, body is made up of following proximal qualities. They are

- Four basic elements of human body
- Qualities or states of human body
- Four "humors" of human body



Four Basic Elements of human body	Qualities or states of human body	Four " humors " of human body
Earth	Cold	Blood
Air	Day	Phlegm(Sptum)
Water	Wet	Yellow Bile
Fire	Hot	Black Bile

12.8.4 Diagnosis

Unani system has shown remarkable results in curing the disease like Arthritis, Lecucoderma, Jaundice, Liver disorder, Bronchial, asthma etc.,

At present unani system of medicine with its own recognized practitioners, hospitals, and educational & research institutions forms an integral part of the national healthcare system.

12.8.5 Modes of Treatment

- Regimental Therapy-includes venesection, cupping, diaphoresis, Turkish bath, massages, exercise, leeching
- Diet Therapy-Administration of specific diets.
- Pharmocotherapy-Mainly dependent upon local available herbal drugs.
- Surgery

February 11th is International Unani Day

Students Activity

Stick the pictures of herb and write its medicinal values.

12.9 Siddha system of medicine

12.9.1 Introduction

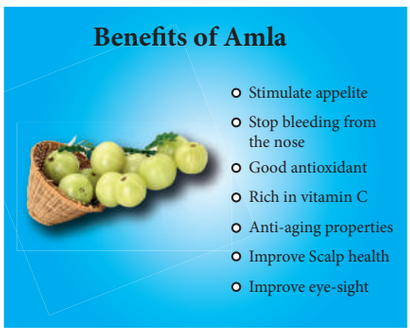
Siddha system is one of the older system of medicine in India. The term "Siddha" means achievements. It is of Dravidian origin and has its entire literature in Tamil language. The Siddha system is largely therapeutic in nature. Siddhars were saintly persons who achieved results in medicine.

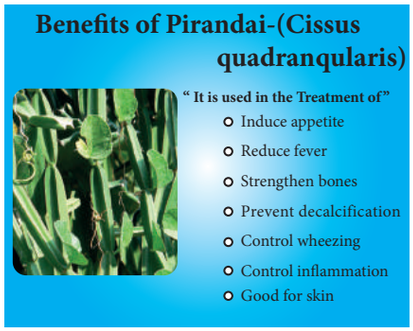
12.9.2 Origin

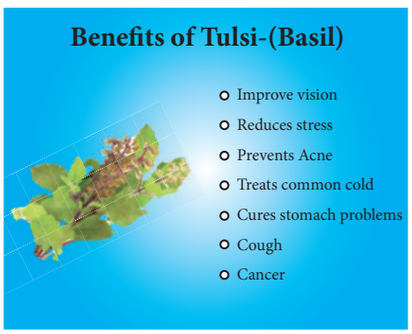
Its origin is also traced to mythological sources belonging to the Shaiva tradition. According to the tradition, Lord Shiva conveyed the knowledge of medicine to his wife Parvati. The knowledge was passed from her to Nandi and finally it was given to the Siddhas. The word Siddha denotes one who has achieved some extraordinary powers (*siddhi*). This achievement was related to the discipline of mind and its superiority over body, and

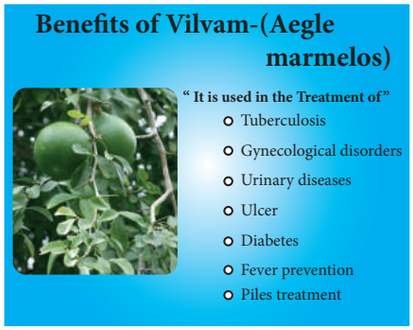
was accomplished through both yoga and medicine. Thus *siddhars* (practitioners of Siddha) became the symbols of psychosomatic perfection and so the Siddha medicine became a combination of medicine and yoga.

The tantrik *siddhi* was thought of in different forms such as *janmaja* (due to birth), *osadhija* (due to some medical elixirs), *mantraja* (due to magical incantations), *tapoja* (due to penance) and *samadhija* (due to meditation). The tantriks endeavoured to attain the Siddha by several means, one of them was through the use of certain compositions of compounds of mercury, sulphur, mica and several other metallic substances.









12.9.3 Concept of Disease and Cause

When the normal equilibrium of three humors (*vatha*, *pitha* and *kapha*) is disturbed, disease is caused. The factors, which affect this equilibrium are environment, climatic conditions, diet, physical activities, and stress. Under normal conditions, the ratio between these three humors (vatha, pitha and kapha) is 4:2:1 respectively.

According to the Siddha medicine system diet and life style play a major role not only in health but also in curing diseases. This concept of the Siddha medicine is termed as *pathya* and *apathya*, which is essentially a list of do's and don'ts.

12.9.4 Diagnosis

In diagnosis, examination of eight items is required which is commonly known as *astasthana-pariksa*. These are:

- *na* (tongue): black in vatha, yellow or red in pitha, white in kapha, ulcerated in anaemia.
- *varna* (colour): dark in vatha, yellow or red in pitha, pale in kapha;
- *svara* (voice): normal in vatha, high pitched in pitha, low pitched in kapha, slurred in alcoholism.
- *kan* (eyes): muddy conjunctiva, yellowish or red in pitha, pale in kapha.
- *sparisam* (touch): dry in vatha, warm in pitha, chill in kapha, sweating in different parts of the body.
- *mala* (stool): black stools indicate *vatha*, yellow *pitha*, pale in *kapha*, dark red in ulcer and shiny in terminal illness.
- *neer* (urine): early morning urine is examined; straw colour indicates indigestion, reddish yellow excessive heat, rose in blood pressure, saffron colour in jaundice and looks like meat washed water in renal disease.
- *nadi* (pulse): the confirmatory method recorded on the radial artery.

Sl. No		Vadam	Pitham	Kabam
1.	Na(tongue)	Black	Yellow	White
2.	Varnam(Colour)	Dark	Red	Pale
3.	Kural(Voice)	Normal	High Pitch	Low
4.	Kan(eyes)	Muddy	Red	Pale
5.	Thodal(touch)	Dry	Warm	Chill
6.	Malam(stool)	Black	Yellow	Pale
7.	Neer(Urine)	Straw(Indigestion)	Red(Heat)	Saffron(Jaundice)
8.	Naadi(Pulse)	Confirmatory method recorded on the radial artery.		

WORLD SIDDHA DAY

14th APRIL

12.9.5 Concept of Drugs

The drugs used by the Siddhars could be classified into three groups:

- Thavaram (herbal product)
- Thathu (inorganic substances)
- Jangamam (animal products).

The thathu drugs are further classified as

- Uppu (water soluble inorganic substances or drugs that give out vapour when put into fire)
- Pashanam (drugs not dissolved in water but emit vapour when fired),
- Uparasam (similar to pashanam but differ in action),
- Loham (not dissolved in water but melt when fired),
- Rasam (drugs which are soft) and
- Ghandhagam (drugs which are insoluble in water, like sulphor).

The drugs used in Siddha medicine were classified on the basis of five properties:

- Suvai (taste),
- Guna (character),
- Veerya (potency),
- Pirivu (class)
- Mahimai (action).

According to their mode of application the Siddha medicine could be categorized into two classes: (1) internal medicine and (2) external medicine.

- Internal medicine was used through the oral route and further classified in to 32 categories based on their form, methods of preparation, shelf life, etc.
- External medicine includes certain forms of drugs and also certain applications like nasal, eye and ear drops and also certain procedures like leech application.

12.9.6 Treatment

The treatment should be commenced as early as possible after assessing the course and cause of the disease.

Treatment is classified into three categories:

- Devamaruthuvum (Divine method) - like parpam, chendooram, guru, kuligai made of mercury, sulphur and pashanams are used.
- Manuda maruthuvum (rational method) - medicines made of herbs like *churanam*, *kudineer*, *vadagam* are used.
- Asura maruthuvum (surgical method) - incision, excision, heat application, blood letting, leech application are used.

According to therapies the treatments of Siddha medicines could be further categorized into following categories such as Purgative therapy, Emetic therapy, Fasting therapy, Steam therapy, Oleation therapy, Physical therapy, Solar therapy and Blood letting therapy, Yoga therapy, etc.

- The diagnosis of the disease is by the identification of causative factors is through examination of pulse, urine, eyes, study of voice, colour of body, tongue and status of the digestive treatment.

- The Siddha system is effective in treating chronic causes of liver, skin disease - Psoriasis Rheumatic problems, anemia, Bleeding, Ulcer etc.,
- The Siddha medicine which contains mercury, silver, arsenic, lead, sulfur is found to be very effective in treating disease.

Students Activity

- Exhibition for school mates with medicinal plant extracts and its uses.

12.10 Homeopathy

12.10.1 Introduction

Homeopathy is a system of natural medicine introduced and developed by a German physician, Samuel Hahnemann, at the end of the 18th century. Recognizing that the whole person-mind, body, spirit-is affected when there is illness, homeopathy seeks to treat that whole person. The focus is not the diseased part or the sickness, rather the totality of the individual. Homeopathic medicines, or 'remedies', stimulate the body's self-regulating mechanisms to initiate the healing process.

12.10.2 Definition

The theory or system of curing disease with very minute doses of medicine which in a healthy person and in large doses would produce a condition like that of the disease treated.

Homoios - like (or) similar.

pathos - feeling, suffering.

Law of similars which is the natural law of healing, diseases are heated by medicines, which are capable of producing in healthy persons, symptoms similar to those of the disease which it can heat in a sick person. - **Webster's Dictionary**

12.10.3 Origin of Homeopathy

The credit of deriving an entire system of therapeutics from this principle goes to the German Physician Christian Friedrich Samuel Hanemann in 1796 is based on his doctrine of like cures like, a claim that a substance that causes the symptom of a disease in

Founder - Samuel Hahnemann

Year - 1796

Healthy People would cure similar symptoms in sick people.

Homeopathy is a pseudo science- A belief that is correctly presented as a scientific

It claims "Like cures like" dilution increases potency".

Homeopathy claims that Hippocrates may have originated homeopathy around 400B.C. When he prescribed a small dose of mandeake root to treat malaria.

In 16th century - **Paracelsus** declares that small dose of "what makes a man ill also cures him".

12.10.4 Concepts and Principle Of Homeopathy

Law of Similars

The law of similars is an ancient medical maxim, but its modern form is based on Hahnemann's conclusion that vast set of symptoms produced by any substance on a group of healthy individuals can be cured in a sick person by application of same substance as per homeopathic principles.

Ex: Preparation of Red onion - Allium ceper

According to the principle of homeopathy a person suffering from similar watering and burning of eyes and nose frequently seen with common cold can be treated by Allium cepa.

The cornerstone principle is Similia Similbus Curentur, "Let likes cure likes"

Single simple remedy:- Homeopathic medicines are usually administered ideally in single, simple and unadulterated form.

Minimum dose:- The homoepathic medicine selected for a sick person is prescribed in minimum dose, so that when administered there is no toxic effect in the body.

The Potentized Remedy:- Homeopathic remedies, though made from natural substances such as plants, minerals, animals, etc., are manufactured unlike any other medicine

Potentiation

The most characteristic and unique principle of Homeopathy is "Drug Dynamization" or potentiation. The crude drug substance is diluted and triturated or successed to increase its potency, only the medicinal power of the substance is retained and drug related side effects are eliminated.

The potentized medicine act as a triggering or a catalytic agents to stimulate and strengthen the defense mechanism of the body.

Vital force which regulates all the function of the body and maintain life.

Miasms

The word miasm comes from Greek work miasma which means taint, stain, pollution.

Each miasm is seen as the root cause for several diseases, which are chronic in nature. Miasms are either inherited at birth or acquired from environment during life time.

12.10.5 Three Levels of Homeopathic Therapy

- **First Aid**

  Homeopathy can be used in first aid to safely treat common ailments and

occurrences, such as sprains and bruises, minor burns, skin irritations and reactions (including poison ivy, diaper rash and insect bites), teething pain, etc.

- **Acute Homeopathy**

  Acute health problems are those in which the symptoms will eventually go away on their own. They are temporary conditions, such as colds, flu, coughs, sprains, etc. A homeopathic remedy can be useful and attractive because it is safe, gentle and has no harmful side effects. Homeopathy can also be used to assist sensitive conditions such as pregnancy.

- Constitutional Homeopathy

  Constitutional homeopathy refers to the treatment of a person as a whole, including past and present symptoms. When accurately implemented, homeopathic constitutional care can elicit a profound healing response. Homeopathy can be extremely effective in treating chronic and long-term health problems. Recurrent ear infections can be treated with a homeopathic remedy for a longer period of time to strengthen the body's immune system and to prevent future occurrences.

12.10.6 Holistic and Individual Approach

Homeopathic approach is holistic as well as individualistic.

Such a variation of symptoms is found in respect of location of symptoms, their sensation, character, physical and mental attributes of the patients/ Scope and limitations:

- Complains during pregnancy, labour and puerperium.
- Common problems of children, acute or chronic which are not life threatening.
- Homeopathy can enhance the healing process and reduce the recovery period.
- Homeopathy can provide corollary assisstance, improve quality of life and act.

Obesity

Simple equation….. when you eat more than you use… it is stored in your body as "fat"

12.10.7 Advantages:-

- Basically Homeopathy is considered to be one of the safest forms of treatment.
- It improves the body's own healing power to be able to fight disease.
- These medicines do not have any side effects.
- These medicines are based on natural ingredients.
- It is very easy to use eg. Tiny sugar pills.
- It does not involve large expenditures.

12.10.8 Scopes of Alternative Medicine

- Areas of study in an alternative medicine doctoral program include
  - Acupuncture
  - Oriental medicine
  - Homeopathy

- Students in doctoral program such as a Doctor of Naturopathic Medicine[N.D or N.M.D) gain the opportunity to improve their holistic skills and assist patient in private practices.
- Education in this field varies from certification courses to Ph.D depending on which specialization on alternative medicine practitioner chooses.
- Alternative medicine is the perfect field for those hoping to help heal people with traditional methods.

SUMMARY

Alternative medicine is any practice that is perceived by the users to have healing effects of medicine. Department of indian systems of medicine and homeopathy was created in march 1995 and renamed as department of AYUSH in November 2003. With a view to providing focused attention to development of educational research in Ayurveda, Yoga, Unani, Siddha, Homeopathy. Alternative medicine is the perfect field for those hoping to help heal people with traditional methods.

Students Activity

- Quiz on essential food substance used as medicine.

EVALUATION

I. Choose the correct answer

1. Atreya was the first great physician and teaches in the field of _____
   a) unani
) allopathy
   c) homeopathy
   d) siddha
2. Which treatment is designed to reduce symptoms in Ayurvedic treatment?
   a) yogasanam
   b) medicants
   c) panchakarma
   d) Acupunture
3. Path of knowledge in the field of yoga is
   a) karma yoga
   b) Bhakti yoga
   c) Jnana yoga
   d) Raja yoga

FPBEX2

4. World siddha day is celebrated on
   a) 14th May b) 15th June
   c) 16th September
   d) 14th April
5. Who is the founder of homeopathy
   a) Hippocrates
   b) Samuel Hahnemann
   c) Henry Lindlahr
   d) Charaks

6. In siddha type of medicinal treatment which one is called as water soluble inorganic substance

   a) pashanam

   b) uppu

   c) uparasam

   d) Rasam

II. Answer the following questions in one (or) two lines.

1. What is Alternative medicine?
2. Define Ayurvedha.
3. What is panchamahabhutas?
4. What is body matrix?
5. Write the diagnostic process in Ayurveda?
6. Define yoga.
7. Write the types of yoga.
8. Define unani.
9. Define Homeopathy.
10. List three types of treament in Siddha.

III. Write short notes

11. Write the ayurvedic perspectives in treatment.
12. Write the diagnostic procedure in panchakarma.
13. Write the principles of Naturopathy.
14. Write about the Diagnostic methods in Naturopathy.
15. Write the basic principles used in siddha system of medicine.
16. What is law of similar in Homeopathy?

IV. Write in detail

17. Write in detail about the origin and principle of Ayurvedic treatment.
18. Explain the diagnosis and treatment of disease Ayurveda.
19. Explain the principles of yoga and Naturopathy.
20. Write the drugs which is used in siddha field and its treatment procedure.
21. Write in detail about the concepts and principles of Naturopathy and its treatment.

A-Z GLOSSARY

1. **Aromatherapy:** (*வாசனை சிகிச்சை*) The use of aromatic plant extracts and essential oils for healing and cosmetic purposes.

2. **Acupuncture:** (*குத்தூசி மருத்துவம்/கூர் தூண்டல்*) Chinese medical practice in which fine needles are inserted in the skin at specific points, used in the treatment of various physical and mental conditions.

3. **Ayurveda:** (*ஆயுர்வேதம்*) Ancient Indian medicine, which is based on the idea of balance in bodily systems and uses diet, herbal treatment, and yogic breathing.

4. **Chromotherapy:** (*வண்ணத்தின் வழி சிகிச்சை*) Or color therapy, is an alternative medicine method. It uses light in the form of color to balance "energy" lacking from a person's body, whether it be on physical, emotional, spiritual, or mental levels.

5. **Homeopathy:** (*ஹோமியோபதி*) A medical practice that treats ailments by minute doses of natural substances that in larger amounts would produce symptoms of the ailment.

6. **Hydrotherapy:** (*நீர் சிகிச்சை*) Also called water cure, is a part of alternative medicine, that involves the use of water for pain relief and treatment.

7. **Meditation:** (*தியானம்*) It is the act of remaining in a silent and calm state for a period of time, so that you are more able to deal with the problems of everyday life.

8. **Pitta:** (*பித்தம்*) The seat of Pitha is between the heart and the navel. Sweat, lymph, heart, blood, stomach, urinary bladder, saliva, eye, and skin.

9. **Vadha:** (*வாதம்*) The seat of Vadham is below the naval. (Urinary bladder, pelvis, umbilical chord, thigh, bone, skin, nerve endings, musculature, joints, hair roots.)

10. **Yoga:** ((*யோகா*) *யோகா கலை*) It is a type of exercise in which you move your body into various positions in order to become more fit or flexible, to improve your breathing, and to relax your mind.

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- J.E,PARK 13 TH edition 'social and preventive medicine'

INTERNET LINKS

- http://nhp.gov.in/ayush-ms
- www:indian medicine.nic.in
- www.you tube.com/watch (yoga classes 20 minutes)

UNIT 13

Documentation

FXB6R7

LEARNING OBJECTIVES

After learning this chapter students will be able to

- define Records and reports
- list the purposes of Documentation
- describe the principles of Documentation
- explain about Documentation Format
- describe about types of records
- enumerate about reports
- state the Nurses responsibility in record keeping
- illustrate with Examples of Documentation

13.1 Introduction

Document is described as any written or electronically generated information about a patient status or the care or the service provided to that patient. Nursing documentation is the record of nursing care that is planned and delivered to individual client. Nursing documentation is varied , complex and time consuming depends on the severity of the patient condition.

Records and reports are the essential components for implementation and evaluation of patient care in the hospital or community. Hence the documentation is consider as an integral part of nursing practice, and is necessary to ensure high quality of patient care. This chapter is to discuss about the importance of documentation which includes recording and reporting. The Nursing and Midwifery Council (NMC 2002) stated that 'good record keeping helps to protect the welfare of patients.

13.2 Definition

13.2.1 Documentation

It is the process of communicating in written form about essential fact. Records and reports are essential components of documentation.

13.2.2 Records

It is a written communication that permanently document the information relevant to a client's health care management. (Sr.Mary Lucita)

Record is the valuable sources of data for all members of the health care team.

13.2.3 Reports

Reports may be oral or written form of documentation.

Report is an oral, written or computer based communication intended to convey information to other. (E. Angelina Jolie)

13.3 Purpose of Documentation

Communication

The primary purpose of documentation of client care is the communication among health care professional to promote continuity of care among departments throughout 24 hours.

Quality Assurance

It provides substantiation of quality of care. An audit is a review of record.

Reimbursement

Reimbursement for client care by insurance companies and other agencies are done after a review of client's records.

Legal accountability.

It serves as legal document. It may be used as evidences in court proceedings.

Research

Nursing and health care research is often carried out by studying client records.

Diagnosis

Documents are aids in diagnosis of patients' condition

Evaluation

Patient condition progress towards diseases condition will be evaluated based on his/her record.

Assessment

The nurse and other health care members gather assessment data from the client records.

Education

Members of the health team including students utilize these records as an educational tool.

Vital Statistics

Client records, registers and reports furnish the vital statistics.

Health Service Planning

Client record points out the health problems of the country and provides a baseline for local, state, national and international health service planning.

Mr. Arul is admitted in the Medical ward with fever. His temperature was 102°F. Sister Lucy gave Tab. Paracetemol at 8am and went. At 08.10 am, Sister Mary came and checked the temperature, it was 102°F. So, Sister Mary also gave one more Tab. Paracetemol.

Mr. Arul did not tell Sister Mary that he took one tablet already. Patient had 2 tablets instead of one tablet. It comes under **Negligence and Malpractice**, which is one of legal issue. This is due to the poor communication between the sisters. Even if not able to communicate they should have entered in the patient chart. **Patient chart** is an ideal way of communicating the information to the next person. Since Sister Lucy did not record or enter in the chart, Mr. Arul had two tablets. This incident tells about the importance of recording and report.

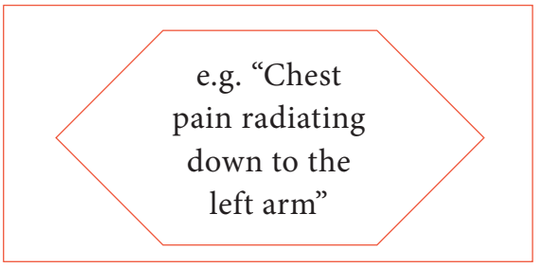
13.4 Principles of Documentation

Accuracy in Charting

- Be specific and definite in using words or phrases that convey the meaning you wish expressed
- Words that have ambiguous meanings and slang should not be used in charting
- Chart objective facts, not your interpretations or opinions

✓	Ate 50% of the food served.	
X	Ate with poor appetite.	
✓	Refused medications.	
X	Uncooperative.	KEY;
✓	Seen crying.	✓ = correct
X	Depressed.	X = Wrong

Place the complaint of the client in quotation marks to indicate that it is his statement.



Date and time

Document the date and time of each recording.

Correct spelling

It is essential for accuracy in recording.

Appropriateness

Record only information that pertains to the client's health problems and care.

Legal Protection

Accurate complete documentation will give legal protection to the nurse other health care professional of the institution and the client.

Accuracy

Client's name and identification data must be written on each page of the clients records and entries must be accurate.

Completeness

Document all information necessary to explain the events in a shift. Anyone reading the document should have a clear picture of what took place.

Brief

Only standard medical and nursing terminology and community recognized abbreviations and symbols should be used.

Organizations

Recording of information on the clients must follow a chronological order charting statements must be logically organized according to time and content.

Omissions

Blank spaces are not to be left on the chart and avoid writing outside the lines of the charting format.

Confidentiality

Information within the chart is often of a personal matter as well as legal evidence of the care provided and should be available for the necessary health team members only.

Standard

Spell correctly

Use proper grammar.

Put signature.

- Affix signature, place at the end of charting at the right hand margin of the nurses notes.
- Sign each entry with your full name and status, e.g. SN for Student Nurse, RN for registered nurse.

All due Medicines are given to Mr.Govind at 8pm by *G. Stella*

(Mrs.G.STELLA,RN) Registered Nurse

Bed bath given to Mrs. Sivagami at 6 am by *R. Grace*

(MISS.R.GRACE,SN) Student Nurse

- In case of error.
  - Correct errors by drawing a single horizontal line through the error
  - Write the word error above the line, then sign your signature
  - No ink eradication, erasers or use of occlusive materials

13.5 Documentation Format

13.5.1 SOAPIER Format

S-SUBJECTIVE.=What patient tells you. (ex. I have leg pain).

O-OBJECTIVE.=What you observe(observe the leg for swelling/ injury and facial expressions).

A-ASSESSMENT.=The critical analysis and evaluation or judgement of the patient condition

P-PLAN.=What you are going to do.(plan for any nursing intervention to reduce pain, informing physician, giving medication and comfort position).

I-IMPLEMENTATION.=Specific interventions implemented like hot or cold fomentation, administration of medication etc.

E-EVALUATION.=Patient response towards nursing care(patient may say, I am feeling better, my leg pain is reduced).

R-REVISION.=Changes the treatment. (If the pain is not reduced modify the intervention).

13.5.2 APIE Charting

It is Similar to SOAP

- A-*Assessment*
- P-Problem Identification

- I-Intervention
- E-Evaluation

13.5.3 Focus Charting

Focused only on nursing diagnosis, patient problem, signs and symptoms. It has three components (DAR)

- DATA – subjective or objective data that supports the focus
- ACTION – nursing intervention
- RESPONSE – Patient response to intervention

Ex:

- D – complaining of pain at incision site , pain score: 7/10
- A – Repositioned for comfort. -------Analgesics injection given.
- R – Patient states pain reduced, "Feels Much Better."

13.5.4 Computer-Assisted Charting

- Notes always legible and easy to read
- Quick communication among departments about patient needs
- Many providers have access to patient's information at one time
- Can reduce documentation time.
- Reimbursement for services rendered is faster and complete

13.6 Records

Records are one of the essential components of documentation.

13.6.1 Types of Records

1. Patients Clinical Records

   It is the record of events in the patient illness, progress in his or her recovery and the type of care given by the hospital personnel.

2. Individual staff records.
   - A separate set of record is needed for staff, giving details of their absences, their carrier development activities and a personnel note.

3. Ward Records

   These records are maintained in the each ward, such as
   - Census records.
   - Change in medical staff and non nursing personnel for the ward. (Duty roaster)
   - Inventory and stock records
   - Staffs Leave records
   - Admission records
   - Transfer records
   - Discharge records
   - Medicine records etc.

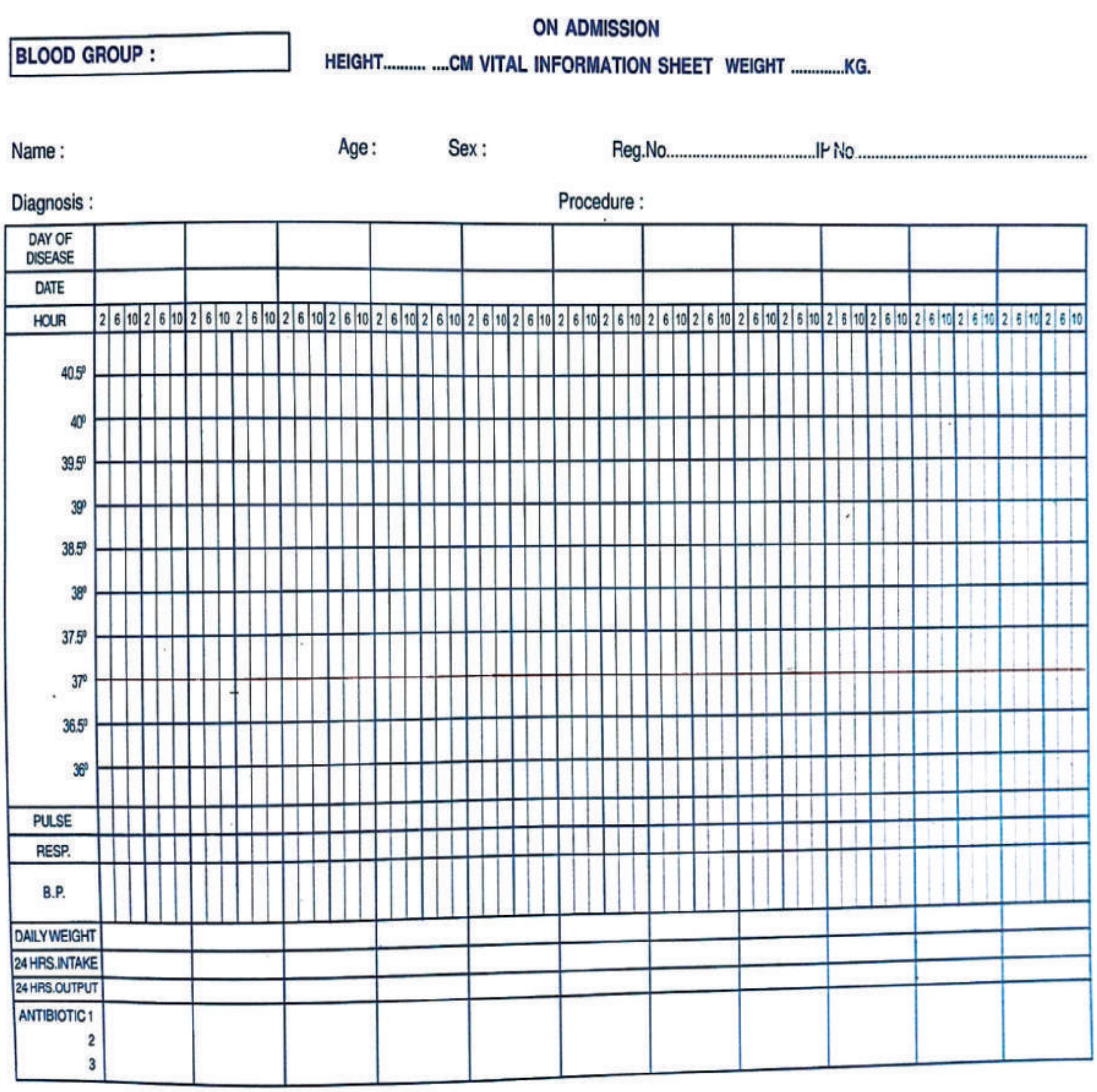
4. Administrative records

   These records are maintained purely for administrative purpose of the hospital or unit

- Legal documents: for the patients with poisoning, assault, rape, burns etc.
- Research or statistics data records
- Audit and nursing audit records
- Quality of care records
- Personnel performance. records
- Other administrative records

13.6.2 Records Maintained by the Nurses

Vitals sign chart on this the temperature, pulse and respiration are written in a graphic form so that a slight deviation from the normal can be noted at a glance


BLOOD GROUP :

ON ADMISSION

HEIGHT.......... ....CM VITAL INFORMATION SHEET WEIGHT ....KG.

Name : Age : Sex : Reg.No.................................IP No ....

Diagnosis : Procedure :

DAY OF DISEASE

DATE

HOUR 2 6 10

40.5°
40°
39.5°
39°
38.5°
38°
37.5°
37°
36.5°
36°

PULSE

RESP.

B.P.

DAILY WEIGHT

24 HRS.INTAKE

24 HRS.OUTPUT

ANTIBIOTIC 1
2
3

INTAKE AND OUTPUT CHART; Intake and out put chart to be maintained for the critically ill client those who received intravenous fluids, postoperative clients, clients with oedema, and client suffering with vomiting and diarrhoea,

INTAKE & OUTPUT CHART

Name of the Patient	Age	Sex	Marital Status	Inpatient No.

Service :	Ward :	Bed No. :

INTAKE					OUTPUT						
Date	Time	ORAL	IV FLUIDS	TOTAL	DATE	TIME	URINE	VOMIT	SUCTION	DRAIN	TOTAL

Mr.

INTAKE & OUTPUT RECORD

NURSES NOTES.

Nurses notes are a record of treatments and nursing measures carried out by the nurse which reflects the observation of the client.

BH / NUR / FM / 011

Name : Age :

Reg.No.: Sex : M / F

IP No.: Date :

Bed No. : ______________ Page No. ______________

Date	Time	Nurses Notes	Signature

Please Date and Sign each Entry

NURSES NOTES FORM

13.7 Reporting

Reports may be oral or written form of documentation

13.7.1 Types Of Reports.

- Change of shift reports
- Telephone reports
- Family member reports
- Incident reports
- Legal reports.

13.7.1.1 Change of Shift Reports

- A change of shift reports is given by a primary nurse to the nurse who assumes responsibility for continuing care of the patient. The change of shift report might be given in written form or orally.

- It provides basic identifying information such as patient condition, current appraisal of each patients' health status, current order by the physician, changes of medication, intravenous fluids, diet, activity level.
- Summary of each newly admitted patient.
- Report on patients who have been transferred or discharged.

13.7.1.2 Telephone Reports

- Telephones and telemedicine equipment can link healthcare professionals immediately and enable nurses to receive and give critical information about patients in a timely fashion.
- Report the patients' current vital signs and clinical manifestation investigation etc.

13.7.1.3 Family Member Reports

- Nurses play a crucial role in keeping the patient family and updated about the patients condition nurses should clarify their doubts and record their patient condition.

13.7.1.4 Incident Reports

- It is a tool used by heath agencies to document the occurrence of anything out of the ordinary that results in harm to a patient, employee or visitor these reports are used for quality improvement.

Students Activity

1. Charting the vital signs for your own classmates.
2. Practice recording intake and output for you.

13.8 Nurses Responsibility for Record Keeping and Reporting

- Keep under safe custody of nurses.
- No individual sheet should be separated.
- Not accessible to patients and visitors.
- Strangers are not permitted to read records.
- Records are not handed over to the legal advisors without written permission of the administration.
- Handed carefully, not destroyed.
- Identified with bio-data of the patients such as name , age, admission number, diagnosis, etc. (Legal Issues?)

SUMMARY

Documentation is the process of communicating in written form about essential facts for the maintenance of history of events over a period of time. An effective health record shows the extent of health problems and other factors that affect the ability of the individual. Reports can be compiled daily, weekly, monthly, quarterly and annually. Registers provide indication of total volume of services and type of cases seen. Reports

summarize the services of the nurses and/or the agencies. Thus the reports and records reveal the essential aspects of service in a logical order so that the new staff may be able to maintain continuity of service to individuals, families and community.

EVALUATION

I. Choose the correct answer

1. Which of the following documentation used by the head nurse to communicate information about patient has sudden hemorrhage to another head nurse in the next shift?
   a. Kardex record
   b. Assignment record
   c. Shift report
   d. Incident report

FXTXUH

2. Which of the following is an important characteristic of maintain a record?
   a. Accuracy
   b. Consequences
   c. Neatness
   d. Stability
3. An incident report is to be completed because the client climbed over the side rails and fell into the floor. The correct reporting of an incident involves which of the following?
   a. The witnessing nurse completes the report.
   b. Details of the incident are subjectively described.
   c. An explanation of the possible cause for the incident is entered.
   d. A notation is included in the medical record that an incident report was prepared.
4. The nurse is preparing the information that will be provided to the staff on the next shift. Which of the following should the nurse include in the inter-shift report to nursing Colleagues?
   a. Audit of client care procedures
   b. The client's diagnostic-related group
   c. All routine care procedures required by the client
   d. Instructions given to the client in a teaching plan
5. Nurse has made an error and is documenting such on the client's record and notes. The action that the nurse should take is to
   a. Draw a straight line through the error and initial it.
   b. Erase the error and write over the material in the same spot.
   c. Use a dark color marker to cover the error and continue immediately after that point.
   d. Footnote the error at the bottom of the page.

II. Answer the following questions in one (or) two lines.

1. Define records.
2. Define reports.

3. Expand APIE.
4. What is focus charting?
5. List any two purposes of maintaining administrative records.

III. Write short notes

6. Write the principles in maintaining records.
7. Explain the types of registers.
8. Mention the characteristics of good record.
9. Role of nurse in maintaining records.

IV. Write in detail

10. Write the purpose of keeping records.
11. Explain the types of records.
12. Elaborate on classification of reports..

A-Z GLOSSARY

1. **Informed consent:** (*அறிவிக்கப்பட்ட முடிவு*) It is a person's agreement to allow something to happen based on full disclosure of facts, need to make an intelligent decision. The consent must be given voluntarily by a mentally competent adult.
2. **Incident report:** (*சம்பவ அறிக்கை*) An incident report is described as when something arises that could cause injury and which was not dealt with good care, so the detail incident report should be given by the particular staff or person.
3. **Protocol:** (*நெறிமுறை*) Protocol is a written plan specifying the procedures to be followed during care of patient with a selected clinical condition or situation.
4. **Standing orders:** (*நிலையான ஆணை*) Standing orders are the directions and the orders of specific nature. On the basis in the non availability of the doctor, the nurse and the health care workers can provide treatment to patients, at home, hospital or health institution and community.

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Case Study

Case Study: 1

1. Mr. John, 44 years old male came with the complaints of epigastric pain since two hours from today morning. The pain is of sharp, which radiates to the back. He also felt nauseated and vomited twice. On examination, she looked dull with considerable pain. His vital signs temperature was 98° F, with mild elevation in the pulse rate 88/min, his respiratory rate was 18/min and his BP was 120/80 mmHg. The patient had tenderness in the epigastric region with mild rebound tenderness.

– Maintain vital signs for this patient and record the above findings.

– Describe the physical examination method.

Case Study: 2

1. Mr. Somu 65 years old male, who is a chronic smoker and alcoholic came with the complaints of pain in the chest for last few weeks he is experiencing occasional tightness across his chest and sometimes it also radiates to his left arm. He looks distressed with tachypnoeic (44 breaths/min) and profuse sweating. He also has the evidence of peripheral cyanosis.

– Identify the condition and discuss the emergency management for Mr.Somu.

– Prepare a tray for oxygen administration and list the principles of oxygen administration

Case Study: 3

1. Mrs. Janaki 50 years old female who had been subjected to abdominal surgery is nill per oral in the immediate post operative period. The IV fluids D5 and RL on flow with 100cc /hr. As you entered the room and noticed that IV fluids has stopped running. The patient has poor skin turgor and is hypotensive. The patient tells you that the IV line is irritating and painful.

– What is your initial assessment for this patient?

– How do you calculate I/O chart?

Case Study: 4

1. Mrs. Rose is a 91 year old resident of a long term care facility centre who tells the nurse, "I have an ache in my right foot". I must have stepped on something or twisted my ankle or maybe I got hit by a bug when I was outside yesterday. The nurse noticed that her right ankle is reddened,

slightly swollen and warm. But her temperature is within normal limits. He has a strong pedal pulse.

- Explain the first aid for the above condition.
- Describe your observation.

History Collection Format

Patient Profile

- Name:
- Age:
- Sex:
- Place of Domicile:
- Education:
- Occupation:
- Income:
- Marital status:
- Religion:
- language:
- I.P. No. ward:
- Date of admission:
- Date of discharge, and diagnosis:
- Surgery: Name:
- Date, POD:
- Care started:
- Care ended:

Chief Complaints:

- According to the patient
- Complaints number of days it presents

IV) Past History

B. Past Medical/Surgical/Neurological History

- History of similar illness/episode in the past [date and duration]
- Any other complaints in the past [date and duration]
- Details of treatment undergone
- History of remission/Chronic illness
- Head injury/ headache/accidents/ seizure
- Infections
- Metabolic disorders/Hypertension
- Any other illness

Vii) History of Presenting Illness

Present medical history

- Details of each complaints
- Major chief complaint [Onset, Incident, Frequency, Course/duration, Precipitating factors, perpetuating factors
- Treatment undergoing
- Any associated medical complaints

Present Surgical History

- Pre Operative diagnosis and treatment
- Surgical plan
- Date of surgery
- Post operative day
- Surgical notes

III) Family history

- Genogram [3 generation]
- Description of significant family members

1. Composition Of The Family (Responsibility/role function

   Relationship with patient/Health Status)

S.No family

Member

Age

Gender

Relationship

Educational Qualification

Occupation income

Health

Status

2. Attitude of the family towards illness of the patient.
3. Type of family(joint/nuclear/ extended)
4. Medical/Hereditary/Communicable diseases
5. Pedigree chart

II) Socio Economic History

- Bread Winner Of The Family, Monthly Income
- Environmental Sanitation, drainage open/closed (Electricity, Drinking Water, Ventilation and Sewage Disposal)
- Type Of Home

IV) Marital History

- Age of marriage
- Type of marriage (Consanguineous/ Non-Consanguineous)
- Number of children
- Others

V) Personal History

- Life style (smoking, alcohol and others), hobbies and nature of habits.)
- Diet
- Sleep pattern
- Menstrual history
- Elimination pattern
- Allergic history diet/drug

Physical and System WiseExamination

Major findings in physical and system wise examination.

VIII) Diagnostic Evaluation:

- S.No, date, name of
- The test
- Patient
- Value
- Normal
- Value

IX) Drug Chart:

- S.No name dose freq/route action side
- Effect
- Inferences
- Nurses
- Responsibility

X) Indentification of Needs and Problems of The Patient

XI) Nursing Diagnosis: {Prioritize Problem}

- Nursing:
- Assesment:
- Subjective:
- Data:
- Objective:
- Data:
- Clinical:
- Data:

XII) Nursing Care Plan

- Nursing Diagnosis:
- Goal Planning/Intervention:
- Short Term:
- Long Term:

XIII) Health Education:

- Personal Hygiene
- Diet
- Exercise
- Medication
- Follow Up

XIV) Recording and Reporting

- Rationale
- Implementation:

Nurses Record

- Date
- Vital Signs
- Diet Intake/Output Medication Nurses
- Notes
- TPR & BP
- Evaluation
- Sign
- Name
- Age
- Sex
- I.P No
- Diagnosis
- Date of Admisson
- Time Planning
- Date Planning Implementation

Prioritizing the Care:

- 8:00 AM -8:30 AM Maintaing rapport with patient
- 8:30 AM -9:00 AM Checking vital signs
- 10:00 AM -11:00 AM Bed making
- 11:00 AM -12:00PM History collection
- 12:00PM-1:00PM Prioritizing the patient need

MODEL QUESTION PAPER

CHOOSE THE CORRECT ANSWER:- 15 × 1=15

1. The functions of union ministry of health and family welfare are scheduled in
   a. article 246
   b. article 200
   c. article 250
   d. article 156
2. Which of the following is not a principle of IPR
   a. Credit principle
   b. Tolerance principle
   c. Respect principle
   d. Clarity principle
3. increased the rate and depth of respiration is
   a) apnoea
   b) hyperventilation
   c) hypoventilation
   d) tachypnoea
4. The oxygen concentration of around 24 to 25% will be delivered in flow rates of
   a. 2 liter/miniute
   b. 3 liter/miniute
   c. 1 liter/miniute
   d. 4 liter/miniute
5. The confirmatory test for HIV infection is
   a) RIA
   b) ELISA
   c) VDRL
   d) Western blot
6. Which of the following is a non ionizing radiation?
   a) gamma rays
   b) X-rays
   c) cosmic rays
   d) UV rays
7. Gingivitis is the inflammation of the
   a) tongue
   b) gum
   c) oral mucosa
   d) angle of the mouth
8. Which medical condition will develop from severe blood loss?
   A. Shock.
   B. Hypoglycemia.
   C. Anaphylaxis.
   D. Hypothermia.

9. Enlarged bone on the side of big toe and angled outward is called as

   a) hammer toe

   b) spur

   c) bunions

   d) warts

10. The principle of awakening of fundamental desire to learn is

   a. Interest

   b. Motivation

   c. Credibility

   d. Feedback

11. The process of movement of unchanged drug from the site of administration to systemic circulation is called as

   a) Absorption

   b) Distribution

   c) Metabolism

   d) Excretion

12. The Drugs which produce vomiting is known as

   e) Coagulant

   f) Sedatives

   g) Emetics

   h) Antacids

13. Which treatment is designed to reduce symptoms is Ayurvedic treatment?

   a) yogasanam

   b) medicants

   c) panchakarma

   d) Acupunture

14. What type of immunity can develop by the administration of vaccine?

   a) Artificial passive immunity

   b) Artificial active immunity

   c) Natural active immunity

   d) Natural passive immunity

15. Which of the following is an important characteristic of maintain a record?

   a. Accuracy

   b. Consequences

   c. Neatness

   d. Stability

Question number 16 is compulsory. From 17 to 23 write any five of the following questions:- 6 × 2 = 12

16. What is inactivated or killed vaccine? Give example.

17. What is Pharmacodynamics?

18. What is wart?

19. Write the purposes of back care?

20. What is body matrix ?

21. What is vaccine? Give examples.

22. Write the objectives of UNICEF.

23. Define interpersonal relationship.

Question number 24 is compulsory.from 25 to 31 write any five of the following questions:- 6 × 3 = 18

24. Explain the first aid management for an unconscious patient.
25. What is Bio-medical waste management?
26. What are the common problems occur in long term bed ridden patient?
27. Describe the different routes of medication administration.
28. Write the diagnostic procedure of panchakarma treatment.
29. Write the purposes of oxygen administration.
30. List the criteria for selecting audio visual aids.
31. Explain the barriers of communication.

WRITE ANY FIVE OF THE FOLLOWING QUESTIONS:- 5 × 5 = 25

32. Scope of nursing in India.

    (OR)

    Explain the health care delivery system in India.

33. Explain the various types of communication in nursing.

    (OR)

    Explain about Glasgow coma.

34. Write the need for universal precaution?

    (OR)

    What is CPR? Explain in detail about the indication, contraindication and steps of CPR

35. Mr. Raju 45 year old person with the following vital signs parameter.

    1) Temperature 97 F

    2) Pulse rate 120/min

    3) Respiration rate 40/min

    For the above patient what is your observation and first aid explain it in detail.

    (OR)

    Write the drugs which is used in siddha field and its treatment procedure?

36. Write the purpose of keeping records.

    (OR)

    Explain the classification and disposal of Bio-medical waste?

Contents

Practicals

Practical 1

Health Care Delivery System in India

Topic:- Health care delivery system in India

Visiting Place:-

1. Any Hospital
2. District Headquarters Hospital
3. Primary Health centre
4. Tertiary level centre primary hospital

Practical work:- Observation and recording

1. Hospital Environment
2. Hospital Routines and functions
3. Departments in the Hospital
4. Admission and discharge procedure

Practical 2

Health Assessment

Topic: Health assessment

1. Assessment Techniques
2. TPR
3. BP

2.1 Health assessment

1. Assessment techniques:-
   a) Inspection:- Find out the abnormal conditions of the external parts of the body
   b) Palpation:- Using the sense of touch and reveals any swelling, stiffness, hardness, Pain, Vibration etc.
2. Percussion:- Striking or tapping with fingers to find out any fluid collection or solid mass.
3. Auscultation:- To reveals sounds produced within the body by using stethoscope
4. Manipulation:- Moving with the body to find out rigidity or discomfort of the parts.
5. Reflex:-Automatic response to a stimuli
6. Olfaction:- Sense of smell. To identify the nature of the disease condition.

Recording of Vital signs:-

Temperature, pulse and Respiration

2.2 Vital Signs

Temperature, Pulse, Respiratory rate and oxygen saturation, blood pressure are called vital signs as indicators of health status. These measures indicates effectiveness of circulation, respiratory, neural and endocrine function because of their importance they are referred as

Vital signs

Responsibility for taking TPR

1. Identify the patient
2. Check the diagnosis
3. Ability to retain thermometer
4. Previous measurement and range of TPR

Equipment:- A clean tray containing

Sl. No.	Material required
1.	Bottle with dettol solution
2.	Thermometer
3.	Kidney tray
4.	Bottle with plain water
5.	Cotton swabs

Sl. No.	Material required
6.	Soapy swab
7.	Wet and dry swab
8.	Pen and watch with second hand

Procedure:-

1. Bring the tray to the bedside and explain to the patient, who should be at rest, sitting or lying down
2. Make sure the patient has not just taken a bath or had a hot or cold drink within fifteen minutes
3. Take a thermometer from the lotion dip in clean water and wipe with cotton, using a circular movement from the bulb towards the hand. Avoid touching the part that goes into the mouth
4. Read the thermometer and be sure it is shakedown at 35°C (95°F) or below
5. Place the thermometer under the patient's tongue and instruct him not to bite it but to close his lips gently. He should not talk not cough
6. Keep the thermometer in the mouth for 1 to3 minutes (the time required may be written on the thermometer)
7. Place the tip of three fingers (never the thumb) gently cover the radial artery at the wrist
8. Feel the pulsation carefully before starting to count. Note the strength and regularity of the beats.
9. Using a watch with seconds hand or a pulseoxymeter, count the number of beats for one minute. It necessary, count longer to be sure and accurate
10. Feel or watch the rise and fall of the patient's chest
11. Count each rise and fall as one respiration. Count for a full minute.
12. While counting the rate, note also
    - (i) Rhythm - regular or irregular
    - (ii) Depth - Shallow, normal or deep
    - (iii) Sound - quiet or noisy
    - (iv) Any discomfort or difficulty in breathing
13. Record the temperature pulse and Respiration on the chart or in the TPR chart.
14. Taking and replacing thermometers should be in rotation making sure they remain in disinfectant for at least 3 minutes before being used for another patient.
15. After the procedure, clean and reset the tray for next use.

Blood Pressure:

Method of taking the Blood pressure

1. Explain the procedure to the patients and have him seated by a table or lying with the arm supported and relaxed.
2. Place the centre of the cuff of the BP apparatus over the brachial artery and wrap it smoothly and firmly around the patient's arm 5 cm just above elbow. Tuck the end in neatly .
3. Find the brachial pulse with the fingers and place the over it.
4. Close the screw valve and inflate the cuff until the pulse disappears and above that about 20mm mercury.

5. Open the valve slowly and listen for the first sound while watching the manometer reading. The first sound gives the systolic reading. As air escapes, the sounds become louder and cleaner.
6. Continue to let air out slowly. As you listen the sounds suddenly become dull and at this point take the Diastolic reading.
7. Allow all the air to escape and the mercury to fall to zero.
8. Repeat the procedure, if there is any doubt about the reading.
9. Record the reading. The systolic pressure is always written over the Diastolic pressure eg. 120/80 mmHg.
10. Remove the cuff.

2.3 Oxygen Therapy-Cannula Method

Definition

A method by which oxygen is administered in low concentration through a cannula which is disposable plastic device with two protruding prongs for insertion into the nostrils.

Purpose

1. To relieve dysponea.
2. To administer low concentration of oxygen to patients.
3. To allow uninterrupted supply of oxygen during activities like eating, drinking, etc.

2.3.1 Procedure

	Nursing action	Rationale
1	Determine need for oxygen therapy in patient. Check physician's order for rate, device used concentration, etc	Reduce risk of error in administration.
2	Perform an assessment of vital signs, level of consciousness, lab values, etc. and record.	Provides a baseline for future assessment.

	Nursing action	Rationale
3	Assess risk factors of oxygen therapy, patient and environment such as patients with the dangers of smoking when oxygen is on flow.	Reduces risk of danger to the patient.
4	Explain procedure to patient and relatives and inform them how to cooperate.	Reduces anxiety and ensures cooperation
5	Post "No Smoking" sign on the patient's door in view of patient and visitors	Oxygen supports combustion, smoking in oxygen area can lead to fire hazards.
6	Wash hands	Reduces risk of transmission of microorganisms.
7	Set up oxygen equipments and humidifier a. Fill humidifier up to the level marked on it with sterile water b. Attach flow meter to source, set flow meter in 'off' position. c. Attach humidifier to base of flow meter d. Attach tubing and nasal cannula to humidifier e. Regulate flow meter to prescribed level f. Ensure proper functioning by checking for bubbles in humidifier or feeling oxygen at the outlet.	Filling beyond this point will cause water to enter tubing. Flow meter helps in monitoring and regulating oxygen flow to patient Humidification helps in preventing drying of mucous membranes and promotes comfort of patient. Oxygen is a drug and is dangerous to administer at flow rates greater or lesser than prescribed level. Kinks in the tubing will obstruct flow of oxygen through tube.
8	Place tips of cannula to patient's nares and adjust straps around ear for snug fit. The elastic band may be fixed behind head or under chin	Proper fixing ensures comfort and prevents chances of cannula slipping from nostrils.
9	Pad tubing with gauze pads over ear and inspect skin behind ear periodically for irritation/breakdown	Constant pressure may cause skin breakdown.
10	Inspect patient and equipment frequently for flow rate, clinical condition, level of water in humidifier, etc.	Helps identifying any complications that may arise.

	Nursing action	Rationale
11	Ensure that safety precautions are followed	
12	Wash hands	
13	Document time, flow rate and observations made on patient.	
14	Encourage patient to breath through his/her nose with mouth closed	Provides for optimal delivery of oxygen to patient.
15	Remove and clean the cannula with soap and water, dry and replace every 8 hours. Assess nares at least every 8 hours.	Presence of cannula causes irritation and dryness of the mucous membrane.

Special Precautions

1. Never deliver more than 2-3 liters of oxygen to patients with chronic lung disease, e.g. COPD (chronic obstructive pulmonary disease)
2. Check frequently that both prongs are in patient's nares.

Oxygen concentration will vary on many factors like patient's tidal volume and ventilator pattern.

Oxygen concentration with flow rates

Flow rate	Oxygen concentration
1 Litre	24 to 25%
2 Litres	27 to 29%
3 Litres	30 to 33%
4 Litres	33 to 37%
5 Litres	36 to 41%
6 Litres	39 to 45%

2.3.2 Administering Oxygen by Mask Method

Definition

Administering oxygen to the patient by means of a mask (simple / venturi) according to requirement of patient.

Purpose

1. To relieve dysponea.
2. To administer higher concentration of oxygen.

Articles

1. Oxygen source
2. Mask (simple / or with venture adaptor high flow device of appropriate size)
3. Humidifier with distilled water
4. Flow meter
5. Gauze pieces
6. "No Smoking" sign.

	Nursing action	Rationale
1	Determine need for oxygen therapy, Check physician's order for rate, device to be used and the concentration.	Reduces risk of error in administration.
2	Perform an assessment of vital signs, level of consciousness, lab values, etc. and record.	Provides a baseline for future assessment.
3	Assess risk factors of oxygen administration in patient and environment-like hypoxia drive in patients and faulty electrical connection.	Reduces risk of danger caused to patient. Oxygen is a combustible gas. Hypoxia drive in patients is essential to maintain respiration.
4	Explain procedure to patient and relatives and emphasize how he has to cooperate.	Reduces anxiety and enhances cooperation
5	Post "No Smoking" signals on the patient's door in view of patient and visitors and explain to them the dangers of smoking when oxygen is on flow.	Oxygen supports combustion; smoking in oxygen area can lead to fire hazards.
6	Wash hands	Reduces risk of transmission of microorganisms.
7	Set up oxygen equipments and humidifiers. a. Fill humidifier up to the level mark on it. b. Attach flow meter to source, set flow meter in 'off' position. c. Attach humidifier to base of flow meter d. Attach tubing and face mask to humidifier (if venture device is used attach the color coded venture adapter to mask as appropriate) e. Regulate flow meter to prescribed level	Filling humidifier above this level will cause water to enter into tubing. Flow meter helps in monitoring and regulating oxygen flow to patient. Humidification helps to prevent drying of mucous membranes and promotes comfort of patient. Oxygen is a drug and is dangerous to administer at flow rates greater or lesser than prescribed level.
8	Guide mask to patient's face and apply it from nose downward. Fit the metal piece of mask to conform to shape of nose.	To mask should be mould to face so that very little oxygen escapes into eyes or around cheeks or chin.

	Nursing action	Rationale
9	Secure elastic band around patient's head.	Ensure comfort of patient.
10	Apply padding behind ears as well as scalp where elastic band passes.	Padding prevents irritation to skin around area.
11	Ensure that safety precautions are followed	
12	Inspect patient and equipment frequently for flow rate clinical condition, level of water in humidifier, etc	Identifies complications if they develop.
13	Wash Hands.	Reduces risk of transmission of microorganisms.
14	Remove the mask and dry the skin every 2-3 hours if oxygen is administered continuously. Do not put powder around the mask.	The tight fitting mask and moisture from condensation can irritate the skin on the face.
15	Document relevant data in patient's record.	

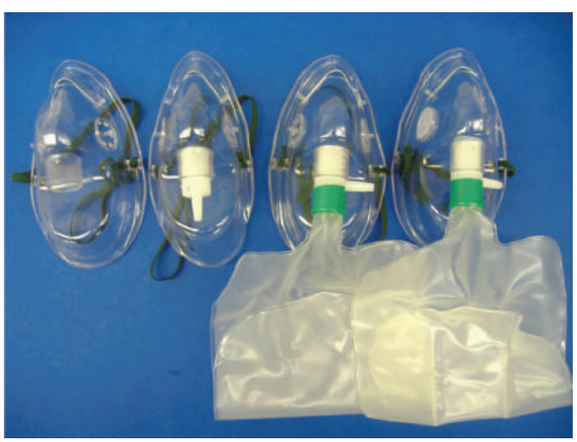
Special Considerations

1. The dosage of oxygen may be ordered as an FIO (Fraction of Inspired Oxygen) which is expressed as a percentage or as liters per minute.
2. The venture mask will have colour-coded inserts that list the flow rate necessary to obtain the desired percentage oxygen.

Flow rates and oxygen concentrations delivered using venturi mask

Nazzelcolour code	Flow rate (Litres per minute)	Concentration of oxygen to be delivered
Blue	3 Lpm	24%
Yellow	6 Lpm	28%
White	8 Lpm	31%
Green	12 Lpm	35%
Pink	15 Lpm	40%
Orange	15 Lpm	50%

Oxygen administration by face mask



Images of different kinds of mask

2.3.3 ADMINISTERING OXYGEN USING OXYGEN TENT

Definition

Process of administering oxygen by means of tent, usually for infants which gives maximum comfort and most satisfactory results.

Description

An Oxygen tent consists of a canopy over the baby's bed that may cover the baby fully

or partially and is connected to a supply of oxygen. The canopies are transparent and enables the nurse to observe the sick baby.

Advantages

1. Provides an environment for the patient with controlled oxygen concentration, temperature regulation and humidity control.
2. It allows freedom of movement in bed.

Disadvantages

1. It creates a feeling of isolation.
2. It requires high level of oxygen (10-12 liters per minute)
3. Loss of desired concentration occurs each time the tent is opened to provide care for the infant.
4. There is an increased chance of hazards due to fire.
5. It requires much time and effort to clean and maintain a tent.

Articles

Oxygen tent and oxygen source, humidifier.

Procedure

	Nursing action	Rationale
1	Explain and reassure the parents and child.	Helps in obtaining cooperation
2	Select the smallest tent and canopy that will achieve the desired concentration of oxygen and maintain patient comfort.	Increases the efficiency of the unit.
3	Tuck the edges of the tent under the mattress securely. This is especially important if the child is restless and can dislodge the tent by pulling the covers loose.	Dislodgement of tent leads to oxygen leakage.
4	Pad the metal frame that supports the canopy.	Protects the child from injury.
5	Flush the tent with oxygen (increase the flow rate) after it has been opened for a period of time, to increase the concentration of the gas, then reset the flow meter to the original level.	Oxygen is circulated in the tent to adjust the concentration.
6	Analyze and record the tent atmosphere every 1-2 hours. Concentration of 30 to 50% can be achieved in well maintained tents.	Concentration varies with the efficiency of the tent, the rate of flow of oxygen, and the frequency with which tent is opened to the outside environment.

	Nursing action	Rationale
7	Maintain a tight fitting canopy whenever possible, provide nursing care through the sleeves or pockets of the tent.	Prevent oxygen leakage and disruption of the tent atmosphere.
8	Check child's temperature routinely.	Moisture accumulation may result in hypothermia.
9	No smoking sign should be pasted in the unit.	Oxygen helps in combustion.
10	Record the flow rate of oxygen, alteration in flow rate and child's reaction.	Serves as a communication between staff members.

Note:

1. Oxygen can be administered to babies using oxygen hood (Oxyhood).
2. Oxygen hood is a plastic device, which is kept over the head of the infant. It permits easy access to the child without loss of oxygen. It helps in efficient delivery of oxygen.
3. While placing hood over the head of the child, the edges of the hood should not rub against the child's chin, neck and shoulders.

Special Considerations

1. Mist is prescribed with oxygen therapy to liquefy secretions.
2. Humidified air may condense into water droplets on the inside walls of the tent, it is important to examine the child's clothing and bedding and change them as necessary to prevent chilling.
3. Electrical equipment used within or near the tent should be grounded properly.
4. It is preferable to monitor SpO2 of patent continuously.
5. Avoid the use of volatile, inflammable materials such as oils, grease, alcohol, either and acetone near the tent.
6. Nurses should be knowledgeable about the location and technique for using a fire extinguisher.
7. For the baby in oxygen tent, toys selected should be such that they retard absorption are washable and will not produce static electricity, e.g. woolen and stuffed toys. This ensures baby's safety.

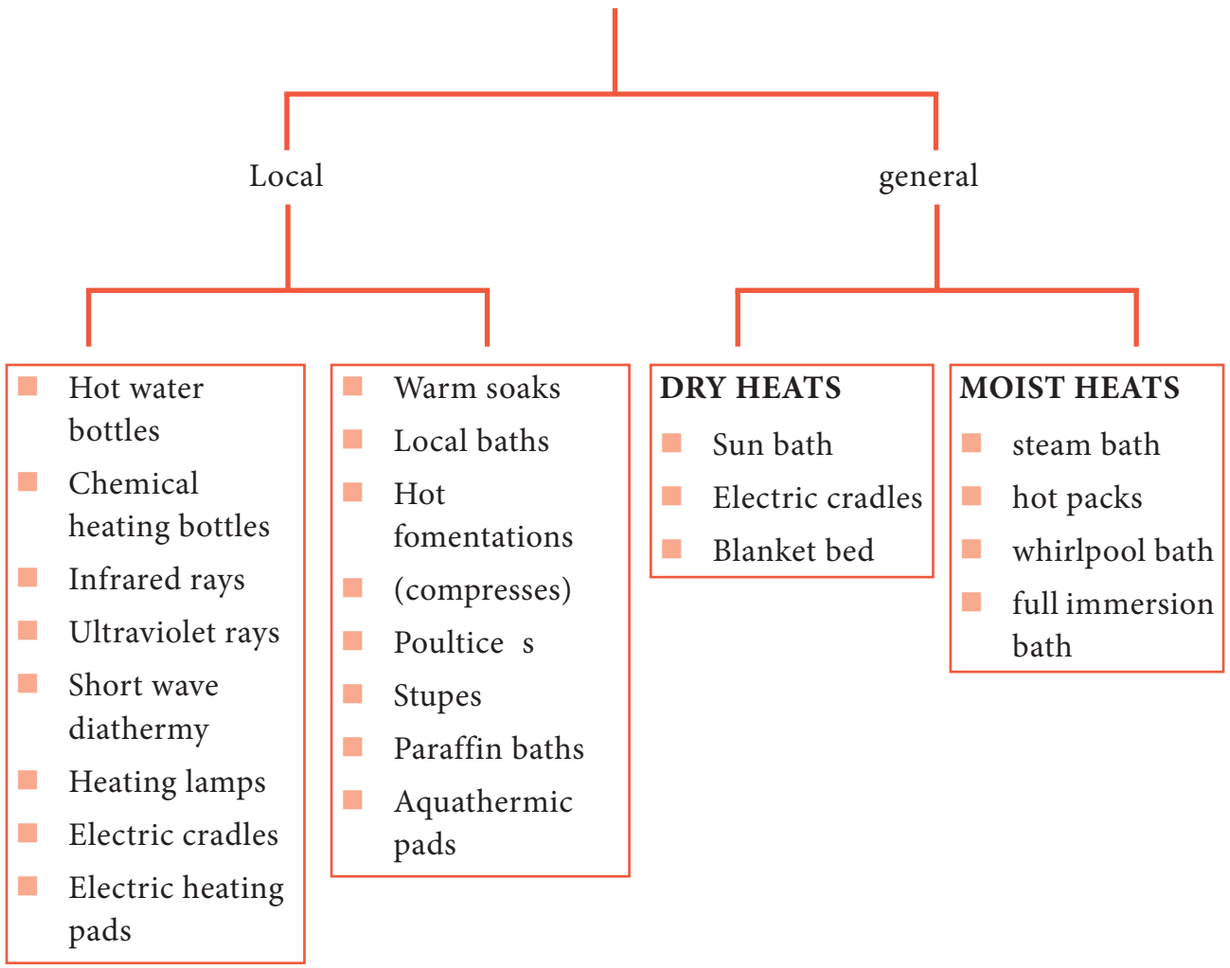
Practical 3

Hot and Cold Applications

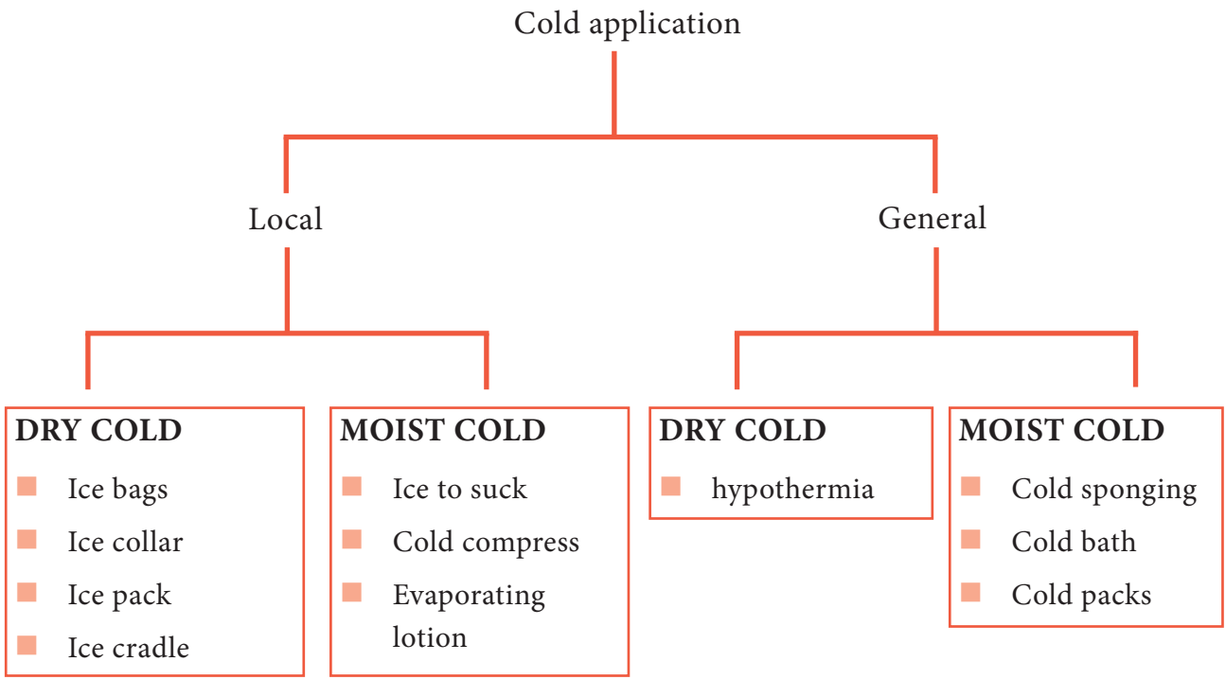
Hot application is the application of hot agent, warmer than skin either in a moist or dry form on the surface of the body to relieve pain and congestion, to provide warmth, to promote suppuration, to promote healing, to decrease muscle tone and to softens the exudates.

Cold application is the application of cold agent, cooler than skin either in a moist or dry form on the surface of the body to relieve pain and body temperature, to anaesthetize an area, to check hemorrhage, to control growth of bacteria, to prevent gangrene, to prevent edema and reduce inflammation.

Classification of hot application



Classification of cold application



Effects of hot and cold applications

Hot Application	Cold Application
Peripheral vasodilation	Peripheral vasoconstriction
Increased capillary permeability	Decreased capillary permeability
Increased o2 consumption	Decreased o2 consumption
Increased local metabolism	Decreased local metabolism
Decreased blood viscosity	Increased blood viscosity
Decreased muscle tone	Increased muscle tone
Increased blood flow	Decreased blood flow
Increased lymph flow	Decreased lymph flow
Increased motility of leucocytes	Decreased motility of leucocytes

NOTE: SYMBOL CAN BE USED FOR INCREASED ↑

SYMBOL CAN BE USED FOR DECREASED ↓

Therapeutic uses of local hot applications

- Heat decreases pain
- Heat decreases muscle tone
- Heat promotes healing
- Heat promotes suppuration
- Heat relieves deep suppuration
- Heat provides warmth
- Heat stimulates peristalsis

Therapeutic uses of local cold applications

- Cold relieves pain
- Prevents gangrene
- Prevents edema and reduce inflammation
- Controls hemorrhages
- Checks the growth of bacteria
- Reduce the body temperature
- Cold anaesthetize an area

Principles of hot and cold applicatons

1. Water is good conductor of heat.
2. Air is poor conductor of heat.
3. Heat always flows from hotter area to the less hot area.
4. Prolong exposure to moisture increases the skin susceptibility to maceration and skin breakdown, reducing the protection of the intact skin.
5. Moisture left on the skin cause rapid cooling due to evaporation of the moisture.
6. Presence of steam increases the temperature of the hot application
7. Oil acts as the insulator and delays the transmission of the heat.
8. Woolen materials absorb moisture slowly, but hold the moisture longer and cold off less quickly than the cotton materials.
9. When immersed in water the body becomes buoyant therefore the exercises are performed under water with less effort.
10. The temperature tolerance varies with individuals and according to the site and area covered.
11. The end organs of the sensory nerves of the skin convey the sensation of cold, heat pain and pressure. The sensation is interpreted in the brain.
12. Friction produces heat.

Contraindications of hot applications

- Heat is not used in malignancies
- Heat is not used in patients with heart, kidney and lung diseases
- Should not used in acute inflamed areas.
- Should not be applied on patients with paralysis.
- Should not be applied on open wounds
- Should not be applied when there is an edema associated with venous or lymphatic diseases.
- Should not be applied on patients with metabolic disorders.

- Should not be applied on very young and very old patients.
- Should not be applied on clients with high temperature.

Contraindications of cold applications

- Cold should not be applied on clients who are in the stage of shock and collapse
- Cold should not be applied when there is edema.
- Cold should not be applied on clients with circulatory disorders.
- Cold should not be applied on patients with decreased sensation
- Patients with shivering and very low temperature,
- Cold should not be applied when there is infected wound.

Complications of hot and cold applications

Hot application	Cold Application
Pain	Pain
Burns	Blisters and skin breakdown
Maceration	Maceration
Redness of the skin	Gray or bluish discoloration
Edema	Thrombus formation
Pallor(secondary effects)	Redness(secondary effects)
Hyperthermia	Hypothermia

General instructions

- Asses the condition of the clients before and after the hot and cold applications.
- Maintain the correct temperature for the entire duration of the application
- Expose the client only to the safe temperature.
- Do not allow the clients to adjust the temperature control of appliance such as short wave diathermy, electric heating pads etc.
- Never ignore the complaints of clients however small they appear to be.
- Always make sure that the client is in position to remove the application
- The client must have a calling signal within reach
- Never leave a client alone even for a short period that cannot move from the appliances.
- A thin layer of petroleum jelly or oil should be applied to the skin prior the application of moist heat application.
- Do not use electrical appliances near to open oxygen. A small spark may cause explosion.
- Do not handle electrical appliances with the wet hands.

- Hot and cold applications must be very carefully used when the clients is unconscious, anaesthetized or otherwise unable to respond pain.
- Any signs of complications should be recognized early, the procedure should be stopped immediately.
- After the procedure, dry the part gently by patting and not by rubbing to remove the moisture.
- In hyperpyrexia, the temperature of the body should be brought down gradually and steadily, sudden cooling is dangerous to the client.

3.1 Cold compresses

It is a local moist cold application. It may be sterile or unsterile. Sterile cold compresses are applied over open wounds or breaks in the skin. Cold compresses are made out of folded layers of gauze, lint piece or old soft linen, wring out of cold or ice water or in some evaporating lotion.

Article Required:

1. Large basin with ice.
2. Small basin with cold water.
3. Gauze pieces or small towels.
4. Waterproof pad.
5. Bath towel.

Procedure:

1. Explain the procedure to the client.
2. Wash hands.
3. Place the small basin with cold water into large basin with ice.
4. Place the compress in the cold water.
5. Keep the waterproof material under the part.
6. Check the area every 5 minutes.
7. Change the compress every 5 minutes or when it becomes hot.
8. Remove the compress after 20 minutes.
9. Put the area dry with a bath towel.
10. Make client comfortable.
11. Clean the equipment and place it in the proper place. Discard the used articles.
12. Wash hands
13. Document the care-time, site, duration of the application

Temperature for hot and cold applications

Sl.No	Description	Temperature	Application
1	Very cold	below15°c	Ice bag
2	cold	15-18°c	Cold packs
3	cool	18-27°c	Cold compress
4	tepid	27-37°c	Alcohol sponge bath
5	warm	37-40°c	Warm bath
6	hot	40-46°c	Hot soak , hot compress
7	Very hot	Above 46°c	Hot water bag for adult

Ice Cap

Ice cap is a dry cold application. The ice cap used for the head, has a wide opening that allows it to be filled easily with ice chips, as does the ice collar, a narrow bag curved to fit the neck. Single use ice bags are frequently used.

Hot Water Bag

Hot water bags is also called hot water bottles, are rubber bags filled with hot water and used for heat therapy. It is used to manage pain, such as headache or arthritis, or keep yourself warm on a cold night. Hot water bottle are safer than electrical heating pads, which can start fires or cause electric shocks. Hot water bags may cause injury if we don't use carefully.

Cold Sponging

Cold sponging is used to reduce temperature in a client with hyperpyrexia. Large area of the body are sponged at one time permitting the heat of the body to transfer to the cooler solution on the body surface. Often wet towels are applied to the neck, axilla , groin and ankles where the blood circulation is close to the skin surface. Each area is dried by patting rather than by rubbing. Since the rubbing will increase the cell metabolism and raise the heat production. The vital signs are checked very frequently to detect the early signs of complications.

Cold sponging is hazardous to the client if the temperature of the body is brought down rapidly from a high temperature to a very low temperature. In cold sponging, the temperature of the water is kept between 65 and 90 degree F.

Tepid Sponging

Tepid sponging is a safe method to reduce the body temperature in high pyrexia. It is carried out on the order of a physician. The temperature of the water is kept between 85 and 100 degree F.

3.2 MEDICAL FOMENTATIONS: (STUPES)

Medical fomentations are moist heat applications, in which a medicine (e.g. turpentine) is applied locally to augment the effects of the hot compresses used. Stupes are commonly used to relieve tympanites by increasing the peristalsis and relaxing the muscle spasm.

Articles:

1. Kettle with boiling water.
2. Wringer with wringer rods placed in a basin.
3. Lint or flannel pieces, large enough to cover the area.
4. Plates (2)

A tray Containing:

1. Cotton balls in a container.
2. Forceps.
3. Olive oil or vaseline.
4. Paper bag.
5. Kidney tray.
6. Waterproof over and cotton pad.
7. Hot water bag with cover.

It will be necessary to insert a flatus tube to expel the flatus after the application of stupes.

The drugs used are:

Turpentine (1 part) well mixed with olive oil (3 parts) for adults. For children, turpentine (1 part) with olive oil (6 parts).

To apply the Turpentine Stupe:

Take the turpentine and the olive oil in the correct proportion, mix them well and warm it by keeping the container in a bowl of hot water. Apply the warm oil mixture over the part, apply the hot compresses and follow the procedure as in hot compresses. After 10 to 15 minutes, insert the flatus tube and watch the expulsion of the flatus.

Arm Soak and Foot Soak:

A soak refers to either immersing a body part (e.g. an arm, foot) in a solution or to wrap a part in gauze dressings and then saturating the dressing with a solution. Soaks may employ either "clean technique". A sterile technique is indicated for any open wounds present on the area. Soaks are usually indicated for any one of the following reasons:

1. To apply heat, thus hastening suppuration and softening the exudates.
2. To apply medications.
3. To cleanse areas such as wound in which there are sloughing tissues.
4. To relieve edema, ischemia and muscle spasm.

The body parts to receive the moist heat application is submerged in a basin of warm water at 105 to 110 degree F. The duration of the treatment is usually 20 minutes. Ideally the temperature of the solution should be checked frequently and additional solution is added or the solution is replaced in order to maintain the appropriate temperature. The client should be in a comfortable position and the limbs are supported with pillows. Dry the surface throughly at the end of the treatment.

Infrared Rays: (Infrared Lamp)

Infrared lamps transmit infrared rays, which are visible heat rays beyond the red end of the spectrum.

Ultraviolet Rays: (Ultraviolet Lamp)

Ultraviolet lamps transmit infrared ray, which are invisible heat rays beyond the visible spectrum at the violet end. Both these rays are used therapeutically for the production of heat in the tissues.

Therapeutic Uses:

1. Promotes healing of decubitus ulcer.
2. Softens connective tissue.
3. Relieves pain and spasm of the strained muscle.

The radiation heat produced by the infrared and ultraviolet lamps are more intense than the heat given off from the heating lamps. The effects of the exposure to the ultraviolet lamps are

1. Pigmentation of the skin.
2. Production of Vitamin-D.
3. Bactericidal effects.

The duration of the treatment is usually 20 to 30 minutes.

Precautions:

Observe the skin carefully during and after the treatment. The client and the therapist must use protective goggles during the treatment to shut out reflected harmful rays.

3.3 Sitz bath (hip bath)

Sitz bath is a method of applying heat using tepid or hot water to the pelvic or rectal area by sitting in a tub. The client is usually immersed from the mid thigh to the iliac crest. The temperature of the water is 110-115 degree F and the duration of the bath is 15 to 30 minutes.

Purpose:

1. To relieve congestion of the pelvic organs e.g. in dysmenorrhoea.
2. To relieve pain following cystoscopy.
3. To reduce inflammation.
4. To promote drainage of rectal abscess and haemorrhoids.

Solutions Used:

1. Potassium permanganate solution 1:5000
2. Boric acid 1 dram to 1 pint.
3. Eusol solution.

Contraindications:

1. Pregnancy.
2. Menstruation.
3. Renal Inflammation.
4. Increased irritability of the genital organs.

Procedure:

1. Test the water in the bath tub with a thermometer before the client is allowed to enter into the water.
2. Assist the client to the tub or into the sitz bath and position properly.
3. Wrap a blanket around the shoulders to prevent exposure and chilling.
4. Monitor the client closely for sign of weakness and fatigue and discontinue the bath if faintness, pallor, rapid pulse or nausea occurs.
5. Check the temperature of the water in between and keep it at the desired temperature by adding hot water.
6. Do not leave the client alone in the bath tub.
7. When the bath is completed, assist the client to come out of the bath and dry well.
8. If the client complaints of fainting or weakness, assist him out of the bath.
9. The client may feel sleepy due to the sedative effect of the sitz bath, so care should be taken to prevent falling.
10. Record the procedure.

Practical 4

Medical and Surgical Asepsis

4.1 Aseptic Techniques

Aseptic techniques is the effort to keep a client as free from hospital micro-organisms as possible.

Principles of Asepsis

Three things that are extremely important is achieving asepsis are the reduction of time, trauma and trash.

1. Time: The time taken for any medical or surgical procedure is an important factor. Longer the time taken, have the possibility or greater exposure to contamination.
2. Trauma: Trauma occurred due to rough handling, excessive dead space, foreign bodies will contribute to infection.
3. Trash If refers to contamination by bacteria or foreign matter.

Essential Components of Maintaining Asepsis In a Hospital Include:

1. Hand washing, 2) Utilizing gloves, gown and mask as indicated 3) cleaning equipment, 4) Proper Handling of linens is the ways to prevent the spread of germs.

Types of Asepsis

The two types of aseptic techniques that the nurse practices are medical and surgical asepsis.

Medical asepsis: It is a clean technique which includes procedure used to reduce the microorganisms prevent their spread. Eg. Changing patient's bed linen daily, hand washing.

Surgical asepsis: It is a sterile technique which includes procedures used to eliminate the microorganism. Sterile technique is used where sterile instruments are used. Eg . In operation theatre.

Medical asepsis: Medical asepsis is commonly referred as clean technique. The goal is to reduce the number of pathogens or prevent the transmission of pathogens from one person to another. Techniques used should be appropriate to interrupt the spread of the known pathogen.

HAND WASHING AND SCRUBBING TECHNIQUE

4.2 Hand Washing

Definition

A technique of cleaning hands developed to prevent transmission of microorganisms

Hand washing is a vigorous, prior to rubbing together of all surfaces of hands lathered in soap, followed by rinsing under a stream of water. The purpose is to remove soil and transient organisms from the hands to reduce to microbial counts over time.

Purposes	1) Cleanliness, 2) Aesthetic, 3) Remove soil and transient organism, 4) Reduce the total microbial counts – over time 5 to prevent cross infection
Indication	1. At the end of each task 2. Before going into clean areas (or) handling clean articles 3. Before surgical procedure, delivery 4. Before serving or eating food 5. At any time when necessary

Situation for hand washing: GARNER and FAVERS recommend that nurses wash hands in the following situations.

1. Before contact with clients who are susceptible to infection.

   Ex: New born infants, clients with leukaemia clients who are HIV positive.
2. After caring for an infected client.
3. After touching organic material.
4. Before performing invasive procedure such as administration of injections, catheterization and suctioning.
5. Before and after handling dressing (or) touching open wounds.
6. After handling contaminated equipment.
7. Between contacts with client in high risk units.
8. After removal of sterile and non-sterile gloves.

Steps of effective hand washing

Step 1: Wash Palms and fingers.
Step 2: Wash back of hands.
Step 3: Wash fingers and knuckles.
Step 4: Wash thumbs.
Step 5: Wash finger tip.
Step 6: interlocking of hands.
Step 7: Wash wrists.

Guidelines for maintaining hand washing

1. Cut nail shorts to prevent accumulation of dirt.
2. Remove jewellery to ensure through cleaning.
3. Remove the wrist watch and push long uniform sleeves above wrists.
4. Respect the surface of the hands and fingers for breaks (or) cuts in skin and cuticles.

Medical Hand Washing:

Equipment:

1. Warm water
2. Antimicrobial soap/Regular soap
3. Clean towel

Procedure:

1. Remove wrist watch and push long uniform sleeves above wrists.
2. Avoid wearing rings.

3. Be sure finger nails are short and field.
4. Stand in front of skin, keeping hands and uniform away from sinks surface. (it hands touch sink during hand washing repeat it).
5. Open tap and wet elbow hand (hold hands below level).
6. Avoid splashing water against uniforms.
7. Regulate flow of water so that temperature is warm.
8. Wet hands and lower arms thoroughly under running water. Keep hands and forearms lower than elbows during washing.
9. Apply 1 ml of regular or 3 ml or antiseptic liquid soaps to hands lathering thoroughly.
10. Wash hands using plenty of lather and friction for at least 10 to 15 seconds.
11. Interlock fingers and rub palms and back of hands with circular motion atleast 5 times each.
12. Areas under nails are often soiled clean them with nails of other hand (or) clean stick.
13. Rinse hands and wrist thoroughly keeping hands down and elbow up.
14. Dry hands thoroughly from fingers to wrist and forearms with towel.
15. Discard towel in soiled bin.
16. Turn off water.

Surgical hand washing /scrubs:

Aseptic technique is designed to eliminate all micro organisms, including spores and pathogens, from and object and to protect an area from microorganism.

ARTICLES;	1. Soap/antiseptic detergent
	2. Running warm water – to rinse soap and thorough hand wash
	3. Nail brush in antiseptic lotion
	4. Mask and cap

Principles:

1. A sterile object remains sterile when touched only by another sterile object.
2. Only sterile object may be on a sterile field.
3. An object hold below a person' s waist is contaminated.
4. A sterile object becomes contaminated by prolonged exposure to air.
5. When a sterile surface come in contact with a wet it contaminated the surface of sterile object.

Steps to procedure:

1. Ensure that nails are short.
2. Respect hands for abrasions and cuts.
3. After medical hand wash, wear cap and mask.
4. Turn on water.
5. Wet hands and arms under running take warm water and lather with soap to 5cm above the elbows.
6. Hand should be hold above elbows use circular movements to wash palms, back of hands, wrists, forearms and interdigital spaces or 20-25 seconds.
7. Rinse hands and arms thoroughly under running water.
8. Clean under nails of both hands.

9. Scrub nails of each hand with 15 strokes using microbial agent.
10. Holding the brush perpendicular scrub palm, each side of thumb and fingers and posterior side of hand with 10 strokes each.
11. Scrub from wrist to 5cm above each elbow.
12. Entire scrub should last for 5 to 10 minutes.
13. Discard brush to soiled bin.
14. Take care not to touch the tap or sides of the sink during the procedure.
15. Use a sterile towel to dry one hand moving from fingers to elbow.
16. Repeat drying of the other hand using a different towel/use one side to dry one hand reverse side for other hand, if only one towel in available.
17. Discard towel to the solied bin.
18. One assist person to stay while surgical hand washing.

After care:

- Turn off water.
- Towel should be sent to laundry for washing.
- Washed nail brush to be kept in disinfectant solution tray.
- Soap to be kept in soap box and antiseptic solution to kept in cupboard.

WEARING OF GOWN, GLOVE AND MASK

4.3 Gowning

Wear clean or disposable gowns or plastic aprons during procedures to prevent the nurse's uniform likely to become soiled.

Indication:

1. When the nurses changes the dressings of a client with extensive wounds, burns.
2. During delivery procedure and surgical procedure.
3. Client with more susceptible to infection.
4. For strict aseptic diagnostic procedures like FNAC. Lumber puncture, bone marrow biopsy etc.

Purpose:

1. To prevent soiling of clothing during contact with the patient.
2. To protect health care personal from coming in contact with infected materials.

Steps to procedures:-

1. Pick up a sterile gown and allow it to unsoiled keeping inside of the gown towards the body without allowing the outside of the gown to touch any area.
2. With hands at shoulder level, slip both arms into armholes simultaneously. Ask the assisting nurse to bring the gown over shoulder.
3. The assisting nurse fastens the ties at the neck. Overlap the gown at the back as much as possible and faster the waist, ties or belt.
4. Prevent the gown from becoming wet.
5. While removing the gown avoid touching soiled parts on the outside of the gown. Roll up the gown with soiled part inside and discard in the appropriate container.

4.4 Gloving

Gloving is defined as the putting up of a pair of sterile gloves to protect own hand from pathogenic micro organisms and to avoid contamination of a sterile areas by hand.

Purpose:

1. To protect the nurse from the pathogenic microorganisms.
2. To safely use her hands to handle without contaminating any objects.

Indication:

1. Contact with open wound.
2. For strict aseptic diagnostic procedures.
3. Handle with infected materials like blood, Urine, Faeces etc.
4. Nurse or health personnel with any cut injury in hands or fingers.
5. For surgical procedure and delivery procedure.

Steps to procedure:

1. When the glove packet is collected from the autoclaved bin and places flat on the sterile towel.
2. The packet of powder is removed from the glove pack and the hands are powdered.
3. Identify right and left hand.
4. Pick up the left glove with the right hand by the inside turned down cuff.
5. Carefully push the fingers of the left hand into the glove until it reaches the cuff.
6. Pick up the right glove by putting the gloved hand under the cuff.
7. Carefully push the fingers of the right hand into the gloved hand into the glove and pull the glove cuff over the cuff of the down.
8. Now pull the cuff on the left glove completely over the glove cuff to the left hands.
9. Adjust the gloves.

4.5 Wearing Masks

Mask are worn to reduce the risk for transmission of organisms by the droplet contact, air borne routes and splatters of body substances.

Purpose:

1. The mask should be worn by personal who work close to the client if the infection is transmitted by large particle aerosol.

Eg. Measles, mumps, acute respiratory diseases in children.

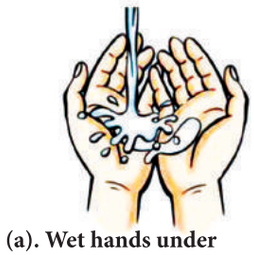
2. The mask should be worn by all personal entering the room if the infection is transmitted by small particle aerosols (droplet nuclei) eg. Pulmonary tuberculosis.

Steps to procedure:

1. Find top edge of mask (usually has thin metal strip along edge).
2. Hold the mask by top two strings tie two top ties at the top of the back of the head with ties above ears.
3. Tie two lower ties snugly around the neck with the mask well under the chin.
4. Ensure that the mask covers the mouth and the nose adequately.

5. If glasses are worn, fit the upper edge of the mask under the glasses.
6. Avoid unnecessary talking and if possible sneezing or coughing.
7. When removing a mask with strings first untie the lower stringe of the mask
8. Discard a disposable mask in the waste container.
9. Wash the hands if they have become contaminated by accidentally touching the solid part of the mask.

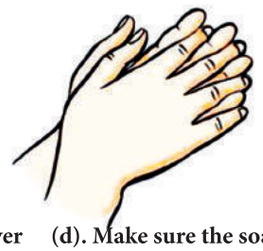
STEPS OF HAND WASHING



(a). Wet hands under running water

(b). Apply soap and rub palms together to ensure complete coverage

(c). Spread the lather over the backs of the hands



(d). Make sure the soap gets in between the fingers

(e). Grip the fingers on each hand

(f). Pay particular attention to the thumbs

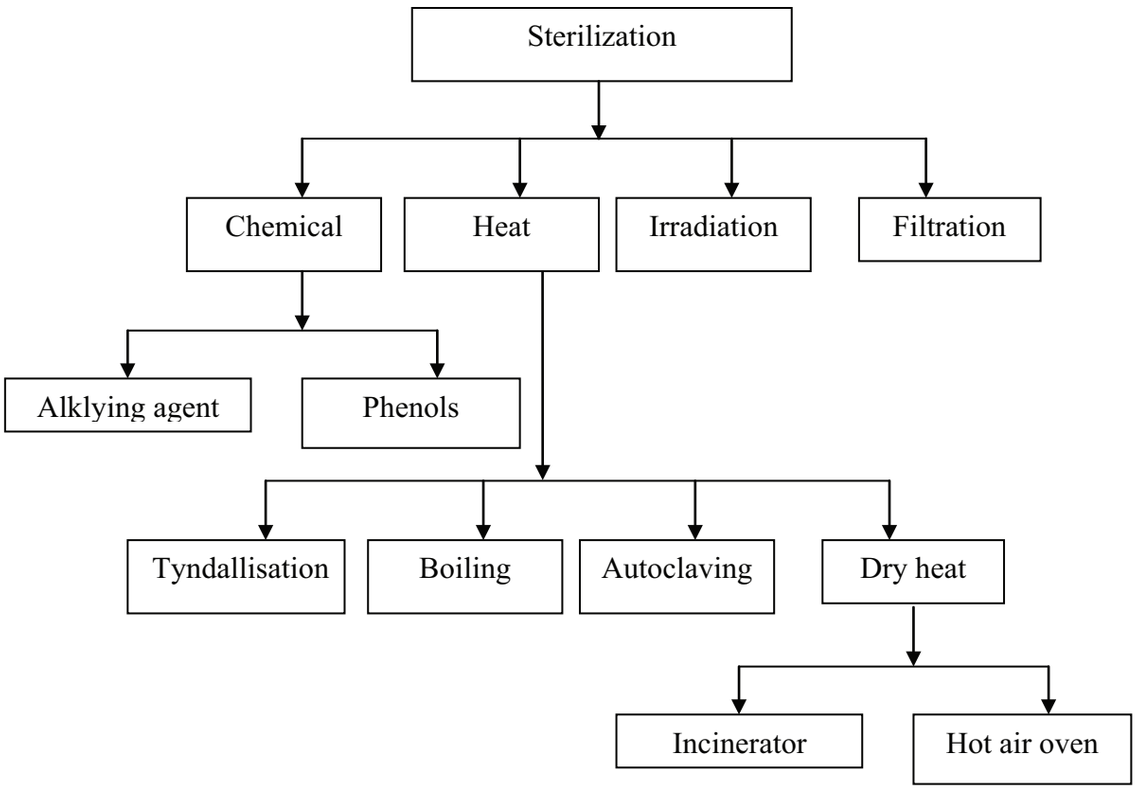
(g). Press fingertips into the palm of each hand

(h). Dry thoroughly with a clean towel

STEPS OF SURGICAL HAND WASH

Practical 5

Sterilization



5.1 Definition

It is the practice to reduce or eliminate contaminants (such as bacteria, viruses, fungi and parasites.

5.2 Methods of sterilization

1. **Heat:** It is rapid and reliable method to destroy the small and heat resistant objects.
2. **Chemicals:** It is slow corrosive and used for heat – sensitive objects and for long surface.
3. **Filtration:** It requires membrane filtration apparatus and only used for liquids.
4. **Irradiation:** Ionizing irradiation is reliable but expensive and it is used to sterilize the rooms.

5.2.1 Heat

1. **Tyndallisation:** Rapid steaming at 100°C of culture media n each of three successive days, allowing spores to germinate and to be subsequently killed.
2. Boiling: This method is suitable for enamel metal, glass and rubber wares.

Bowl sterilizers are used for large articles.

Instrument sterilizers are used for smaller articles.

Points to be remember:

- See that articles are quite clean and completely immersed in the water which also must be clean.
- Only after the water comes to the boil start timing. If more articles are added the sterilization to be must begin again
- Boil vigorously for 5 minutes boiling will not kill spores.
- Remove articles with sterile chattel or other lifting forceps on to a sterile surface.

3. Autoclaving: This is a reliable method. This is the method used for most articles.

Points to remember:

- All the articles should be clean and dry before packing.
- The hole in the drums must be open with placing into the autoclave and closed immediately on taking them out.
- Bundle should be not too large and not tightly packed. Steam should be able to penetrate to the centre.
- Rubber gloves should in 5 lbs for 15 mins.
- To autoclave bottles of fluid, loosen the screw caps. Evacuate the steam slowly.

General instructions:

- The articles being sterilized should with stand high temperature.
- The wrapper and the container should allow penetration of the steam into the article.
- The inner champers must not be too full nor the contents arranged too compactly.
- The temperature and pressure of the steam should be high enough to kill all the micro organisms including spores.
- The destruction of a bacteria depends upon the length of time the articles are exposed to steam under pressure. If the time is increased to the exposure the pressure is reduced.
- In operating an autoclave, it is important to remember that all the air in the inner chamber must be driven out and entirely replaced by steam.
- The articles should be left in the autoclave for a short times after the procedure is over to dry materials.

4. Dry heat:

Sterilizing of glassware including syringes is often done in a hot air oven at 160°C for one hour. Spores as well as organisms are killed. Rubber will not stand up to this heat. This method is effective for dressing towels and gowns.

Two methods are used:

1. **Incineration:** Used for disposal of dressings laboratory media and human tissues. Incinerator may cause unacceptable environmental pollution.
2. **Hot air oven:** It is used for objects which can not tolerate moisture. Mostly used for glass ware, oils and powders.

Disinfection: Destruction of organisms by chemical is used in the following circumstances.

1. **Environmental:** Disinfection of excreta, floors, furniture, linen and fabrics.
2. **Instruments/Equipments:** Sterilization of heat sensitive objects in contact with patient.
3. **Skin and Wounds:** Removal of pathogens.
4. **Food medication:** Preservation in prevention of spoilage.
5. **Water:** Removal of pathogens.

5.2.2 Chemical sterilization

It is the method used for eye instruments and other delicate instruments.

Points to remember:

- Articles must be clean and free from pus, blood or oil.
- It must be completely immersed in the disinfectant.
- The disinfectant should be of a certain strength and articles must be in contact with it for a certain length of time.
- After sterilization articles must be well rinsed in sterile water before use.

Types of chemicals:

A Alkylating agents:

They are capable of killing bacteria, spores and viruses. They are the acceptable chemical alternative to usual heat treatment. This include:

1. **Formaldehyde:** Used for instruments and machines sterilization.
2. **Gluteraldehyde:** Used for instrument sterilization.
3. **Ethylene oxide:** Used for rubber and plastic articles sterilization.
4. **Propiolactone:** Used for gaseous sterilization.

B Phenols:

It includes acids and semi synthetic compounds in soap solution. It is used for contaminated surfaces.

Advantages:

This is the method used to sterilize the articles that are destroyed by heat.

Disadvantages:

1. This disinfectants does not destroy the spores.
2. Some disinfectants are injurious to the skin and articles.

Important points to remember:

- They should be used in correct strength.
- The articles should be fully submerged in it.
- They should be placed for a sufficient length of time.
- They should not be injurious to the skin and articles.
- The article should be thoroughly cleaned to remove the organic material.

Fumigation or gas sterilization:

The agents that are commonly used for fumigation are formalin tablets and ethylene oxide liquids. The exposure will destroy all types of bacteria, Viruses and most of the spores. The best results can be obtained with high concentration of gas and humidity.

Disadvantages

The smell of formaldehyde is irritant to the eyes, skin and mucus membrane.

5.2.3 Irradiation

IV) URAVIOLET LIGHT STERILIZATION:

Ultraviolet sterilization is effective for disinfecting working surfaces.

Disadvantages:

1. Bacteria in shadows are unaffected.
2. It does not penetrate.
3. Prolonged exposure to the ultraviolet rays causes conjunctiva damage and also injurious to the skin and tissues.
4. It is expensive.

5.3 Preparing articles for sterilization

1. The articles should be carefully arranged so that those needed first are on top.
2. They must be loosely packed for steam to penetrate.
3. Drums must the perforations opened.
4. Bundles should have a double wrapper.
5. For proper sterilization of instrument it should be free from dried blood or discharge.
6. Rubber tubing should be cleaned with cold water then with hot and soapy water. The inside must be thoroughly clean.
7. Sharp instruments, knives and needles should be dealt with separately to avoid cuts and puncture.

Practical 6

Public Health Procedures

Topic:- Hospital and its Environment.

Visiting place :- Any Hospital.

Practical work:- Survey.

1. Cleanliness of the ward.
2. Sanitary conditions of the ward.
3. Chlorination.

Practical 7

Urine Analysis

FYVH23

7.1 Test for Sugar - Benedict's test

Benedict's test is used as a simple test for reducing sugars. A reducing sugar is a carbohydrate possessing either a free aldehyde or free ketone functional group as part of its molecular structure. This includes all monosaccharides (eg. glucose, fructose, galactose) and many disaccharides, including lactose and maltose.

Benedict's test is most commonly used to test for the presence of glucose in urine. Glucose found to be present in urine is an indication of Diabetes mellitus

Apparatus:

Benedict's solution (fresh; certainly not more than 3 months old), Dropper, Test-tube, Test-tube holder.

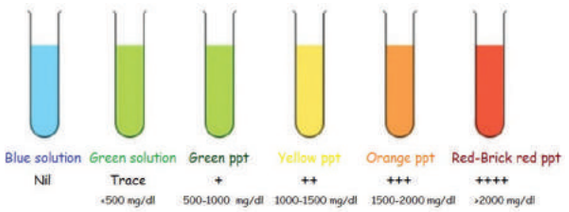
Quality checking of the Benedict's solution: Benedict's solution is blue in color. In order to check purity of Benedict's solution take 5 ml of Benedict's solution in test tube and heat it. If it does not change color, it means, it is pure.

Procedure:

- Take 5 ml (one teaspoon) of Benedict's solution in the test-tube.
- Holding the test-tube with the holder, heat it over a spirit lamp till the Benedict's Solution boils without overflowing.
- Drop 8 to 10 drops of urine into the boiling Benedict's solution.
- After again boiling the mixture, let it cool down.
- While cooling, the mixture changes color.
- Observe the color change and precipitate formation and analyze the test result

Result interpretation:

The colour of the mixture serves as a guide to the amount of sugar in the urine:



(ppt – precipitate)

Color	Approximate glucose mg/dl	Indication
Blue solution	Nil	
Green solution	<500 mg/dl	Trace
Green ppt	500-1000 mg/dl	+
Yellow ppt	1000-1500 mg/dl	++

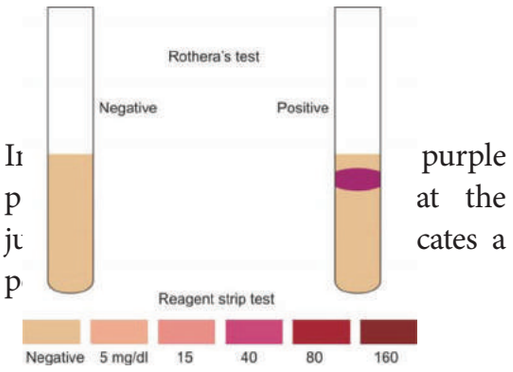
Color	Approximate glucose mg/dl	Indication
Orange ppt	1500-2000 mg/dl	+++
Red to Brick red ppt	>2000 mg/dl	++++

7.2 Test for albumin

- Fill three-fourth of a test tube with filtered urine (filtering removes pus if present).
- See the reaction of the urine is acidic. If found alkaline, add one drop of acetic acid and make it acidic.
- Heat the upper third of the urine over sprit lamp and allow it to boil.
- A cloud may appear either due to phosphate or albumin.
- Add acidic acid drop by drop in to the test tube.
- If the urine is still cloudy it indicates the presence of albumin.
- If it becomes clear it indicates the presence of phosphates.
- No albumin is presence in the normal urine.
- If the urine is highly acidic or highly alkaline, the reading will be false.

7.3 Test for acetone

- Take 5 ml of urine in a test tube and saturate it with ammonium sulphate.
- Add a small crystal of sodium nitroprusside and mix well.
- Slowly run along the side of the test tube liquor ammonia to form a layer.



- In purple at the junction indicates a

Special points

- Keep reagent tablets in a cool, dry place at a temperature below 86°F(30° C).
- Do not refrigerate the reagent tablets and strips.
- Keep the container tightly closed.
- Do not use discolored or outdated tablets or strips.

7.4 Test for bile salts (hey's test)

- Take half of urine sample in a test tube.
- Sprinkle sulphur powder on the surface of the urine.
- If the powder sinks down to the test tube, it indicated the presence of bile salts.
- This is because, bile salts reduce the surface tension of the urine and allows the sulphur powder to sink down.

Test for bile pigments

- Fill three-fourth of a test tube with urine.
- Add iodine drops along the sides of the test tube, so as to form the layer on the surface of the urine.
- A green color at the junction of the two liquids indicates the presence of bile pigments.
- Discard the urine and clean the test tube.

Practical 8

Elimination Need

8.1 Offering and Removing of bed pan

Bed patients usually need to use a bedpan about once or three times a day. The ward may be closed with a screen for this purpose as a routine. However if a patient makes request for a bedpan at another time, you should meet the request with understanding and without delay.

Method of giving a bedpan

1) Screen the bed.
2) Bring a covered bedpan to the bedside and place it on the stool. The bedpan should be clean and dry. In cold weather, warm if first with hot water pad the seat of the bedpan. If the patient is very weak and emaciated.
3) Protect the bed with a rubber sheet if necessary.
4) Place the bedpan on the bedside of the patient.
5) Place your left hand beneath the lower back to aid the patient in raising the buttocks and place the bedpan in position without force. Adjust the bedpan comfortably for the patient. Lower and leave him alone unless he is too ill or weak.
6) Get a toilet tray ready and bring it to the bedside.

Contents of the tray are

S. No.	Items
1.	Jug with warm water
2.	Soap
3.	Wash cloth and towel
4.	Bowl with rag pieces or cotton
5.	Long artery forceps.
6.	Kidney tray and paper bag

To Remove and empty the bed pan:-

1) Let the patient wash himself if he is able to do so. Help him pouring water over the genitals. Remove the bedpan and give the patient water and soap for hand washing.
2) If the patient is helpless use moistened rag pieces or cotton and the artery forceps and clean from front to back to prevent a infection. Turn him on his side while removing the bedpan (a second person may be needed to help).
3) Make the patient comfortable.
4) Cover the bedpan, take it to the toilet room.
5) Observe the contents.

6) Empty the content and rinse the bedpan with cold water. Then clean it with the brush kept in soap solution. The bedpan may be soaked in disinfectant for one hour or sterilised if there are facilities for dui so.

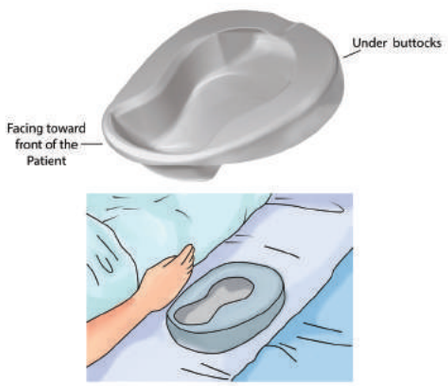
7) Remove other articles from the bedside. Clean and put them back in proper place.

8) Wash your hands well. Remove the screen and leave them until tidy, record the time and observation.

8.2 Offering Urinal

Definition:- Bed rest or immobility can interfere with micturition (act of passing urine). It does not allow the patient to have the normal position for emptying the bladder.

For a man who has not been able to reach the toilet facilities he may stand at the bedside and avoid into a plastic or metal receptacle for urine. If he is unconscious or enable to stand at bedside the assistant needs to assist him to use the urinal.



Purpose

1. Provide a container for collection of urine
2. To measure the urine output
3. For observation of colour and consistency of urine

Indications

1. For patient with impaired mobility due to surgery, fracture, injury
2. Elderly man (aging impaired micturition) may require urinal more frequently to avoid urinary incontinence
3. For mobile person who is able to go to bathroom, does not required the urinal

Practical 9

SPECIMEN COLLECTION

A specimen may be defined as a small quantity of a substance or object which shows the kind and quality of the whole (sample).

Specimen collection defined as the collection of the specimen for the purposes of diagnosis, treatment and recovery.

Preparation of the clients

- Explain the procedure to the patient. It helps to gain the client's trust and cooperation.
- When preparing the client the nurse's explanation should be clear, straight forward and complete.
- Some test requires more detailed instruction to promote cooperation and ensure accurate specimen collections especially when the client has to modify his behavior before the test and when he will be collecting the specimen himself.
- Be sure that the client has understood clearly and correctly the information.
- Proper understanding of the procedure will help to gain informed consent.
- Provide a appropriate container and explain how to use it.
- In case of collection of urine, instruct the client to wash the genitalia with soap and water, then rinse it in water before collecting the specimen.
- Instruct the client not to contaminate the outside of the bottle.
- Instructions to use gloves and other barriers as necessary.

Preparation of the equipment

- All specimens are collected in clean and dry containers.
- Use containers with wide mouth.
- Sterile containers are used for culture.
- Wax lined disposable cups are used for sputum and stool specimens.
- Large containers are used for 24 hours urine specimens.
- Sterile test tubes are used to collect fluids.
- Clean slides are used to collect smears.
- No antiseptic solution must be present in the specimen bottle as they may hamper the growth of micro organism and thus obscure the results.

Collection of urine specimen

9.1 Method of collecting single urine specimen

Single urine specimen means the amount of urine voided at a time. Usually the morning specimens are collected. The amount of 100-120 ml of urine will be sufficient for the usual tests.

After cleaning the genital, the client passes urine into clean urinal or a clean kidney tray or directly in to specimen bottle, taking care not to spill the urine on the outside of the container.

Method to collect Midstream specimen for culture

Ask the client to clean the genital area with soap and water then rinse in water alone. In female clients the labia are separated for cleaning and kept apart until the urine has been collected. In male client, the foreskin should be retracted and the genital area penis is cleaned before the collection of the urine.

The client begins to void in to the toilet, commode or bed pan. Than the client stops the stream of urine, the sterile container is positioned and continues to void in to the container. When enough urine has been voided, for specimen, the client stops the stream again; the container is removed and then finishes voiding in the original receptacle.

Method of collecting 24 hours urine specimen

24 hours urine specimen means to collect all the urine voided in 24 hours. The collection of urine begins at 6AM and discard the whole urine. All the subsequent voiding should be measured and collected in the bottle which is labeled. Continue to collect till morning. Ask the client to void at 6 AM on the next day and add it to the previously collected.

Method of collecting urine specimen from unconscious clients and children

In male babies or unconscious male clients, take a test tube, a barrel of syringe or nirodh or condom with rubber tubing and is attached to the penis. It is kept in place by adhesive tapes. In female attach a wide mouthed container or a funnel with rubber tubing to the vulva by means of a T binder. The rubber tubing is connected to a bottle and the urine is collected in the bottle.

Method of collecting sputum specimen

Water proof disposable sputum cups or wide mouthed containers are used to collect the sputum specimen. The client should be given the container and is instructed to raise the material from the lungs and not simply expectorating the saliva or discharges from the nose or throat. The sputum should be collected before brushing the teeth and the food. Mouth can be rinsed with plain water, not any antiseptic mouth washes.

Method of collecting stool specimen

Water proof disposable sputum cups or wide mouthed containers are provide with necessary instructions. The client passes stool in a clean bedpan. A small amount

of stool is removed with a stick or spatula and is placed in the container. Discard the stick in the waste bin.

9.2 Collecting stool specimen for routine examination

DEFINITION

Collection of a small quantity of stool sample in a container for testing in the laboratory.

PURPOSE

To test the stool for normal and presence of abnormalities.

ARTICLES

1. A Clean specimen container.
2. A spatula for putting the specimen into the container.
3. Dry bed-pan (for helpless patients). Additional bedpan for rinsing and cleaning.
4. Laboratory requisition form.
5. Clean gloves.
6. Waste paper (for wrapping used spatula).
7. A pitcher of water (for helpless patient).
8. Tissues / towel.

PROCEDURE

	Nursing action	Rationale
1	Check the physician's order and 'Nursing Care Plan'.	Obtains specific instruction and information
2	Identify the patient.	Helps to perform the right procedure for the right patient.
3	Explain to patient the procedure and make clear what is expected of him/her.	Aids in proper collection of specimen.
4	Give the labeled container and spatula to the patient with instructions. ie. To defecate into clean dry bedpan. Not to contaminate specimen with urine.	
5	Done gloves	
6	For helpless patient assist patient on to the clean bedpan	
7	Leave him with instructions	
8	When done, remove and keep aside the bedpan after placing the second one for cleansing.	

	Nursing action	Rationale
9	Collect about 2cm of formed stool or 20 to 30ml of liquid diarrheal stool	
10	Once the specimen is collected send it to lab with the appropriate requisition forms.	
11	Wash and replace the reusable articles	
12	Dispose off the used spatula wrapped in waste paper.	Prevents contamination
13	Wash and dry hands.	Prevents cross contamination.
14	Record information in the patient's charts.	

Special considerations

1. Send specimen to be examined for parasites immediately, so that parasites may be observed under microscope while viable, fresh and warm.
2. Inform if bleeding hemorrhoids or hematuria is present.
3. Postpone test if woman has menstrual periods, until three days after it has ceased.
4. Consider that intake of folic acid, anticoagulant, barium, bismuth, mineral oil, vitamin C, and antibiotics may alter the results.
5. Use two bedpans for helpless patient- one for collecting specimen and another for cleaning.

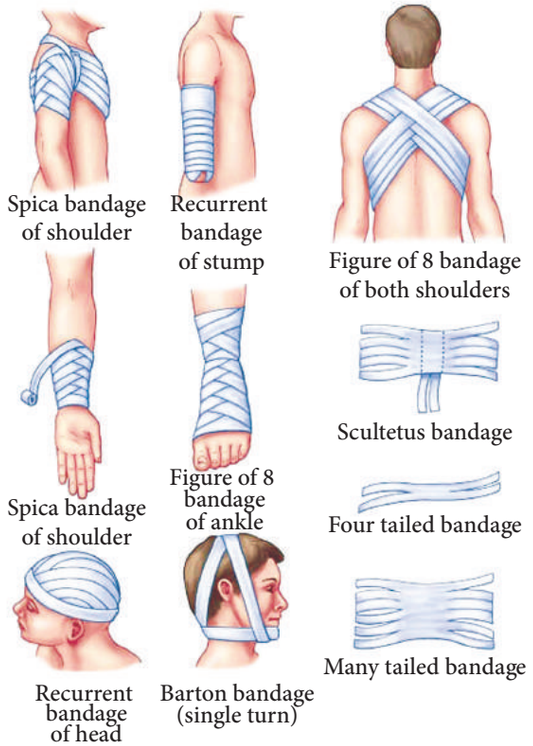
Practical 10

Application of Bandages

10.1 Introduction

A bandage is a piece of material used either to support a medical device such as a

- Dressing
- Splint
- Support or
- To restrict the movement of a part of the body



Uses

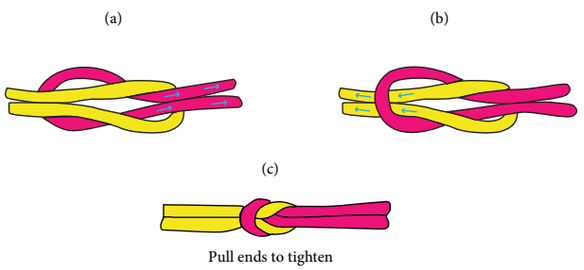
Bandages are used to:

1. Maintain direct pressure over a dressing to control bleeding.
2. Keep dressings or splints in position.
3. Support a limb or joint.
4. Prevent movement.
5. Prevent or reduce swelling.
6. Help in lifting and carrying casualties.

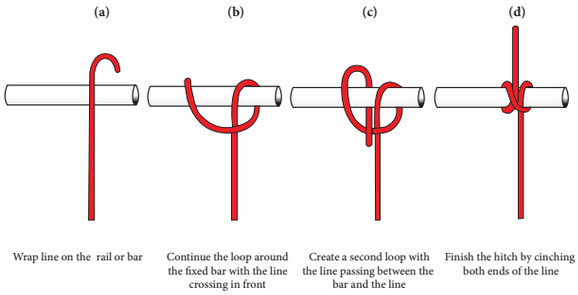
10.2 Types

1. Triangular bandages
2. Roller bandages

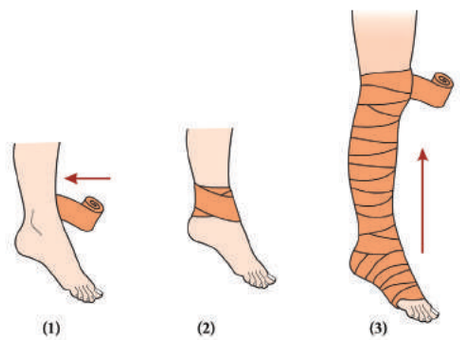
A reef knot is used to tie the ends of the bandage, because it is flat and will not slip. The rule for tying a reef knot is 'right over left then left over right'.



A clove hitch made from a narrow bandage, is placed round his wrist. The ends of the bandage are taken around the neck and tied.

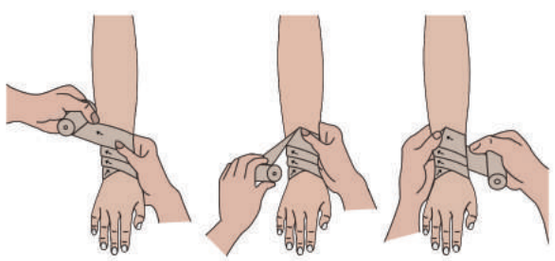


Simple Spiral Bandage:



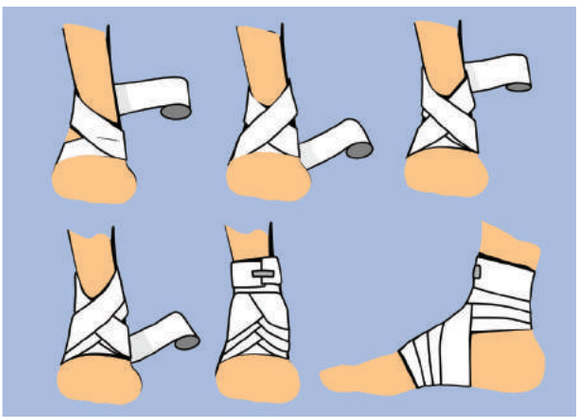
This is used on fingers or other uniform surfaces. This bandage is just round in spirals.

Reversed Spiral Bandage:

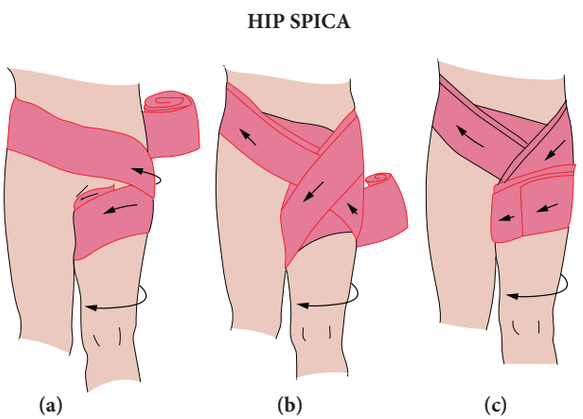


This is used on limbs where the thickness of the part varies. e.g Fore arm & Legs.

Figure of Eight



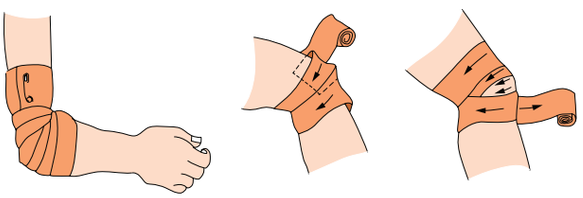
This may be used on limbs instead of the reverse spiral also for the hand and foot.



Spica:

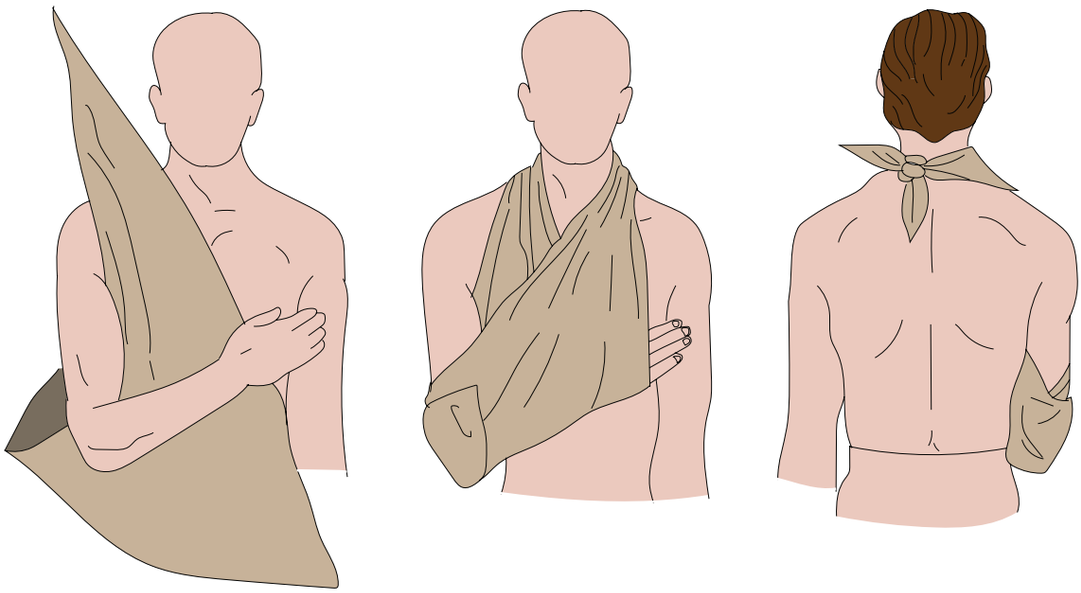
This is used for shoulder, hip and thumb. And this is a modified figure of eight.

Divergent Spica:

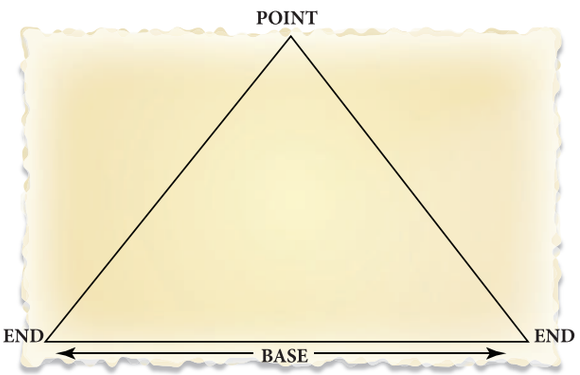


This bandage pattern encloses a flexed joint or projection. It is used for a flexed joint. e.g Elbow, knee, heel.

Triangular Bandage:

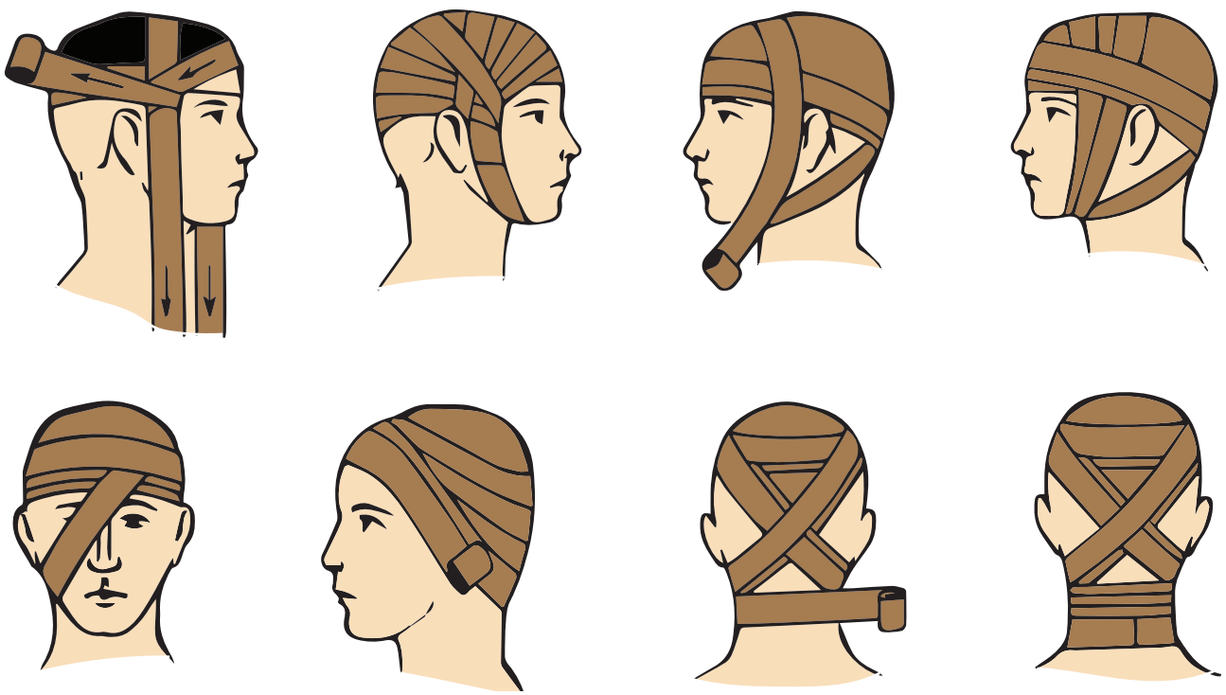


A triangular bandage is used in treating a fracture of the collar bone. It helps to keep the hand raised high up, giving relief from pain due to the fracture.



10.3 Special Bandages:

Capeline bandage for head.



- one end being continued round the scalp and other going order it
- scalp turn secured by horizontal turn
- capline bandage completed

Eye and Ear Bandage

10.4 Patterns used in Bandaging

1. Circular turns, as used for head and trunk.
2. Simple spiral, for parts of uniform thickness, eg. Fingers wrist.
3. Reverse spiral, used on limbs where the thickness of the part varies, e.g forearm leg.
4. Figure-of-Eight

This may be used on limbs instead of the reverse spiral also for the hand and foot.

5. Spica, used for the shoulder, hip and thumb
6. Divergent Spica, for a flexed joint, e.g elbow, knee, heel
7. Recurrent to cover tips of fingers or a stump.
8. Special bandages such as the capeline for the head, eye bandage, ear and breast bandages.

10.5 Application of Bandage

Preliminary Assessment

- Check the doctors order to see the specific precautions if any regarding the positioning and movement.
- Assess the patients need for application of bandage.
- Monitor vital signs.
- Assess the patients mental status.
- Assess the need for pain medication
- Assure the patient, the patient's family.
- Assess the adequacy of circulation by noting surface temperature, skin colour, and sensation of body parts to be wrapped.
- For tying the bandage a 'reef knot' must be always used.
- The knot should be made where it does not hurt the skin or cause discomfort.
- Tuck the loose ends of the bandage out of sight.
- Not in use the triangular bandages should be folded narrow. Bring the two ends to the centre and fold again. It becomes a packet which measures 16 x 9 cm handy to carry.
- Wrinkled Bandages are uncomfortable.
- Never ignore any complaints of pain experienced by the patient. This should be invested and the cause is removed immediately.

- Do not use extra turns in order to use all the bandages.
- When completed, fix the bandage with a circular turn and secure it with a safety pin or other suitable materials such as adhesive strapping.

Preparation of the patient

- Explain the sequence of the procedure to the patient and explain how the patient can assist you.
- Place the articles needed conveniently in the bed side table.
- Bring the patient to the edge of the bed.
- Provide privacy.
- Help the patient to assume comfortable and correct position.
- Perform hand hygiene.

Rules for Application

- Face the patient.
- When bandaging left limb, hold the head of the bandage in the right hand vice versa.
- Apply the outer side of the bandage over the pad and wind it around the injury twice so that it is firm.
- Bandage from below upwards over the limb. Also make it a roll to apply bandage from the inner side to the outer side.
- See that the bandage is neither too loose nor too tight.
- Roll bandage so that each layer covers two-thirds of the earlier layer. Fix the bandage by pinning it up or using adhesive plaster. The usual practice of tearing the final end into two long tails and tying them up is quite satisfactory.

Articals Required

1. Correct width and number of bandages.
2. Disposable gloves (if necessary)
3. Safety pins
4. Scissors
5. Adhesive tapes
6. Rubber Sheet (if necessary)

Procedure

- Apply bandage from distal point toward proximal boundary using variety to turns to cover various shapes of body parts.
- Unroll and very slightly stretch bandage
- Over lap turns by one half to two thirds width of bandage rolls.
- Apply additional rolls without leaving any uncovered skin surface. Secure last bandage applied.
- Remove gloves if worn and perform hand hygiene.
- Assess distal circulation when bandage application is complete and atleast twice during 8 hours period.
- observe the bandage site for 5 – P

It comes in various widths lengths and types of material. For best results, use different widths for different body areas.

For e.g

Fingers	—	1 inches
Hand & arm	—	2 to 2.5 inches
Leg	—	3 to 3.5 inches
Trunk	—	4 to 6 inches

Five 'P'
- Pain
- Pallor
- Pulselessness
- Palpate skin for warmth
- Paralysis

Nursing - General- Class XI
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