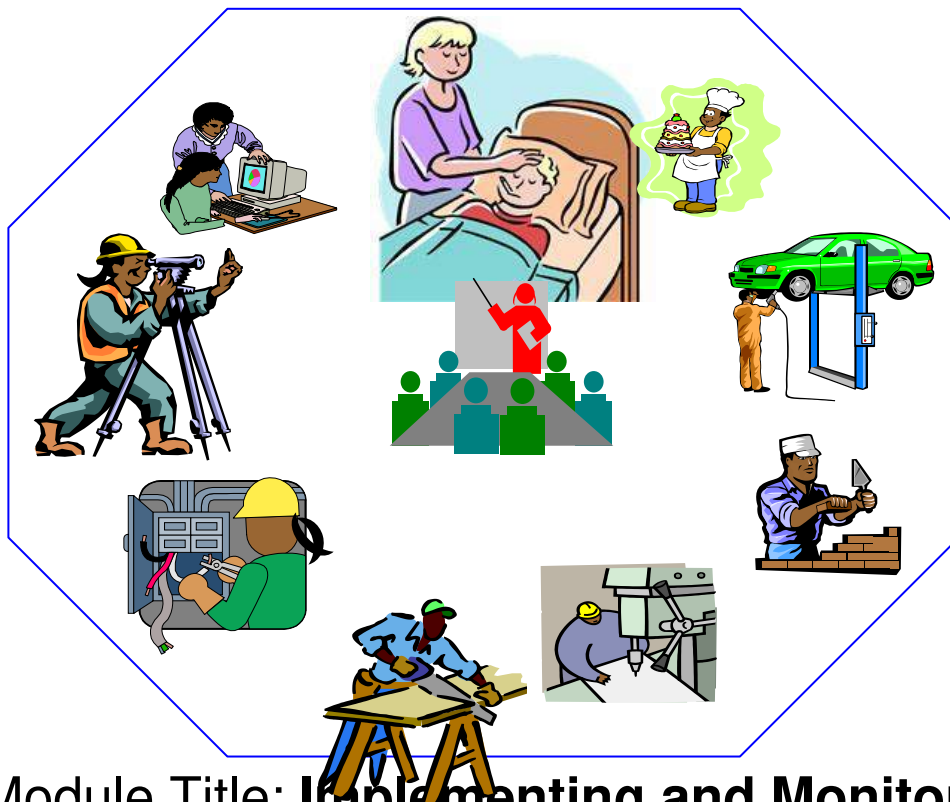




## **Nursing Level-IV**

# **Implement and Monitor Nursing Care for Chronic Health Problems**

**Based on Dec, 2018 Version OS and Dec, 2019  
Version Curriculum**



**Module Title: Implementing and Monitoring  
Nursing Care for Chronic Health Problems**

**LG Code: HLT NUR4 06 LO (1-8) LG (23-30)**

**TTLM Code: HLT NUR4 TTLM 0221 v1**

February, 2021

## Table of Contents

LO #1-Identify the impact of acute health problems on the client and their family .....	1
Information Sheet 1- Acute health problems .....	3
Self-Check-1 .....	20
Information Sheet 2: Physical and psychological impact of acute health problem....	22
LO#2 Contribute to planning care for the client with acute health problems .....	28
Information Sheet 1- Contribute to planning care for the client with acute health problems.....	30
Self-Check-1 .....	31
Information Sheet 2- Exchange of information on the activities of daily living in discharge planning .....	32
Information Sheet 3- Discussing clients care with relevant persons .....	33
Information Sheet 4- Discussing clients care with relevant persons .....	34
Information sheet 5 -Clients discharge procedure .....	36
Information sheet 6-Documenting and reporting changes in clients condition .....	38
LO #3 contribute to multidisciplinary health care team in caring for clients in the critical care environment.....	44
LO #4 Perform nursing interventions for acute health problems.....	50
Self-Check-1 .....	65
LO #5 Contribute to an emergency response .....	67
Information sheet 1-Emergency response team .....	69
Information sheet 2-emergency equipment .....	71
Information sheet 3- Request from emergency response team .....	74
Information sheet 1 -Request from emergency response team .....	76
Self-Check-1 .....	88
Operation sheet 1- Cardiopulmonary resuscitation (CPR).....	89
Operation title: - Performing CPR.....	89
LAP Test-1.....	90
Operation title: -Controlling External bleeding .....	90
Operation title: -Managing chock.....	91
LO#6-Contribute to pre-operative nursing care of a client .....	94

Information sheet 1- Collection of pre-operative client health assessment data.....	96
Information sheet 2- Preparation for specific surgical procedures.....	102
Information sheet 3- Nursing management of a preoperative client .....	114
Information sheet 4 Monitoring and reporting actions and side effects of drugs.....	122
LO#7 manage medical and surgical related disorders.....	127
Information sheet 1 skin disorder.....	129
Information sheet 2- Musculoskeletal disorders .....	169
Information sheet 3- providing care for patients with respiratory disorders.....	186
Information sheet 4- providing nursing care for patients with cardiac disorders .....	227
information sheet 5- providing nursing care for patients with vascular disorder .....	239
Information sheet 6- Gastro -intestinal system disorder .....	261
Information sheet 7- Endocrine disorder.....	287
Information sheet # 8 Genito-urinary system problems .....	294
Information sheet 9- Ear, eye, nose and throat disorders.....	310
LO #8-Contribute to nursing care of the client receiving a blood transfusion.....	318
Self-Check-1 .....	329



LG #23	LO #1-Identify the impact of acute health problems on the client and their family
<b>Instruction sheet</b>	
<p>This learning guide is developed to provide you the necessary information regarding the following content coverage and topics:</p> <ul style="list-style-type: none"> <li>• Clinical manifestation of acute health problem</li> <li>• Physical and psychological impact of acute health problem</li> <li>• Pathophysiology</li> <li>• acute and potential health problems</li> <li>• Problem solving approach to assess the impact of acute health problem</li> <li>• Available resources and support services</li> <li>• Confidentiality</li> </ul> <p>This guide will also assist you to attain the learning outcomes stated in the cover page. Specifically, upon completion of this learning guide, you will be able to:</p> <p>Identify Clinical manifestation of acute health problem</p> <ul style="list-style-type: none"> <li>• Discuss Physical and psychological impact of acute health problem</li> <li>• Explain Pathophysiology</li> <li>• Identify acute and potential health problems</li> <li>• assess the impact of acute health problem using problem solving approach</li> <li>• identify Available resources and support services</li> <li>• Maintaining Confidentiality</li> </ul>	
<b>Learning Instructions:</b>	

- 1** Read the specific objectives of this Learning Guide.
- 2** Follow the instructions described below.
- 3** Read the information written in the “Information Sheets”. Try to understand what are being discussed. Ask your trainer for assistance if you have hard time understanding them.
- 4** Accomplish the “Self-checks” which are placed following all information sheets.
- 5** Ask from your trainer the key to correction (key answers) or you can request your trainer to correct your work. (You are to get the key answer only after you finished answering the Self-checks).
- 6** If you earned a satisfactory evaluation proceed to “Operation sheets
- 7** Perform “the Learning activity performance test” which is placed following “Operation sheets” ,
- 8** If your performance is satisfactory proceed to the next learning guide,
- 9** If your performance is unsatisfactory, see your trainer for further instructions or go back to “Operation sheets”.

## Information Sheet 1- Acute health problems

### 1.1 Acute and Chronic Health problems problems

Acute conditions are severe and sudden in onset. This could describe anything from a broken bone to an asthma attack. A chronic condition, by contrast is a long-developing syndrome, such as osteoporosis or asthma. Note that osteoporosis, a chronic condition, may cause a broken bone, an acute condition. An acute asthma attack occurs in the midst of the chronic disease of asthma. Acute conditions, such as a first asthma attack, may lead to a chronic syndrome if untreated.

#### **Acute Health Problems**

##### **Acute Glomerulonephritis:**

Glomerulonephritis is an inflammation of the glomerular capillaries. Acute glomerulonephritis is more common in children older than 2 years of age, but it can occur at nearly any age.

##### **Clinical Manifestations**

The primary presenting features of acute glomerulonephritis are hematuria, edema, azotemia (concentration of urea and other nitrogenous wastes in the blood), and proteinuria (<3.0 g of proteinuria per day) (Hricik, Miller & Sedor, 2003). The hematuria may be microscopic (identifiable only through microscopic examination) or macroscopic (visible to the eye). The urine may appear cola-colored because of red blood cells (RBCs) and protein plugs or casts; RBC casts indicate glomerular injury. Glomerulonephritis may be mild and the hematuria discovered incidentally through a routine microscopic urinalysis, or the disease may be severe, with acute renal failure (ARF) and oliguria.

## **Medical Management**

Management consists primarily of treating symptoms, attempting to preserve kidney function, and treating complications promptly. Pharmacologic therapy depends on the cause of acute glomerulonephritis. If residual streptococcal infection is suspected, penicillin is the agent of choice; however, other antibiotic agents may be prescribed. Corticosteroids and immunosuppressant medications may be prescribed for patients with rapidly progressive acute glomerulonephritis.

Dietary protein is restricted when renal insufficiency and nitrogen retention (elevated BUN) develop. Sodium is restricted when the patient has hypertension, edema, and heart failure. Loop diuretic and antihypertensive medications may be prescribed to control hypertension. Prolonged bed rest has little value and does not alter long-term outcomes.

## **Nursing Management**

Although most patients with acute uncomplicated glomerulonephritis are cared for as outpatients, nursing care is important in every setting. In a hospital setting, carbohydrates are given liberally to provide energy and reduce the catabolism of protein (Morton, Fontaine, Hudak, et al., 2005). Intake and output are carefully measured and recorded. Fluids are given according to the patient's fluid losses and daily body weight. Insensible fluid loss through the lungs (300 mL) and skin (600 mL) is considered when estimating fluid loss (see Table 14-2). Diuresis begins about 1 week after the onset of symptoms with a decrease in edema and blood pressure. Proteinuria and microscopic hematuria may persist for many months, and some patients may develop chronic glomerulonephritis (Brenner, 2004). Other nursing interventions focus on patient education about the disease process, explanations of laboratory and other diagnostic tests, and preparation for safe and effective self-care at home.



## **Renal Failure**

Renal failure results when the kidneys cannot remove the body's metabolic wastes or perform their regulatory functions. The substances normally eliminated in the urine accumulate in the body fluids as a result of impaired renal excretion, leading to a disruption in endocrine and metabolic functions as well as fluid, electrolyte, and acid–base disturbances. Renal failure is a systemic disease and is a final common pathway of many different kidney and urinary tract diseases. Each year, the number of deaths from irreversible renal failure increases.

## **Acute Renal Failure**

### **Pathophysiology**

Acute renal failure (ARF) is a reversible clinical syndrome where there is a sudden and almost complete loss of kidney function (decreased GFR) over a period of hours to days with failure to excrete nitrogenous waste products and to maintain fluid and electrolyte homeostasis (Porth, 2005). Although ARF is often thought of as a problem seen only in hospitalized patients, it may occur in the outpatient setting as well. ARF manifests as an increase in serum creatinine and BUN. Urine volume may be normal, or changes may occur. Possible changes include oliguria (less than 400 mL/day), nonoliguria (greater than 400 mL/day), or anuria (less than 50 mL/day).

### **Categories of Acute Renal Failure**

The major categories of ARF are prerenal (hypoperfusion of kidney), intrarenal (actual damage to kidney tissue), and postrenal (obstruction to urine flow).

- Prerenal ARF, which occurs in 60% to 70% of cases, is the result of impaired blood flow that leads to hypoperfusion of the kidney and a decrease in the GFR. Common clinical situations are volume-depletion states (hemorrhage or gastrointestinal [GI] losses), impaired cardiac performance (myocardial infarction, heart failure, or cardiogenic shock), and vasodilation (sepsis or anaphylaxis).
- Intrarenal ARF is the result of actual parenchymal damage to the glomeruli or kidney tubules. Nephrotoxic agents, such as aminoglycosides and radiocontrast agents, account for 30% of cases of acute tubular necrosis (ATN), and ischemia due to decreased renal perfusion accounts for more than 50% of cases of ATN.

Characteristics of ATN are intratubular obstruction, tubular back leak (abnormal reabsorption of filtrate and decreased urine.

- Postrenal ARF is usually the result of an obstruction somewhere distal to the kidney. Pressure rises in the kidney tubules and eventually, the GFR decreases.

### **Clinical Manifestations**

Almost every system of the body is affected when there is failure of the normal renal regulatory mechanisms. The patient may appear critically ill and lethargic. The skin and mucous membranes are dry from dehydration. Central nervous system signs and symptoms include drowsiness, headache, muscle twitching, and seizures

### **Medical Management**

- The kidneys have a remarkable ability to recover from insult. The objectives of treatment of ARF are to restore normal chemical balance and prevent complications until repair of renal tissue and restoration of renal function can occur. Management includes maintaining fluid balance, avoiding fluid excesses, or possibly performing dialysis. The underlying cause is identified, treated, and eliminated when possible.

## **Acute Pyelonephritis**

### **Clinical Manifestations**

The patient with acute pyelonephritis is acutely ill with chills, fever, leukocytosis, bacteriuria and pyuria. Low back pain, flank pain, nausea and vomiting, headache, malaise, and painful urination are common findings. Physical examination reveals pain and tenderness in the area of the costovertebral angle. In addition, symptoms of lower urinary tract involvement, such as dysuria and frequency, are common.

### **Medical Management**

Patients with acute uncomplicated pyelonephritis are most often treated on an outpatient basis if they are not exhibiting dehydration, nausea or vomiting, or symptoms of sepsis. In addition, they must be responsible and reliable to ensure that all

medications will be taken as prescribed. For outpatients, a 2-week course of antibiotics is recommended because renal parenchymal disease is more difficult to eradicate than mucosal bladder infections. Commonly prescribed agents include TMP-SMZ, ciprofloxacin, gentamicin with or without ampicillin, or a third-generation cephalosporin. These medications must be used with great caution if the patient has renal or liver dysfunction.

### **Urolithiasis and Nephrolithiasis**

Urolithiasis and nephrolithiasis refer to stones (calculi) in the urinary tract and kidney, respectively. Urinary stones account for more than 320,000 hospital admissions each year. The occurrence of urinary stones occurs predominantly in the third to fifth decades of life and affects men more than women. About half of patients with a single renal stone have another episode within 5 years.

### **Clinical Manifestations**

Signs and symptoms of stones in the urinary system depend on the presence of obstruction, infection, and edema. When stones block the flow of urine, obstruction develops, producing an increase in hydrostatic pressure and distending the renal pelvis and proximal ureter. Infection (pyelonephritis and UTI with chills, fever, and dysuria) can be a contributing factor with struvite stones (Porth, 2005). Some stones cause few, if any, symptoms while slowly destroying the functional units (nephrons) of the kidney; others cause excruciating pain and discomfort.

### **Medical Management**

The goals of management are to eradicate the stone, determine the stone type, prevent nephron destruction, control infection, and relieve any obstruction that may be present. The immediate objective of treatment of renal or ureteral colic is to relieve the pain until its cause can be eliminated. Opioid analgesics are administered to prevent shock and syncope that may result from the excruciating pain. Nonsteroidal anti-inflammatory drugs (NSAIDs) are effective in treating renal stone pain because they provide specific pain relief.

## **Surgical Management**

Surgical removal was the major mode of therapy before the advent of lithotripsy. However, today, surgery is performed in only 1% to 2% of patients. Surgical intervention is indicated if the stone does not respond to other forms of treatment. It may also be performed to correct anatomic abnormalities within the kidney to improve urinary drainage. If the stone is in the kidney, the surgery performed may be a nephrolithotomy (incision into the kidney with removal of the stone) or a nephrectomy, if the kidney is nonfunctional secondary to infection or hydronephrosis. Stones in the kidney pelvis are removed by a pyelolithotomy, those in the ureter by ureterolithotomy, and those in the bladder by cystotomy.

## **Acute gastrointestinal disorders**

### **Appendicitis**

The appendix is a small, finger-like appendage about 10 cm (4 in) long that is attached to the cecum just below the ileocecal valve. The appendix fills with food and empties regularly into the cecum. Because it empties inefficiently and its lumen is small, the appendix is prone to obstruction and is particularly vulnerable to infection (ie, appendicitis).

Appendicitis, the most common cause of acute abdomen in the United States, is the most common reason for emergency abdominal surgery. Although it can occur at any age, it more commonly occurs between the ages of 10 and 30 years (NIH, 2005).

### **Pathophysiology**

The appendix becomes inflamed and edematous as a result of becoming kinked or occluded by a fecalith (ie, hardened mass of stool), tumor, or foreign body. The inflammatory process increases intraluminal pressure, initiating a progressively severe, generalized or periumbilical pain that becomes localized to the right lower quadrant of the abdomen within a few hours. Eventually, the inflamed appendix fills with pus.

### **Clinical Manifestations**

Vague epigastric or periumbilical pain progresses to right lower quadrant pain and is usually accompanied by a low-grade fever and nausea and sometimes by vomiting.

Loss of appetite is common. In up to 50% of presenting cases, local tenderness is elicited at McBurney's point when pressure is applied. Rebound tenderness (ie, production or intensification of pain when pressure is released) may be present.

### **Medical Management**

Immediate surgery is typically indicated if appendicitis is diagnosed. To correct or prevent fluid and electrolyte imbalance, dehydration, and sepsis, antibiotics and IV fluids are administered until surgery is performed. Appendectomy (ie, surgical removal of the appendix) is performed as soon as possible to decrease the risk of perforation. It may be performed using general or spinal anesthesia with a low abdominal incision (laparotomy) or by laparoscopy. Both laparotomy and laparoscopy are safe and effective in the treatment of appendicitis with perforation. However, recovery after laparoscopic surgery is generally quicker.

When perforation of the appendix occurs, an abscess may form. If this occurs, the patient may be initially treated with antibiotics, and the surgeon may place a drain in the abscess. After the abscess is drained and there is no further evidence of infection, an appendectomy is then typically performed.

### **Nursing Management**

Goals include relieving pain, preventing fluid volume deficit, reducing anxiety, eliminating infection due to the potential or actual disruption of the GI tract, maintaining skin integrity, and attaining optimal nutrition.

The nurse prepares the patient for surgery, which includes an IV infusion to replace fluid loss and promote adequate renal function and antibiotic therapy to prevent infection. If there is evidence or likelihood of paralytic ileus, a nasogastric tube is inserted. An enema is not administered because it can lead to perforation.

After surgery, the nurse places the patient in a high-Fowler position. This position reduces the tension on the incision and abdominal organs, helping to reduce pain. An opioid, usually morphine sulfate, is prescribed to relieve pain. When tolerated, oral fluids are administered. Any patient who was dehydrated before surgery receives IV fluids. Food is provided as desired and tolerated on the day of surgery when normal bowel sounds are present.

## **Intestinal Obstruction**

Intestinal obstruction exists when blockage prevents the normal flow of intestinal contents through the intestinal tract. Two types of processes can impede this flow:

- Mechanical obstruction: An intraluminal obstruction or a mural obstruction from pressure on the intestinal wall occurs. Examples are intussusception, polypoid tumors and neoplasms, stenosis, strictures, adhesions, hernias, and abscesses.
- Functional obstruction: The intestinal musculature cannot propel the contents along the bowel. Examples are amyloidosis, muscular dystrophy, endocrine disorders such as diabetes mellitus, or neurologic disorders such as Parkinson's disease. The blockage also can be temporary and the result of the manipulation of the bowel during surgery.

### **Small Bowel Obstruction**

#### **Pathophysiology**

- Intestinal contents, fluid, and gas accumulate above the intestinal obstruction. The abdominal distention and retention of fluid reduce the absorption of fluids and stimulate more gastric secretion. With increasing distention, pressure within the intestinal lumen increases, causing a decrease in venous and arteriolar capillary pressure. This causes edema, congestion, necrosis, and eventual rupture or perforation of the intestinal wall, with resultant peritonitis.
- Reflux vomiting may be caused by abdominal distention. Vomiting results in loss of hydrogen ions and potassium from the stomach, leading to reduction of chlorides and potassium in the blood and to metabolic alkalosis. Dehydration and acidosis develop from loss of water and sodium. With acute fluid losses, hypovolemic shock may occur.

#### **Clinical Manifestations**

The initial symptom is usually crampy pain that is wavelike and colicky. The patient may pass blood and mucus but no fecal matter and no flatus. Vomiting occurs. If the obstruction is complete, the peristaltic waves initially become extremely vigorous and eventually assume a reverse direction, with the intestinal contents propelled toward the

mouth instead of toward the rectum. If the obstruction is in the ileum, fecal vomiting takes place. First, the patient vomits the stomach contents, then the bile-stained contents of the duodenum and the jejunum, and finally, with each paroxysm of pain, the darker, fecal-like contents of the ileum. The signs of dehydration become evident: intense thirst, drowsiness, generalized malaise, aching, and a parched tongue and mucous membranes. The abdomen becomes distended. The lower the obstruction is in the GI tract, the more marked the abdominal distention. If the obstruction continues uncorrected, hypovolemic shock occurs from dehydration and loss of plasma volume.

### **Medical Management**

Decompression of the bowel through a nasogastric tube is successful in most cases. When the bowel is completely obstructed, the possibility of strangulation warrants surgical intervention. Before surgery, IV therapy is necessary to replace the depleted water, sodium, chloride, and potassium.

The surgical treatment of intestinal obstruction depends largely on the cause of the obstruction. In the most common causes of obstruction, such as hernia and adhesions, the surgical procedure involves repairing the hernia or dividing the adhesion to which the intestine is attached. In some instances, the portion of affected bowel may be removed and an anastomosis performed. The complexity of the surgical procedure for intestinal obstruction depends on the duration of the obstruction and the condition of the intestine.

### **Nursing Management**

Nursing management of the nonsurgical patient with a small bowel obstruction includes maintaining the function of the nasogastric tube, assessing and measuring the nasogastric output, assessing for fluid and electrolyte imbalance, monitoring nutritional status, and assessing improvement (eg, return of normal bowel sounds, decreased abdominal distention, subjective improvement in abdominal pain and tenderness, passage of flatus or stool). The nurse reports discrepancies in intake and output, worsening of pain or abdominal distention, and increased nasogastric output. If the patient's condition does not improve, the nurse prepares him or her for surgery. The exact nature of the surgery depends on the cause of the obstruction.

## **Large Bowel Obstruction**

### **Pathophysiology**

As in small bowel obstruction, large bowel obstruction results in an accumulation of intestinal contents, fluid, and gas proximal to the obstruction. Obstruction in the large bowel can lead to severe distention and perforation unless some gas and fluid can flow back through the ileal valve. Large bowel obstruction, even if complete, may be undramatic if the blood supply to the colon is not disturbed. However, if the blood supply is cut off, intestinal strangulation and necrosis (ie, tissue death) occur; this condition is life threatening. In the large intestine, dehydration occurs more slowly than in the small intestine because the colon can absorb its fluid contents and can distend to a size considerably beyond its normal full capacity.

Adenocarcinoid tumors account for the majority of large bowel obstructions. Most tumors occur beyond the splenic flexure, making them accessible with a flexible sigmoidoscope.

### **Clinical Manifestations**

Large bowel obstruction differs clinically from small bowel obstruction in that the symptoms develop and progress relatively slowly. In patients with obstruction in the sigmoid colon or the rectum, constipation may be the only symptom for months. The shape of the stool is altered as it passes the obstruction that is gradually increasing in size. Blood in the stool may result in iron deficiency anemia. The patient may experience weakness, weight loss, and anorexia. Eventually, the abdomen becomes markedly distended, loops of large bowel become visibly outlined through the abdominal wall, and the patient has crampy lower abdominal pain. Finally, fecal vomiting develops. Symptoms of shock may occur.

### **Medical Management**

Restoration of intravascular volume, correction of electrolyte abnormalities, and nasogastric aspiration and decompression are instituted immediately. A colonoscopy may be performed to untwist and decompress the bowel. A cecostomy, in which a surgical opening is made into the cecum, may be performed in patients who are poor surgical risks and urgently need relief from the obstruction. The procedure provides an



outlet for releasing gas and a small amount of drainage. A rectal tube may be used to decompress an area that is lower in the bowel. However, the usual treatment is surgical resection to remove the obstructing lesion. A temporary or permanent colostomy may be necessary. An ileoanal anastomosis may be performed if it is necessary to remove the entire large bowel.

### **Nursing Management**

The nurse's role is to monitor the patient for symptoms that indicate that the intestinal obstruction is worsening and to provide emotional support and comfort. The nurse administers IV fluids and electrolytes as prescribed. If the patient's condition does not respond to nonsurgical treatment, the nurse prepares the patient for surgery. This preparation includes preoperative teaching as the patient's condition indicates. After surgery, general abdominal wound care and routine postoperative nursing care are provided.

### **Acute neurological disorder**

#### **Headache**

Headache, or cephalgia, is one of the most common of all human physical complaints. Headache is a symptom rather than a disease entity; it may indicate organic disease (neurologic or other disease), a stress response, vasodilation (migraine), skeletal muscle tension (tension headache), or a combination of factors. A primary headache is one for which no organic cause can be identified. These types of headache include migraine, tension-type, and cluster headaches (Lipton, Bigal, Steiner, et al., 2004).

Migraine is a symptom complex characterized by periodic and recurrent attacks of severe headache lasting from 4 to 72 hours in adults. The cause of migraine has not been clearly demonstrated, but it is primarily a vascular disturbance that occurs more commonly in women and has a strong familial tendency. The typical time of onset is at puberty, and the incidence is highest in adults 20 to 35 years of age. There are six subtypes of migraine headache, including migraine with and without aura. Most patients have migraine without an aura.

Tension-type headaches tend to be chronic and less severe and are probably the most common type of headache. Cluster headaches are a severe form of vascular headache.

They are seen five times more frequently in men than in women. Types of headaches not subsumed under these categories fall into the Other Primary Headache group and include headaches triggered by cough, exertion, and sexual activity (Lipton et al., 2004).

## **Clinical Manifestations**

### **Migraine**

The migraine with aura can be divided into four phases: prodrome, aura, the headache, and recovery (headache termination and postdrome).

#### **Prodrome**

The prodrome phase is experienced by 60% of patients, with symptoms that occur hours to days before a migraine headache. Symptoms may include depression, irritability, feeling cold, food cravings, anorexia, change in activity level, increased urination, diarrhea, or constipation. Patients usually experience the same prodrome with each migraine headache.

#### **Aura Phase**

Aura occurs in up to 31% of patients who have migraines (Goadsby et al., 2002). The aura usually lasts less than 1 hour and may provide enough time for the patient to take the prescribed medication to avert a full-blown attack (see later discussion). This period is characterized by focal neurologic symptoms. Visual disturbances (ie, light flashes and bright spots) are common and may be hemianopic (affecting only half of the visual field). Other symptoms that may follow include numbness and tingling of the lips, face, or hands; mild confusion; slight weakness of an extremity; drowsiness; and dizziness. This period of aura corresponds to the painless vasoconstriction that is the initial physiologic change characteristic of classic migraine. Cerebral blood flow studies performed during migraine headaches demonstrate that during all phases of the attack, cerebral blood flow is reduced throughout the brain, with subsequent loss of autoregulation and impaired carbon dioxide responsiveness.

## **Headache Phase**

As vasodilation and a decline in serotonin levels occur, a throbbing headache (unilateral in 60% of patients) intensifies over several hours. This headache is severe and incapacitating and is often associated with photophobia, nausea, and vomiting. Its duration varies, ranging from 4 to 72 hours (Goadsby et al., 2002).

## **Recovery Phase**

In the recovery phase (termination and postdrome), the pain gradually subsides. Muscle contraction in the neck and scalp is common, with associated muscle ache and localized tenderness, exhaustion, and mood changes. Any physical exertion exacerbates the headache pain. During this postheadache phase, patients may sleep for extended periods.

## **Nursing Management**

When migraine or the other types of headaches have been diagnosed, the goals of nursing management is to enhance pain relief. It is reasonable to try nonpharmacologic interventions first, but the use of pharmacologic agents should not be delayed. The goal is to treat the acute event of the headache and to prevent recurrent episodes. Prevention involves patient education regarding precipitating factors, possible lifestyle or habit changes that may be helpful, and pharmacologic measures.

## **Altered Level of Consciousness**

An altered level of consciousness (LOC) is apparent in the patient who is not oriented, does not follow commands, or needs persistent stimuli to achieve a state of alertness. LOC is gauged on a continuum with a normal state of alertness and full cognition (consciousness) on one end and coma on the other end. Coma is a clinical state of unarousable unresponsiveness in which there are no purposeful responses to internal or external stimuli, although nonpurposeful responses to painful stimuli and brain stem reflexes may be present (Hickey, 2003). The duration of coma is usually limited to 2 to 4 weeks.

## **Clinical Manifestations**

Alterations in LOC occur along a continuum, and the clinical manifestations depend on where the patient is on this continuum. As the patient's state of alertness and consciousness decreases, changes will ultimately occur in the pupillary response, eye opening response, verbal response, and motor response. However, initial alterations in LOC may be reflected by subtle behavioral changes, such as restlessness or increased anxiety. The pupils, normally round and quickly reactive to light, become sluggish (response is slower); as the patient becomes comatose, the pupils become fixed (no response to light). The patient in a coma does not open the eyes, respond verbally, or move the extremities in response to a request to do so.

## **Medical Management**

The first priority of treatment for the patient with altered LOC is to obtain and maintain a patent airway. The patient may be orally or nasally intubated, or a tracheostomy may be performed. Until the ability of the patient to breathe on his or her own is determined, a mechanical ventilator is used to maintain adequate oxygenation and ventilation. The circulatory status (blood pressure, heart rate) is monitored to ensure adequate perfusion to the body and brain.

## **Management of Patients With Cerebrovascular Disorders**

“Cerebrovascular disorders” is an umbrella term that refers to a functional abnormality of the central nervous system (CNS) that occurs when the normal blood supply to the brain is disrupted. Stroke is the primary cerebrovascular disorder in the United States and in the world; it is the third leading cause of death behind heart disease and cancer

Strokes can be divided into two major categories: ischemic (85%) in which vascular occlusion and significant hypoperfusion occur, and hemorrhagic (15%).

## **Ischemic Stroke**

An ischemic stroke, cerebrovascular accident (CVA), or “brain attack” is a sudden loss of function resulting from disruption of the blood supply to a part of the brain. The term

“brain attack” is being used to suggest to health care practitioners and the public that a stroke is an urgent health care issue similar to a heart attack.

### **Clinical Manifestations**

An ischemic stroke can cause a wide variety of neurologic deficits, depending on the location of the lesion (which vessels are obstructed), the size of the area of inadequate perfusion, and the amount of collateral (secondary or accessory) blood flow. The patient may present with any of the following signs or symptoms:

- Numbness or weakness of the face, arm, or leg, especially on one side of the body
- Confusion or change in mental status
- Trouble speaking or understanding speech
- Visual disturbances
- Difficulty walking, dizziness, or loss of balance or coordination
- Sudden severe headache

### **Managing Potential Complications**

Adequate cerebral blood flow is essential for cerebral oxygenation. If cerebral blood flow is inadequate, the amount of oxygen supplied to the brain will decrease, and tissue ischemia will result. Adequate oxygenation begins with pulmonary care, maintenance of a patent airway, and administration of supplemental oxygen as needed. The importance of adequate gas exchange in these patients cannot be overemphasized. Many are at risk for aspiration pneumonia, which can interfere with gas exchange.

### **Nursing Management**

The primary complications of carotid endarterectomy are stroke, cranial nerve injuries, infection or hematoma at the incision, and carotid artery disruption. It is important to maintain adequate blood pressure levels in the immediate postoperative period. Hypotension is avoided to prevent cerebral ischemia and thrombosis. Uncontrolled hypertension may precipitate cerebral hemorrhage, edema, hemorrhage at the surgical incision, or disruption of the arterial reconstruction. Sodium nitroprusside is commonly

used to reduce the blood pressure to previous levels. Close cardiac monitoring is necessary, because these patients have a high incidence of coronary artery disease.

### **Hemorrhagic Stroke**

Hemorrhagic strokes account for 15% to 20% of cerebrovascular disorders and are primarily caused by intracranial or subarachnoid hemorrhage. Hemorrhagic strokes are caused by bleeding into the brain tissue, the ventricles, or the subarachnoid space. Primary intracerebral hemorrhage from a spontaneous rupture of small vessels accounts for approximately 80% of hemorrhagic strokes and is caused chiefly by uncontrolled hypertension. Subarachnoid hemorrhage results from a ruptured intracranial aneurysm (a weakening in the arterial wall) in about half the cases (Bader & Littlejohns, 2004).

### **Clinical Manifestations**

The patient with a hemorrhagic stroke can present with a wide variety of neurologic deficits, similar to the patient with ischemic stroke. The conscious patient most commonly reports a severe headache.

### **Medical Management**

The goals of medical treatment for hemorrhagic stroke are to allow the brain to recover from the initial insult (bleeding), to prevent or minimize the risk for rebleeding, and to prevent or treat complications.

Management is primarily supportive and consists of bed rest with sedation to prevent agitation and stress, management of vasospasm, and surgical or medical treatment to prevent rebleeding. Analgesics (codeine, acetaminophen) may be prescribed for head and neck pain. The patient is fitted with sequential compression devices to prevent deep vein thrombosis (DVT) (Farray, Carman & Fernandez, 2004).

### **Infectious Neurologic Disorders**

#### **Meningitis**

Meningitis is an inflammation of the pia mater, the arachnoid, and the cerebrospinal fluid (CSF)-filled subarachnoid space (Porth, 2005). Meningitis is classified as septic or

aseptic. Septic meningitis is caused by bacteria. In aseptic meningitis, the cause is viral or secondary to lymphoma, leukemia, or human immunodeficiency virus (HIV).

### **Clinical Manifestations**

Headache and fever are frequently the initial symptoms. Fever tends to remain high throughout the course of the illness. The headache is usually either steady or throbbing and very severe as a result of meningeal irritation (Bickley & Szilagyi, 2003). Meningeal irritation results in a number of other well-recognized signs common to all types of meningitis:

- Nuchal rigidity (stiff neck): This is an early sign (Diepenbrock, 2004). Any attempts at flexion of the head are difficult because of spasms in the muscles of the neck. Forceful flexion causes severe pain.
- Positive Kernig's sign: When the patient is lying with the thigh flexed on the abdomen, the leg cannot be completely extended.
- Positive Brudzinski's sign: When the patient's neck is flexed (after ruling out cervical trauma or injury), flexion of the knees and hips is produced; when the lower extremity of one side is passively flexed, a similar movement is seen in the opposite extremity (see Fig. 64-1). Brudzinski's sign is a more sensitive indicator of meningeal irritation than Kernig's sign (Pullen, 2004).
- Photophobia (extreme sensitivity to light): This finding is common, although the cause is unclear.

### **Medical Management**

- Successful outcomes depend on the early administration of an antibiotic that crosses the blood–brain barrier into the subarachnoid space in sufficient concentration to halt the multiplication of bacteria. Penicillin antibiotics (eg, ampicillin, piperacillin) or one of the cephalosporins (eg, ceftriaxone sodium, cefotaxime sodium) may be used. Vancomycin hydrochloride alone or in combination with rifampin may be used if resistant strains of bacteria are identified. High doses of the appropriate antibiotic are administered IV.

## Nursing Management

- The patient with meningitis is critically ill; therefore, many of the nursing interventions are collaborative with the physician, respiratory therapist, and other members of the health care team. The patient's safety and well-being depend on sound nursing judgment.
- Neurologic status and vital signs are continually assessed. Pulse oximetry and arterial blood gas values are used to quickly identify the need for respiratory support if increasing ICP compromises the brain stem. Insertion of a cuffed endotracheal tube (or tracheotomy) and mechanical ventilation may be necessary to maintain adequate tissue oxygenation.
- Arterial blood pressures are monitored to assess for incipient shock, which precedes cardiac or respiratory failure. Rapid IV fluid replacement may be prescribed, but care is taken to prevent fluid overload. Fever also increases the workload of the heart and cerebral metabolism. ICP will increase in response to increased cerebral metabolic demands. Therefore, measures are taken to reduce body temperature as quickly as possible.

**Directions:** Answer all the questions listed below. Use the Answer sheet provided in the next page:

<b>Self-Check- 1</b>	Written Test
--------------------------	--------------

### I. Choose the best answer (each 1point)

- 1.The primary presenting features of acute glomerulonephritis are:  
A. hematuria    B.edema    C. azotemia    D.All
2. is restricted when renal insufficiency and nitrogen retention develop.  
A.Dietary protein    B.Fat    C.Carbohydrate    D.Vitamins
3. results when the kidneys cannot remove the body's metabolic wastes or perform their regulatory functions.  
A.Acute Glomerulonephritis    B. Renal failure    C.Uretheritis    D.Urolithiasis
4. The migraine with aura can be divided into phases:  
A.Four    B.Three    C.Two    D.Five



5. refer to stones (calculi) in the kidney.

A.Urolithiasis      B. nephrolithiasis      C.Uretheritis      D.None

6. After surgery of Appendicitis, the nurse places the patient in \_\_\_\_\_ position.

A.Dorsal recumbent      C.Lateral      C. high-Fowler      D.All

7. is sign of meningitis:

A. Nuchal rigidity      B. Positive Kernig's sign      C. Positive Brudzinski's sign      D.All

## II.Short Answer

8.List the major categories of ARF

a\_\_\_\_\_ b\_\_\_\_\_ c\_\_\_\_\_

**Note: Satisfactory rating - 5 and 10 points      Unsatisfactory - below 5 and 10 points**

You can ask you teacher for the copy of the correct answers.

Answer sheet

Name\_\_\_\_\_ Date\_\_\_\_\_

Score\_\_\_\_\_

Rating\_\_\_\_\_

## Information Sheet 2: Physical and psychological impact of acute health problem

### 2.1 Introduction

Acute and chronic physical illnesses are stressful for children and their families. The stresses of physical illness manifest as psychological reactions involving somatic symptoms (e.g., pain, dizziness, or fatigue), behavioral changes (e.g., acting out, non adherence, or lifestyle alterations), emotional states (e.g., fear, sadness, or anxiety), and developmental challenges (e.g., incorporating medical information at different developmental stages). This chapter provides an overview of psychological reactions to physical illness, a differential diagnosis approach to these reactions, a review of selected childhood physical illnesses, and a summary of mental health interventions in children with physical illnesses.

When serious illness or disability strikes a person, the family as a whole is affected by the disease process and by the entire health care experience. Patients and families have different needs for education and counseling. Because each person in a family plays a specific role that is part of the family's everyday functioning, the illness of one family member disrupts the whole family. When a family member becomes ill, other family members must alter their lifestyle and take on some of the role functions of the ill person, which in turn affects their own normal role functioning. If the person who does most of the family's cooking has surgery and can't shop or prepare meals for several weeks, other family members must take on this responsibility in addition to the tasks they already do. When a working parent is up most of the night trying to console a child with an ear infection, the parent not only loses sleep, but must either arrange for emergent child care or take a day off from work. If a man who is the primary income producer in a family has a heart attack, his wife may have to return to work, increase working hours if she is already employed, or become the family's breadwinner. Middle aged adults whose children have just left home may need to alter their plans and goals to accommodate care needs for aging parents.

Illness may cause additional strain as the result of economic problems and interruptions in career development. If the patient is a young child, there may be additional strain to the family if there are siblings whose needs must also be met. Illness in the middle stage of family life, when adolescents are trying to break away from family ties and parents are going through their own mid-life transitions, may put further strain on what is already a time of potential family turmoil. Illness in later age may have an impact not only on grown children but also on the older couple who had anticipated a time of enjoyment together and are less able to care for each other because of their own physical limitations associated with aging.

The extent of family disruption depends on the seriousness of the illness, the family's level of functioning before the illness, socioeconomic considerations, and the extent to which other family members can absorb the role of the person who is ill. In some instances, a major illness brings a family closer together; in others, even a minor illness causes significant strain. It is important to identify what the illness means, not only to the individual but also to the family. Asking them what they consider major problems and how they plan to handle specific situations can help you assess the meaning of the patient's illness to the family.

To achieve effective patient teaching outcomes, you should make the family part of your teaching plan. For example, if your patient's wife does all the cooking in the home, it is vital to include her in diet teaching. Involving family members may be an important future source of support for the patient as he or she works at behavioral change. Obviously it will be difficult for a husband to be supportive of his wife's blood pressure treatment program if he does not understand the reasons for the recommendations and the consequences of not carrying them out.

Long-term illness, even in the most stable and supportive families, brings changes in family relationships. Illness produces disequilibrium in the family structure until adjustments can occur. If the nurse does not recognize the change, what it might mean to the patient and family, and how it might affect the patient's willingness and ability to carry out health care recommendations, the goals of the teaching process will be diminished. When teaching the patient and family, it is important to identify patterns of

relationships and to be alert to attitudes of family members. You may be able to identify resources within the group and help family members mobilize their resources to help the patient. It's also important to be alert to some of the factors in family members that act as a barrier to education. Illness in a family member tends to raise the anxiety of all those close to the patient. Anxiety may be misinterpreted by the health professional as lack of interest or as reluctance to provide the patient with help and support. The more you are aware of these reactions and help family members deal with their feelings, the better able you will be to teach family members about the patient's condition and treatment and to mobilize their support.

## **2.2 Problem solving approach to assess the impact of Acute and chronic health problems**

Problem-solving skill deficits are not only limited to persons suffering from psychological disorders, the results of empirical investigations show that individuals suffering from a wide variety of medical problems also experience emotional and behavioral problems. Persons with spinal cord injuries are known to be at risk for preventable complications. For this reason, the prevention of secondary complications such as fatigue, immobility, pain, social isolation, anxiety, depression, and weight problems are the major issues for the care of this patient group (Hughes et al., 2003). That is why the problem-solving skill levels of patients with spinal cord injuries may have an effect not only on their health but also on certain behaviors that affect their health.

Providing care to individuals with acute or chronic health problems is one of the most stressful jobs. Such care is usually provided within family by family members. The problem-solving skill levels of the families with respect to health care problems have an effect on family members' mental health.

Being diagnosed with a fatal disease such as cancer is a highly stressful situation for both the individual and their relatives. It is very difficult for the individual and the family members to cope with such a situation. The emotional, mental, and behavioral resources of the individuals involved must be adequate to deal with it.

Diabetes is a chronic disease and requires good behavioral management skills. Persons with diabetes should be able to follow the procedures prescribed by their physicians. Adhering to medical and behavioral procedures requires good problem-solving skills.

Psychoeducational interventions that concomitantly focus on providing information, teaching problem-solving skills, and utilizing psychological support and counseling approaches to decrease caregiver distress have lent tremendous support to caregivers.

Psychoeducational interventions often involve multiple components that address areas such as symptom management, monitoring of problems, coordination of resources, health care communication, cognitive reframing, and emotional support.

Providers can assist caregivers by encouraging them to challenge negative thoughts, engage in positive activities, and develop problem-solving abilities that focus on time management, emotional control, and incorporating these skills into day-to-day care demands.

## **2.3 Maintaining Confidentiality**

Confidentiality in healthcare ethics underlines the importance of respecting the privacy of information revealed by a patient to his or her health care provider, as well the limitation of healthcare providers to disclose information to a third party. The healthcare provider must obtain permission from the patient to make such a disclosure.

The information given confidentially, if disclosed to the third party without the consent of the patient, may harm the patient, violating the principle of non-maleficence. Keeping confidentiality promotes autonomy and benefit of the patient.

The high value that is placed on confidentiality has three sources:

- ✓ *Autonomy*: personal information should be confidential, and be revealed after getting a consent from the person
- ✓ *Respect for others*: human beings deserve respect; one important way of showing respect is by preserving their privacy.
- ✓ *Trust*: confidentiality promotes trust between patients and health workers.

### **The right of patient to confidentiality**

- All identifiable information about a patient's health status, medical condition, diagnosis, prognosis and treatment and all other information of a personal kind, must be kept confidential, even after death. Exceptionally, family may have a right of access to information that would inform them of their health risks.
- Confidential information can only be disclosed if the patient gives explicit consent or if expressly provided for in the law. Information can be disclosed to other

healthcare providers only on a strictly "need to know" basis unless the patient has given explicit consent.

- All identifiable patient data must be protected. The protection of the data must be appropriate to the manner of its storage. Human substances from which identifiable data can be derived must also be protected.

<b>L #24</b>	<b>LO#2 Contribute to planning care for the client with acute health problems</b>
--------------	---

### Instruction sheet

This learning guide is developed to provide you the necessary information regarding the following content coverage and topics:

- Gather and record admission data
- Gathering and recording ongoing data in the client's care plan
- Exchange of information on the activities of daily living in discharge planning
- Discussing clients care with relevant persons
- Explaining the rationale for planned care

This guide will also assist you to attain the learning outcomes stated in the cover page. Specifically, upon completion of this learning guide, you will be able to:

- Gather and record admission data
- Gather and record ongoing data in the client's care plan
- Exchange of information on the activities of daily living in discharge planning
- Discuss clients care with relevant persons
- Explain the rationale for planned care

### Learning Instructions:



- 1** Read the specific objectives of this Learning Guide.
- 2** Follow the instructions described below.
- 3** Read the information written in the “Information Sheets”. Try to understand what are being discussed. Ask your trainer for assistance if you have hard time understanding them.
- 4** Accomplish the “Self-checks” which are placed following all information sheets.
- 5** Ask from your trainer the key to correction (key answers) or you can request your trainer to correct your work. (You are to get the key answer only after you finished answering the Self-checks).
- 6** If you earned a satisfactory evaluation proceed to “Operation sheets
- 7** Perform “the Learning activity performance test” which is placed following “Operation sheets” ,
- 8** If your performance is satisfactory proceed to the next learning guide,
- 9** If your performance is unsatisfactory, see your trainer for further instructions or go back to “Operation sheets”.

## **Information Sheet 1- Contribute to planning care for the client with acute health problems**

### **1.1 Gathering and recording admission data**

Definition: Admission is the entry of a patient in to a hospital ward for therapeutic or diagnostic purpose. Hospitalized individuals have many needs and concerns that must be identified then prioritized and for which action must be taken.

#### **Purpose**

- To help a new patient to adjust to hospital environment and routines.
- To provide immediate care safety and comfort.
- To observe sign and symptoms, and general conditions of the patient.
- To enable the patient to use facilities, resource & personal of the hospital.
- To alleviate fear, worry & loneliness about the hospital.

#### **Types of admission**

- A. Emergency admission: means of the patients are admitted in acute conditions requiring immediate treatment, e.g. patient with accidents poisoning, burns and heart attack
- B. Routine admission: the patients are admitted for investigation and medical or surgical treatment is given accordingly, e.g. patient with hypertension, diabetics and bronchitis

#### **General instruction**

- Nurse should make every effort to be friendly and courteous with the patient
- Make proper observations or the patient's condition. Report
- Orient the patient and his relatives to hospital and ward policies
- Observe policies in dealing with medico-legal cases

- Deal with the patients belonging very carefully communicable diseases
- Isolate the patient if suffering from communicable disease
- The nurse should be recognized the various needs of the patient and meet them without delay
- The needs to understand the fears and anxiety of patient and help to overcome
- The nurse should find out the likes and dislikes of the patient and include the patient in his plan of care
- The nurse should be address the patient by their name and proper title
- Patient's valuables and clothes should handover to the relatives with proper recording

<b>Self-Check-1</b>	Written Test
---------------------	--------------

**Directions:** Answer all the questions listed below. Use the Answer sheet provided in the next page:

I. Short answer (each 2 point)

- 1.List the purposes of patient admission
- 2.List the types of admission

*Note:* Satisfactory rating - 7 and 14 points      Unsatisfactory - below 7 points

You can ask you teacher for the copy of the correct answers.

Answer sheet

Name\_\_\_\_\_Date\_\_\_\_\_

Score_____
Rating_____

## **Information Sheet 2- Exchange of information on the activities of daily living in discharge planning**

### **2.1 Exchange of information on the activities of daily living in discharge planning**

- Discharge planning is usually defined as a process to co-ordinate the patient's continued care after discharge with the patient and/or relatives and other caregivers.
- Discharge planning is a dynamic process that involves the patient, his/her family and the caregivers in a dynamic, interactive communication and collaboration regarding a range of specific skills. The process begins with an assessment of the patient's requirements of continued care/support regarding medical, psychological, economic, and social needs, including the patient's total well-being. The process results in agreed goals and requirements for continued care, support, and rehabilitation.
- Patients' participation in the care may be limited by attitudes prevailing in health care.
- People working in the health care professions have to change their attitudes from seeing the patient as an object needing help, to seeing a person who takes an active part in his/her care.
- To create a partnership between the patient and the professionals, there must be an interpersonal relationship between them.
- The professionals have to understand the patients' experiences of the situation by listening to the patients and relatives.

## **Information Sheet 3- Discussing clients care with relevant persons**

### **3.1 Discussing clients care with relevant persons**

- In today's health care system, delivery processes involve numerous interfaces and patient handoffs among multiple health care practitioners with varying levels of educational and occupational training.
- Effective clinical practice thus involves many instances where critical information must be accurately communicated. Team collaboration is essential. When health care professionals are not communicating effectively, patient safety is at risk for several reasons: lack of critical information, misinterpretation of information, unclear orders over the telephone, and overlooked changes in status.
- Lack of communication creates situations where medical errors can occur. These errors have the potential to cause severe injury or unexpected patient death. Medical errors, especially those caused by a failure to communicate, are a pervasive problem in today's health care organizations.
- Collaboration in health care is defined as health care professionals assuming complementary roles and cooperatively working together, sharing responsibility for problem-solving and making decisions to formulate and carry out plans for patient care.
- Collaboration between physicians, nurses, and other health care professionals increases team members' awareness of each others' type of knowledge and skills, leading to continued improvement in decision making.
- Effective teams are characterized by trust, respect, and collaboration.
- The patient finds that communication is easier with the cohesive team, rather than with numerous professionals who do not know what others are doing to manage the patient.
- Effective communication among staff encourages effective teamwork and promotes continuity and clarity within the patient care team

## Information Sheet 4- Discussing clients care with relevant persons

### 4.1 Explaining the rationale for planned care

Patient-centred care is about treating a person receiving healthcare with dignity and respect and involving them in all decisions about their health. This type of care is also called 'person-centred care'. It is an approach that is linked to a person's healthcare rights.

When healthcare professionals and services give patient-centred care, it puts the patient at the 'centre' of healthcare by:

- treating with dignity, respect and compassion
- communicating and coordinating care between appointments and different services over time
- or sharing care between a community health service and a hospital tailoring the care to suit patient needs and what you want to achieve
- supporting the patients to understand and learn about their health
- helping the patient find ways to get better, look after themselves and stay independent
- involving the patient in their healthcare decisions at all times.

Patient-centred care is more than just how the healthcare professional treats their patients. It is also about how healthcare services and governments create and support policies to put healthcare users, not healthcare organizations, at the centre of care. When the care is patient-centred, the healthcare professional clearly explains the treatment options and respects their decisions. They will acknowledge the patient for who they are and will not discriminate based on their background, beliefs or preferences.

The healthcare professional should give all the information the patient need to make informed decisions. The patient should be given time and opportunities to ask questions, and talk to their carers, family and friends before making decisions. In situations where many treatments are needed at the same time, being actively

involved in their care will help you and your healthcare team to plan and prioritise your treatments. This helps everyone know and understand what is happening and why.

The patient also has the right to refuse any treatment that they are not comfortable with, except when they are not able to give your consent. If they lose the capacity to make decisions, they have the right to appoint someone to make medical decisions for them.

You have the right to be treated with respect and dignity. This includes respect for your privacy and the confidentiality of your health information.

### **Respect in a healthcare setting**

You have the right to be treated without discrimination based on your age, gender, gender identity, sexual orientation, disability, employment status, cultural background or religious beliefs. Healthcare should be delivered in a way that respects all your beliefs, particularly those related to treatment options, death, dietary needs and the gender of the person treating you.

Respect in a healthcare setting also includes healthcare professionals and services trying to arrange your appointment times to fit in with your needs and lifestyle.

### **Good communication with patient-centered care**

High-quality healthcare is based on open and effective two-way communication between you and your healthcare professional. This means understanding what your healthcare professional says and if you prefer a language other than English, it may include using a professional interpreter.

Your healthcare professional should explain information about your care and condition, including treatment options, prognosis, potential side effects and costs. You should be able to ask questions.

Understanding more about your treatment will help you make informed decisions about your care.

## Information sheet 5 -Clients discharge procedure

### 5.1 Clients discharge procedure

- Patient discharge planning is systematic process for preparing the patient to leave the hospital & for continuity of care at home.

#### ***Purpose***

- To continue self care at home
- To adjust the patients setting out of the hospital
- To ensure adequate home health care support
- To minimize the patient's anxiety at discharge

#### **Indications for discharge**

- Progress in the patient's condition (cured)
- No change in the patient's condition (Referral)
- Against medical advice
- Death

#### **Procedure**

- Check for the doctor's written order that pt. to be discharged.
- Inform patient and relative about discharge
- Document relevant discharge information
- Make sure all the fees are included
- Send admission card to registration office
- Plan for continuing care of the patient
  - ✓ Give information for a person involved in the patient care.
  - ✓ Contact family or significant others, if needed.
  - ✓ Facilitate transportation with responsible unit
- Assist patient to dress up
- Teaching the patient about
  - ✓ What to expect about disease outcome



- ✓ Medications (Treatments)
- ✓ Activity
- ✓ Diet
- ✓ Need for Follow up and others as needed
- Do final assessment of physical and emotional status of the patient and the ability to continue own care.
- Check and return all patients' personal property (both items in patient unit and those kept in safe area).
- Help the patient or family to deal with business office for customary financial matters and in obtaining supplies.
- Accompany patient to the gate, if possible
- Write Discharge summaries note which usually include:
- Time and date of discharge

## Information sheet 6-Documenting and reporting changes in clients condition

### 6.1 Documenting and reporting changes in clients condition

#### Nursing progress note

Nurses engage in various activities from the time of a patient's admission to his or her discharge from the hospital, helping patients to meet their needs. Each of the activities should be documented properly as authentic and crucial evidence.

The nurses' progress notes are used to document the client's condition, problems, and complaints; interventions; response to interventions; and achievement of outcomes. Progress note is the evaluation of the client's response to treatment; may contain the progress recording of interdisciplinary practitioners (e.g., dietary or social services).

The nurses' progress notes are used to document the client's condition, problems, and complaints; interventions; response to interventions; and achievement of outcomes.

Progress notes include the following forms:

- Nurses' notes
- Medication administration record
- Personal care flow sheets
- Teaching records
- Intake and output forms
- Vital sign records and
- Specialty forms (e.g., diabetic flow sheet and neurologic assessment form)

The progress notes can be completely narrative or incorporated into a standardized flow sheet to complement SOAP (IE), PIE, focus charting, and other documentation systems.

## **Documentation**

Definition: Documentation is defined as written evidence of interactions between and among health professionals, clients, their families, and health care organizations

### **Purpose**

#### **Through documentation ensures:**

- Accurate data needed to plan the client's care in order to ensure the continuity of care
- A method of communication among the health care team members responsible for the client's care
- Written evidence of what was done for the client, the client's response, and any revisions made in the plan of care
- Compliance with professional practice standards (e.g., American Nurses Association)
- Compliance with accreditation criteria (e.g., the Joint Commission on Accreditation of Healthcare Organization [JCAHO])
- A resource for review, audit, reimbursement, education, and research
- A written legal record to protect the client, institution, and practitioner

## **Charting**

Definition: Charting is written record of history, examinations tests, diagnosis, prognosis, therapy and response to therapy.

### **Purpose**

- For diagnosis or treatment of a patient while in the hospital
- After discharge if patient returns for treatment at a future time.
- For maintaining accurate data on matters demand by courts.
- For providing material for research.
- For serving as an information in the education of health personnel, (Medical students, interns, nurses, dietitians. Etc.)
- For securing needed vital statistics
- For promoting public health

## General rules for charting

- A. *Spelling*: Make certain you spell correctly (including medicine labels).
- B. *Accuracy*: Records must be correct in every way. The nurse must be absolutely honest in his or her charting. Mid- statements or changing records may involve the nurse in criminal act.
- C. *Completeness*: There must be no omission of important information however; unnecessary words and statement should be avoided.
- D. *Exactness*: Use the exact word that describes the conditions. Do not use a word you are not sure of.
- E. *Objective information*: The nurse records what he/she “sees” avoid saying “condition better,” or “pulse improved”. Record the actual condition. Also expressions do not show much thought on the part of the nurse.
- F. *Legibility*: Print as plainly and distinctly as possible. Do not use any fancy words. There should be no question to the words and figures used. This is especially true when recording temperature, pulse, respiration and dosage of medicine.
- G. *Neatness*: No blotches on chart sheets. No wrinkling of sheets. Proper spacing of items and words. Begin each statement with a capital letter. Place a period after all abbreviations and at the end of each statement.
- H. *Errors*: If an error is made, use a ruler and draw one line through it, print nearly above “ Error” and sign your name. No erasing and using correction fluid is permitted on the chart.
- I. Each nurse should do her/his own charting, that is, she/he should name and the father’s initial.
- J. *Composition*: Chart carefully, composition and spelling must be correct. Consult a dictionary when in doubt. Only approved abbreviations can be used on nursing record. If in doubt consult the supervisor. Do not use chemical formulas for drug as KMNO<sub>4</sub> instead of potassium permanganate.
- K. *Sentences*: and not be complete but, they must be clear, avoid as needless repetition of word “Pt”. Remarks should reflect as nearly as possible the patient’s condition. (Watch your grammar).
- L. Temperatures should be recorded on the graphic sheet.

- M. All orders should be written and signed. Verbal or telephone should be written in the order sheet and signed by the doctor on the next visit.
- N. Time of charting: Charting must be done immediately after procedure or observation. This is an absolute must. Chart the hour, as possible state order must be recorded with the exact hour the treatment or medication given. The exact time of sleeping pills and narcotics must also be given. Do not record events taking place at different hours on the same line. Be sure to write A.M or P.M. when charting the hour. Twelve noon is written 12 M.D and twelve midnight is written 12 M.N Be careful not to confuse Ethiopian and European time.
- O. Space: Do not crowd notations nor skip lines unnecessarily.
- P. Color of ink: All charting must be done in black or blue – black important events are charted in red on the graphic sheet. E.g. Transfusion, vaccination, day of surgery.
- Q. Chart headings: All headings are to be filled in when the patient is admitted, thereafter, each sheet, which is added, must be properly filled out. No nurse shall every chart on a sheet that is not properly filled out even though someone else may have done so. Even though some one else has failed to do his duty, it will not excuse another for making same mistake. Always give the complete name, the name of the doctor, the room number and also the hospital chart number if there is one.
- R. Orders of assembling patients chart
  - a. Order sheet
  - b. Doctor's progress notes
  - c. Nursing notes
  - d. Temperature graph
  - e. Laboratory reports
  - f. Input and out put note
- S. Patients or relatives and friends of patients are not allowed to read the chart.
- T. Sign each entry with your full legal name and with your professional credentials, or per your institutional policy.
- U. Never change another person's entry, even if it is incorrect.
- V. Use quotation marks to indicate direct client responses (e.g., "I feel lousy").
- W. Document in chronological order (if chronological order is not used, state why).
- N.B:* The order of assembling chart may differ from hospital to hospital.

### Equipment for charting and writing notes

- Report format
- Patient chart
- Pen

### Procedure

The format of the chart varies from hospital to hospital. Most important is the content of the notes.

- First, your notes should describe the assessment that you completed at the beginning of your shift.
- Some hospitals require that all parts of the assessment to be documented; others require that only abnormalities be documented.
- As your shift progresses, you should always include certain items in your notes, including changes in the patient's medical, mental, or emotional condition.
- You should also chart if no change occurred in the patient's condition so that treatments can be modified as necessary. Normal aspects of the patient's condition should be noted also.
- Reactions to any unscheduled or PRN medications must be recorded. To complete this of the entry, note the time the medication was given the problem for which the medications were given the expected solution.
- Finally it is important to record the patient's response to teaching. These notes may describe return demonstrations, verbalization of learning, or resistance to instruction.
- Frequently, respective aspects of nursing can, such as vital signs, and intake and output, and recorded on flow sheets.

Self-Check-2	Written Test
--------------	--------------

**Directions:** Answer all the questions listed below. Use the Answer sheet provided in the next page:

**I. Choose the best answer (each 1point)**

**Note: Satisfactory rating - 5 and 10 points      Unsatisfactory - below 5 and 10 points**

1. Define Charting
2. List the indications for patient discharge
3. List the equipments for charting and writing notes

You can ask your teacher for the copy of the correct answers.

Answer sheet

Name\_\_\_\_\_Date\_\_\_\_\_

Score_____
Rating_____

<b>LG #25</b>	LO #3 contribute to multidisciplinary health care team in caring for clients in the critical care environment
---------------	---

### Instruction sheet

This learning guide is developed to provide you the necessary information regarding the following content coverage and topics:

- Clinical manifestation of acute health problem
- Physical and psychological impact of acute health problem
- Pathophysiology
- acute and potential health problems
- Problem solving approach to assess the impact of acute health problem
- Available resources and support services
- Confidentiality

This guide will also assist you to attain the learning outcomes stated in the cover page. Specifically, upon completion of this learning guide, you will be able to:

- Identify Clinical manifestation of acute health problem
- Discuss Physical and psychological impact of acute health problem
- Explain Pathophysiology
- Identify acute and potential health problems
- assess the impact of acute health problem using problem solving approach
- identify Available resources and support services
- Maintaining Confidentiality

### Learning Instructions:



1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described below.
3. Read the information written in the “Information Sheets”. Try to understand what are being discussed. Ask your trainer for assistance if you have hard time understanding them.
4. Accomplish the “Self-checks” which are placed following all information sheets.
5. Ask from your trainer the key to correction (key answers) or you can request your trainer to correct your work. (You are to get the key answer only after you finished answering the Self-checks).
6. If you earned a satisfactory evaluation proceed to “Operation sheets
7. Perform “the Learning activity performance test” which is placed following “Operation sheets” ,
8. If your performance is satisfactory proceed to the next learning guide,
9. If your performance is unsatisfactory, see your trainer for further instructions or go back to “Operation sheets”.

## Information Sheet 1- Health staff role & responsibility care of clients

### 1.1 Health staff role & responsibility care of clients

A team of clinicians from different disciplines, together with the patient, undertakes assessment, diagnosis, intervention, goal-setting and the creation of a care plan. The patient, their family and carers are involved in any discussions about their condition, prognosis and care plan.

An **interdisciplinary** approach involves team members from different disciplines working collaboratively, with a common purpose, to set goals, make decisions and share resources and responsibilities.

- Positive leadership and management give clear direction and vision for the team

Elements integral to a successful interdisciplinary approach through:

#### **Leadership**

- ✓ Promoting an atmosphere of trust where contributions are valued and consensus is fostered.
- ✓ Ensuring that the necessary resources, infrastructure and training are available, as well as a mix of skills, competencies and personalities amongst team members.

#### **Person-centred practice**

Well-integrated and coordinated care that is based on the needs of the patient can contribute to reducing delays to provision of care and duplicating assessment.

- ✓ Involving the patient in all aspects of their care empowers them to speak up and contribute to decision-making.
- ✓ Formulating shared standardised interdisciplinary care plans and records of care to contribute to holistic and comprehensive person-centred care.

#### **Teamwork**

An interdisciplinary approach relies on health professionals from different disciplines, along with the patient, working collaboratively as a team. The most effective teams share responsibilities and promote role interdependence while respecting individual members' experience and autonomy.

Ensure team members have clear goals, and an understanding of their shared roles and responsibilities within the team structure.

- Participate in joint assessment, diagnosis and goal setting.
- Recognise the overlap in knowledge and expertise of staff from different disciplines.
- Encourage team cohesiveness and creativity through team commitment and the identification of mutual goals.
- Encourage less experienced team members to ask questions which may give rise to creative ideas and alternative perspectives.
- Establish teams with members from diverse disciplines to foster higher overall effectiveness, and hold regular team meetings which are associated with higher levels of innovation.

## 2.1 Collaboration of multidisciplinary team to maintain continuity of care

- The world of healthcare is becoming more varied and complex. The new role of nurses requires them to work across disciplines, incorporating more professionals into the care plan of their patients.
- a **multidisciplinary** approach involves team members working independently to create discipline-specific care plans that are implemented simultaneously, but without explicit regard to their interaction.
- An interdisciplinary approach can help avoid risk averse thinking by weighing up the risk against benefits for the patient.
- An interdisciplinary approach can improve patient outcomes, healthcare processes and levels of satisfaction. It can also reduce length of stay <sup>6,7</sup> and avoid duplication of assessments, leading to more comprehensive and holistic records of care.
- The opportunity for discussion created by interdisciplinary care planning can be used for the patient, their family and carers to develop their ongoing plan.
- The care team need to work together, utilising an interdisciplinary approach, to provide and implement a care plan that meets the patient's goals and needs.
- All health care professionals have a shared role in providing person-centred care for older people.

## **Collection and communication of data with health care team**

Communication across disciplines, care providers and with the patient and their family/carers, is essential to setting the goals that most accurately reflect the person's desires and needs. Involve the patient's GP or pharmacist to increase the success of the intervention.

- Communicate openly to encourage genuine collaboration. A breakdown of communications between health professionals is a common factor in hospital errors and adverse events.
- Document assessments and ensure clinical handover documents are completed thoroughly and stored in a central place.

**Instruction sheet**

This learning guide is developed to provide you the necessary information regarding the following content coverage and topics:

- Predetermined plans of care
- Reflect client needs and individuality
- In respect for the dignity of the client
- Consideration of cultural and religious issues
- Encouraging the client and/or their significant others
- Considering Physical, psychological and social needs
- Professional, legal, ethical and organization requirements
- Using critical thinking and problem solving approaches
- Making safe administration of medication
- Assisting client to meet their activities of daily activities
- Addressing gender and age issues
- Identifying and responding emergency situations
- Supporting health teaching plans
- Psychological support and care
- Documenting and reporting emergency situations
- Reflecting pre- and post-procedure care

This guide will also assist you to attain the learning outcomes stated in the cover page.

Specifically, upon completion of this learning guide, you will be able to:

- Undertake predetermined plans of care
- Ensure to reflect client needs and individuality
- In respect for the dignity of the client
- Perform Nursing intervention by giving Consideration to cultural and religious issues
- Encourage the client and/or their significant others
- Consider Physical, psychological and social needs
- Carry out Nursing intervention according to Professional, legal, ethical and organization requirements
- Use critical thinking and problem solving approaches
- Make safe administration of medication
- Assist client to meet their activities of daily activities
- Address gender and age issues
- Identify and respond emergency situations
- Support health teaching plans
- Provide psychological support and care
- Document and report emergency situations
- Reflect on pre- and post-procedure care

**Learning Instructions:**

- Read the specific objectives of this Learning Guide.
- Follow the instructions described below.
- Read the information written in the “Information Sheets”. Try to understand what are being discussed. Ask your trainer for assistance if you have hard time understanding them.
- Accomplish the “Self-checks” which are placed following all information sheets.
- Ask from your trainer the key to correction (key answers) or you can request your trainer to correct your work. (You are to get the key answer only after you finished answering the Self-checks).
- If you earned a satisfactory evaluation proceed to “Operation sheets
- Perform “the Learning activity performance test” which is placed following “Operation sheets” ,
- If your performance is satisfactory proceed to the next learning guide,
- If your performance is unsatisfactory, see your trainer for further instructions or go back to “Operation sheets”.



## 1.1 Nursing interventions

Nurses operate alongside physicians and other specialists on a care team who all work together to determine the interventions a particular patient needs. Nursing interventions fall into three main categories that determine which medical professionals are responsible for carrying out a patient intervention:

- **Independent:** A nurse can carry out these interventions on their own, without input or assistance from others. An example of an independent intervention includes educating a patient on the importance of their medication so they can administer it as prescribed.
- **Dependent:** These nursing interventions require an order from a physician, such as ordering the prescription for a new medication.
- **Interdependent:** Nurses work alongside multiple members of a care team to perform these interventions. An example of an interdependent intervention could include a patient recovering from knee surgery who is prescribed pain medication by a physician, administered medication by a nurse and given physical therapy exercises by a specialist.

### 1.1.1 Nursing care plan (NCP)

A **nursing care plan (NCP)** is a formal process that includes correctly identifying existing needs, as well as recognizing potential needs or risks. Care plans also provide a means of communication among nurses, their patients, and other healthcare providers to achieve health care outcomes. Without the nursing care planning process, quality and consistency in patient care would be lost.

Nursing care planning begins when the client is admitted to the agency and is continuously updated throughout in response to client's changes in condition and evaluation of goal achievement. Planning and delivering individualized or patient-centered care is the basis for excellence in nursing practice.

The following are the purposes and importance of writing a nursing care plan:

## Purposes of Nursing Care Plan

- **Defines nurse's role.** It helps to identify the unique role of nurses in attending the overall health and well-being of clients without having to rely entirely on a physician's orders or interventions.
- **Provides direction for individualized care of the client.** It allows the nurse to think critically about each client and to develop interventions that are directly tailored to the individual.
- **Continuity of care.** Nurses from different shifts or different floors can use the data to render the same quality and type of interventions to care for clients, therefore allowing clients to receive the most benefit from treatment.
- **Documentation.** It should accurately outline which observations to make, what nursing actions to carry out, and what instructions the client or family members require. If nursing care is not documented correctly in the care plan, there is no evidence the care was provided.
- **Serves as guide for assigning a specific staff to a specific client.** There are instances when client's care needs to be assigned to a staff with particular and precise skills.
- **Serves as guide for reimbursement.** The medical record is used by the insurance companies to determine what they will pay in relation to the hospital care received by the client.
- **Defines client's goals.** It does not only benefit nurses but also the clients by involving them in their own treatment and care.

A nursing care plan (NCP) usually includes nursing diagnoses, client problems, expected outcomes, and nursing interventions and rationales. These components are elaborated below:

- Client health assessment, medical results, and diagnostic reports. This is the first measure in order to be able to design a care plan. In particular, client assessment is related to the following areas and abilities: physical, emotional, sexual, psychosocial, cultural,

spiritual/transpersonal, cognitive, functional, age-related, economic and environmental. Information in this area can be subjective and objective.

- Expected client outcomes are outlined. These may be long and short term.
- Nursing interventions are documented in the care plan.
- Rationale for interventions in order to be evidence-based care.
- Evaluation. This documents the outcome of nursing interventions

### **1.1.2 Nursing intervention in respect to respect for the dignity of the client**

- Dignity is a human right and is important to every individual but can become compromised during healthcare.
- An individual's dignity is affected by the treatment received from others.
- It's a complex concept that means different things to different people, and it can be deeply embedded in culture.
- A person's sense of dignity is influenced by many things-level of independence, perceived control, symptom management, and attitudes of care providers to name a few. Most important is how our patients see themselves, and how they believe others see them.

So, how can you promote dignity in the care you give to your patients? Here are a few principles:

- Treat all patients with kindness, humanity, respect, and compassion. As adults. As individuals. As we ourselves want to be treated.
- Look beyond the failing body, the walker, the oxygen tank, to see the person.
- Get to know the whole person you're caring for, body, mind and spirit, and consciously incorporate that knowledge into your care.
- Include the patient in conversations and decisions, both large and small.

- Ask the simple yet powerful Patient Dignity Question: "What do I need to know about you as a person to give you the best care possible?"
- Follow up by finding a consistent way to communicate this information to other providers.
- Collaborate with them to achieve mutually valued health goals that maximize the patient's sense of independence.

### **1.1.3 Consideration of cultural and religious issues in Nursing intervention**

- People of different cultures have unique beliefs, values, and practices.
- These differences make it challenging to offer health care that accommodates each individual.
- Some members of religious groups don't believe in certain types of treatments, while other people may respond to pain and illness in unique ways.
- Those working in the health care field, particularly in nursing, must be aware of cultural differences and use sensitivity when treating each patient.
- One of the most common cultural issues that arise for nurses involves faith and religious beliefs.
- Certain religious groups might refuse prescription medications, blood transfusions, surgeries, or other potentially life-saving treatments because of their religious beliefs.
- Nurses may struggle to understand these beliefs and may disagree with the patient's decision to decline treatment, which is why developing sensitivity towards various religious beliefs is so important.
- When a nurse asks questions and tries to better understand the beliefs of the patient, they can help make accommodations and, if possible, work around traditional treatment plans.

- This extra step can greatly improve the patient's experience and relationship with their healthcare team

#### **1.1.4 Encouraging the client and/or their significant others**

- Refocusing the health care system on the people it serves will require renewed attention to the ways in which patients, their families, and other caregivers access health information and manage the patient's health.
- In some cases, patient self-management is a realistic expectation, while in other cases, family and other caregivers will be the primary managers of care.
- Regardless, patient engagement and support for self-management require education and interventions that enhance patients' ability to monitor and manage their own health problems
- it is necessary to provide information and teach people disease-specific skills so they will understand what behavior changes they must make to improve their health prospects and will have the problem-solving skills to cope with changes in their condition.
- It is also necessary to recognize and assist with the reality of living with a chronic condition, provide patients with support and follow-up opportunities, and encourage patients to actively manage their disease.
- *Patients and families* should expect to be offered full participation in their own care and health and encouraged to partner, according to their preference, with clinicians in fulfilling those expectations

#### **1.1.5 Professional, legal, ethical and organization requirements**

- **Ethics** is a branch of philosophy that deals with right and wrong. It is a system of principles and rules of conduct recognized and accepted by a specific group or culture.
- Ethical values are essential for any healthcare provider
- Ethical values are universal rules of conduct that provide a practical basis for identifying what kinds of actions, intentions, and motives are valued

- Ethics within healthcare are important because workers must recognize healthcare dilemmas, make good judgments and decisions based on their values while keeping within the laws that govern them
- Professional ethics is a familiar concept in nursing and provides an ethical code for nursing practice.
- To practice competently with integrity, nurses, like all healthcare professionals, must have regulation and guidance within the profession
- Duty of care is a fundamental aspect of nursing, and many nurses consider this to be an important part of their professional duties as a nurse.
- **Law** is the set of enforced rules under which a society is governed.
- The law establishes the rules that define a person's rights and obligations. Law also sets out penalties for those who violate these rules. Laws are changed frequently to reflect societal needs.

#### **1.1.6 Using critical thinking and problem solving approaches**

- The complex health system and challenging patient care environment require experienced nurses, especially those with high cognitive skills such as problem-solving, decision-making and critical thinking.
- High quality, safe patient care is dependent upon the healthcare provider's ability to reason, think, and make judgments about care.
- Nursing is a profession that blends science and art, research and creativity. Though nurses rely on clinical expertise and experience in a variety of situations, those with problem-solving skills are better equipped to serve their patients.
- Critical thinking skills are essential for all nurses. They are a necessity for the provision of safe, high-quality clinical care. Nurses today are caring for patients who have complex, culturally diverse health care needs, making the importance of critical thinking in nursing even more paramount
- The practice of nursing requires critical thinking and clinical reasoning. Critical thinking is the process of intentional higher level thinking to define a client's problem, examine

the evidence-based practice in caring for the client, and make choices in the delivery of care

- Clinical reasoning is the cognitive process that uses thinking strategies to gather and analyze client information, evaluate the relevance of the information, and decide on possible nursing actions to improve the client's physiological and psychosocial outcomes. Clinical reasoning requires the integration of critical thinking in the identification of the most appropriate interventions that will improve the client's condition.

#### **1.1.7 Making safe administration of medication**

- Perform the SEVEN RIGHTS x 3 (this must be done with each individual medication):
  - ✓ The right patient
  - ✓ The right medication (drug)
  - ✓ The right dose
  - ✓ The right route
  - ✓ The right time
  - ✓ The right reason
  - ✓ The right documentation

#### **1.1.8 Assisting client to meet their activities of daily activities**

- A caring, friendly Nursing with an upbeat attitude can make all the difference in a patient's life.
- ADL care refers to "Activities of Daily Living," and includes bathing, washing, shaving, grooming, and dressing.
- Assisting with ADL activities is one of the primary responsibilities you will have as a nursing intervention..

- There are three key words to keep in mind at all times during ADL procedures: comfort, safety and dignity.
- Put yourself in the place of your patient -- someone else has to help you bathe or wash, help shampoo your hair and shave you. Can You imagine how nervous you would be the first time you had to put any of these highly personal functions into someone else's hands?
- Treat your patient like you would want to be treated, or how you would like someone to treat your father or mother if they were in need of assistance.

### **1.1.9 Identifying and responding emergency situations**

Given the growing rate of accidents and disasters in the world, preparing nurses as the main group responding to these events is crucial

Nurses preparedness in disasters refers to a process in which nurses involve to properly prepare and effectively respond to emergencies and disasters

#### **How to handle a nursing emergency**

##### **I. Think ahead.**

By being one step ahead and developing clear procedures, you'll be able to react immediately when the worst happens. Agency nurses, by nature, often work in unfamiliar locations, so get into the habit of finding out where vital equipment and medicines are kept as soon as you arrive. Identify managers and senior nurses – and listen to them.

##### **II. Stay calm.**

This might sound obvious, but it's easy to catastrophise or second guess what might happen next and lose focus. Concentrate on the now; going to work armed with a toolkit of calming techniques, such as deep breathing exercises, can really help here. Which brings us back to point one, above, and being prepared. With regular practise outside of work, they will be second nature when an emergency occurs.

##### **III. React.**



Respond to the patient if he or she is conscious. However you're feeling, their panic levels will be higher, so talk to them calmly. Never raise your voice to them and try also to keep your voice calm when interacting with colleagues – don't shout. Where possible, talk the patient through what is happening. Use their name if you can, and tell them yours.

#### **IV. Go back to basics.**

This is another one that sounds self-evident, but using simple acronyms or mantras can help you focus. Remember ABC – airways, breathing, circulation – and keep checking vital signs. If you're working in a team, play to your strengths wherever possible.

#### **V. Trust your instincts.**

Yes, you will have a procedure to follow but don't become too caught up in giving a textbook response. Remember you have had all the nursing training you need to handle this, so believe in yourself – you're the best person for the situation!

#### **VI. Debrief.**

After every emergency, go over the situation afterwards either independently or with the team. Could the incident have been predicted? Could you have done anything differently? Remember to praise yourself; whatever the outcome, you did your best and gave the patient the best possible chance of survival and recovery.

## **1.2 supporting health teaching plans**

- Nursing is not just about administering treatments. Nurses also are responsible for teaching patients about preventing and managing medical conditions. By relaying information, nurses help patients take control of their healthcare.

### **WHY IS PATIENT EDUCATION IMPORTANT?**

- Patient education is a significant part of a nurse's job. Education empowers patients to improve their health status. When patients are involved in their care, they are more likely to engage in interventions that may increase their chances for positive outcomes. The benefits of patient education include:
  - ✓ Prevention of medical conditions such as obesity, diabetes or heart disease.
  - ✓ Patients who are informed about what to expect during a procedure and throughout the recovery process.
  - ✓ Decreasing the possibility of complications by teaching patients about medications, lifestyle modifications and self-monitoring devices like a glucose meter or blood pressure monitor.
  - ✓ Reduction in the number of patients readmitted to the hospital.
  - ✓ Retaining independence by learning self-sufficiency

### **WHAT IS THE NURSE'S ROLE IN PATIENT EDUCATION?**

- Effective patient education starts from the time patients are admitted to the hospital and continues until they are discharged. Nurses should take advantage of any appropriate opportunity throughout a patient's stay to teach the patient about self-care. The self-care instruction may include teaching patients how to inject insulin, bathe an infant or change a colostomy pouching system.
- Without proper education, a patient may go home and resume unhealthy habits or ignore the management of their medical condition. These actions may lead to a

relapse and a return to the hospital. To educate patients, nurses may instruct patients about the following:

- ✓ Self-care steps they need to take.
- ✓ Why they need to maintain self-care.
- ✓ How to recognize warning signs.
- ✓ What to do if a problem occurs.
- ✓ Who to contact if they have questions.

### **1.2.1 Psychological support and care**

- Caring is at the core of what nurses and other health professionals do. But caring encompasses more than simply looking after people's physical health needs.
- People requiring any health service will have psychological needs that affect their feelings, thoughts, and behavior.
- Good psychological care can even help improve physical health outcomes.

### **1.2.2 Emergency situations are reported and documented according to policy and procedure**

- Documentation is the bond which holds patient care together; it provides written confirmation of discussions and actions that have occurred as well as of activities that have been omitted for specific reasons; so it becomes a record and a method of communication regarding the patient. Therefore, without accurate documentation the ability to communicate can be compromised.
- In every case, communication is paramount to ensure continuity of care. All care needs to be documented comprehensively, succinctly and contemporaneously (not at the end of the staff member's shift or the patient's transfer or discharge, as can occur on the wards) to ensure that care provision is complete.

- The quality of records maintained by nurses is a reflection of the quality of the care provided by them to patients.
- Nurses are professionally and legally accountable and responsible for the standard of practice which they deliver and to which they contribute.
- Good practice in record management is an integral part of quality nursing practice.

Self-Check- 1	Written Test
------------------	--------------

**Directions:** Answer all the questions listed below. Use the Answer sheet provided in the next page:

**Note:** Satisfactory rating - 5 and 10 points      Unsatisfactory - below 5 and 10 points

**I. Choose the best answer (each 1 point)**

1. Educating a patient on the importance of their medication is an example of:

- A. Independent nursing intervention
- B. Dependent nursing intervention
- C. Interdependent nursing intervention

**II. Short answer (each 1 point)**

2. is a branch of philosophy that deals with right and wrong

- A. Law      B. Confidentiality      C. Ethics

3. Define A nursing care plan (NCP)

4. What are the purposes of nursing care plan

5. List the seven Rights for safe administration of medication

You can ask you teacher for the copy of the correct answers.

Answer sheet

Name \_\_\_\_\_ Date \_\_\_\_\_

Score _____
Rating _____



**LG #27****LO #5 Contribute to an emergency response****Instruction sheet**

This learning guide is developed to provide you the necessary information regarding the following content coverage and topics:

- Definition Emergency
- Roles and responsibility emergency response team
- Preparing emergency equipment
- Request from emergency response team
- Drugs in emergency resuscitation
- Performing Emergency resuscitation techniques

This guide will also assist you to attain the learning outcomes stated in the cover page. Specifically, upon completion of this learning guide, you will be able to:

- Define Emergency
- Identify Roles and responsibility emergency response team
- Prepare emergency equipment
- Respond to request from emergency response team
- Identify drugs in emergency resuscitation
- Perform Emergency resuscitation techniques

**Learning Instructions:**

- 1** Read the specific objectives of this Learning Guide.
- 2** Follow the instructions described below.
- 3** Read the information written in the “Information Sheets”. Try to understand what are being discussed. Ask your trainer for assistance if you have hard time understanding them.
- 4** Accomplish the “Self-checks” which are placed following all information sheets.
- 5** Ask from your trainer the key to correction (key answers) or you can request your trainer to correct your work. (You are to get the key answer only after you finished answering the Self-checks).
- 6** If you earned a satisfactory evaluation proceed to “Operation sheets
- 7** Perform “the Learning activity performance test” which is placed following “Operation sheets” ,
- 8** If your performance is satisfactory proceed to the next learning guide,
- 9** If your performance is unsatisfactory, see your trainer for further instructions or go back to “Operation sheets”.



## Information sheet 1-Emergency response team

### 1.1 Definition Emergency

- **Emergency:** - is a serious, unexpected, and often dangerous situation requiring immediate action
- **Health:**-is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity
- **Care:**-is the provision of what is necessary for the health, welfare, maintenance, and protection of someone or something
- **Emergency Department:**-'The Emergency department is the dedicated area in a hospital that is organized and administered to provide a high standard of Emergency care to those in the community who perceive the need for or are in need of acute or urgent care including hospital admission'

### 1.2 Roles and responsibility of emergency response team

**Emergency health care team:**-is the team that manages emergency healthy condition of a patient.

**Clinical decision unit** patients who have been seen in the emergency department may need more time to have their medical condition evaluated, or remain for short term therapies while in the emergency department.

In clinical decision unit, nurse practitioners managing patients care in collaboration with attending doctors and Resident (is a licensed doctor who is undergoing specialty training) to determine the response to therapeutic treatments and need for admission to the hospital.

**Attending doctor** an attending doctors is a licensed senior doctor who supervises the medical team and is in charge of planning your treatment and coordinating your care.

**Resident** A "resident" is a licensed doctor who is undergoing specialty training. The resident works with the attending doctor to make decisions about managing your care and your primary doctor contact while you are in the emergency department

**Nurse practitioner** is an advanced practitioner nurse who has completed graduated education and is trained to prevent, diagnose and treat medical condition. A nurse practitioner provides comprehensive health care as part of your health care team

- ✓ **nurse**, emergency nursing is a specialty in which nurse care for patients in the emergency or critical phase of their illness or injury and are adept at discerning life threatening problems, prioritizing the urgency of care and rapidly and effectively carrying out resuscitative measure and other treatment these nurse are trained to be able to initiate the patient and family about information and emotional support

## Information sheet 2-emergency equipment

### 1.1 Preparing emergency equipment

#### I. Medical equipment

- **B/P** (Blood pressure apparatus): used to measure the arterial blood pressure
- **Stethoscope**: used to hear heart beat or respiratory sound
- **Thermometer**: used to measure temperature
- **Pulse oximeter**: used to measure the oxygen level in the blood
- **Bedpan**: used to receive feaces
- **Garbage**: container used to receive used substances
- **Sharp container**: used to collect sharps
- **Pillow**: used to support patient
- **Blanket**: used to cover and retain heat for hypothermic patient
- **Linen**: piece of cloth used to cover the wheeled stretcher
- **Suctioning unit**: For ambulance purpose, the suction should work with dry or wet cell, or charged or manual. It consists of bottle, tube, suction nozzle and cork.
- **Kidney dish**: used to rinse suction nozel

**II. Basic wound care supplies** This encloses materials used for wound and bleeding, and musculoskeletal injuries.

- **Gauze**: used to absorb or cover wounds
- **Roller bandage**: used to cover bleeding wounds
- **Scissors**: used to cut gauze, plaster etc
- **Disposable glove**: used to protect from your body from other substances
- **Cotton**: used to absorb oozing blood

- **Antiseptics( Povidone, Iodine , Savelon):** to clean wound and prevent bacteria growth in the wound
- **Elastic bandage:** used to apply for strain, sprain etc
- **Plaster:** used to keep gauzes in place, or for some marking

### III. Air way and ventilation

- **Bag-valve-mask(BVM) delivery (AMBU bag):**used to provide assistance ventilation
- **Oropharyngeal airways:** used to prevent tongue fall in unconscious patient
- **Face mask:** used to deliver artificial respiration

IV. **Oxygen delivery unit** This unit is mainly employed for those patients whose oxygen level is below the normal range or any associated cardio- pulmonary problems. It includes the following components and you have to check it in the morning before you engage to emergency call.

- **Oxygen cylinder:** oxygen medicated cylinder
- **Flow meter(regulator):**used to regulate the flow of oxygen
- **Bottle with water for humidification:** used to humidify dry air
- **Non rebreathing mask( face mask):** used to deliver oxygen from the cylinder to the patient covering the mouth and nose
- **Nasal canula:** used to provide oxygen through nose
- **Wrench:** used to fasten and loosen the flow meter on oxygen cylinder
- **Trauma kit** Trauma kit is mainly employed for traumatic injuries of different type. This includes:
  - Different size **splint:** used to immobilize injured parts
  - **Triangular bandage:** used to support and immobilize upper extremities
  - **Safety pin:** used to fasten triangular bandage
  - **Gloves:** used to protect from any substance while giving care
  - **Gauze:** used to absorb and cover wounds
  - **Roller bandage:** used to cover bleeding
  - **Cotton:** used to apply during splinting

- **Elastic bandage:** used to provide support for strain, sprain etc
- **Scissors:** used to cut gauze, bandage, plaster etc
- **Antiseptics (savelon, bethadine):** used to clean wound and prevent further bacteria growth
- **Bag-valve-mask (Ambu bag):** used to provide assistance ventilation
- **Oropharyngeal air way:** used to prevent tongue fall on the trachea

**V. Safety and operations equipment 1. Personal safety equipment** Always carry personal protective equipment that allows you to work safely in a limited variety of hazardous or contaminated situations.

- **Uniform:** any cloth used to cover our body prepared by the organization
- **Surgical masks:** used to cover face
- **Helmets:** used to cover head
- **Goggles:** used to cover the eyes
- **Safety shoes or boots** (for future consideration): used to cover the foot and can serve as antistatic
- **Surgical gloves:** used to protect from any contaminant fluid
- **Heavy duty gloves:** used to handle for disinfection and ambulance care

### Information sheet 3- Request from emergency response team

#### 1.1 Request from emergency response team

- Prepare to assess and care for the patient
- Assign specific initial duties and scene management tasks
- Based on the designed care plan, you need to assign specific task to each team and hence, able to accomplish the mission as early as possible.
- Decide what type of equipment to take initially
- Based on the information obtained and care plan put the tools that you are going to use in sequence.
- **Immediately size up of the scene** The following guide lines are used for immediate size-up of the scene:
  - a. Look for safety hazards
  - Every scene can potentially cause injury to you, so you need to evaluate for potential or actual hazards as you approach to the scene. If you get the environment is safe you can move to the other parameters.
  - Evaluate the need for additional units.
  - Having arrived on the scene and assessment was made; consider your ability whether you and your team manage it or not.
- If you need more resources, call for additional assistance before beginning to treat the patient
- It will take time for more help to arrive, so the sooner you request aid, the better. In addition, you are less likely to call for help if you first become involved in patient care, and this can be determined to the patient's chance of recovery.
- Determine the mechanism of injury or nature of the illness

- It could be a traumatic problem that involved a **mechanism of injury (MOI)**. It is the way in which traumatic injuries occur; the forces that act on the body to cause damage or it can be a medical problem based on the **nature of illness (NOI)**.
- It is the general type of illness a patient is experiencing. Both require you to search for clues regarding how the incident occurred.
- You can use the mechanism of injury as a kind of guide to predict the potential for a serious injury by evaluating three factors:
  - ✓ the amount of force applied to the body
  - ✓ the length of time the force was applied
  - ✓ The area of the body involved
- However, for medical patients, nature of illness is determined by the patient's **chief complaint** (patient subjective complaint).
- In order to obtain this, you need to talk with patient, family or bystanders. At the same time, use your senses to check the scene for clues as to the possible problem.
- Evaluate the need to stabilize the spine.
- For traumatic injuries, you need to suspect spinal injury. Therefore, early immobilization is an important step.
- When you are uncertain whether spinal immobilization is necessary or not, you always take the safe side and apply immobilization device.
- If you move causality with spinal injuries without immobilization, the patient may end up in permanent disability or immediate death.
- In preparation for providing patient care, put on gloves as you approach to the patient.
- In addition observe the scene and the patient whether to use other personal protective equipment. This includes; protective eye wears, gown and mask, etc.

## Information sheet 1 -Request from emergency response team

### 1.1 Performing Emergency resuscitation techniques

- **Opening the Airway**

- ✓ Emergency medical care begins with ensuring an open airway. The patient's airway and breathing status are the first step in your Initial assessment for a very good reason: unless you can immediately open and maintain a patent airway, you cannot provide effective patient care. Regardless of the patient condition, the airway must remain patent at all times.
- ✓ If the patient is not responsive to verbal stimuli, then you must assume that the airway may be closed. To most effectively open the airway and assess breathing, the Patient needs to be in a supine position.
- ✓ The patient's airway must be opened and assessed in the position in which you find the patient. If your patient is found in the prone position (lying face down), he must be repositioned to allow for assessment of airway and breathing and to begun cardiopulmonary resuscitation (CPR) if necessary. In unconscious patient, especially when there are no witnesses who can rule out trauma, the patient should be log rolled as a unit so the head, neck and spine all move together without twisting. The following steps are helpful to position the patient for airway management:
- ✓ Kneel beside the patient. Have your partner kneel far enough away so that the patient, when rolled towards you, does not come to rest in your lap. Place your hand behind the patient's head and neck to provide in line stabilization of cervical spine as your partner straightens the patient's leg.
- ✓ Have your partner place his or her hands on the patient's far shoulder and hip



- ✓ As you call the count to control movement, have your partner turn the patient toward you pulling on the far shoulder and hip. Control the head and neck so that they move as a unit with the rest of the torso. At this point, you should apply a cervical collar. Place the patient arms at his or her side
- ✓ Once the patient is positioned, maintain an open airway and check for breathing.
- ✓ A conscious patient who cannot speak or cry most likely has a complete airway obstruction.
- ✓ A high pitched crowing sound may indicate a partial air way obstruction.
- ✓ With unresponsive patient or a patient with a decreased level of consciousness, you should immediately assess the patency of the airway.
- ✓ If it is clear, you continue your breathing assessment.
- ✓ If the air way is not clear your next priority is to open it using the head tilt or chin lift or jaw-thrust maneuver. In unconscious patient, the most common cause of airway obstruction is the tongue, which falls back into the throat when the muscles of the throat and tongue relax.

**Types of maneuvers Head tilt-chin lift maneuver** Head tilt-chin lift maneuver is one way to open an airway. We use this maneuver for patients who has not sustained trauma. The steps of performing this maneuver for adults and pediatrics

- a. Kneel beside the supine patient
- b. Place one hand on the patient's forehead and apply backward pressure
- c. Place the tips of the fingers of the other hand under the lower jaw
- d. Lift the chin



Figure 1 Head Tilt–Chin Lift maneuver

- **Jaw-thrust maneuver** Jaw-thrust maneuver is another way to open an airway. We use this maneuver for patients with suspected spinal injury for adults and pediatrics
  - a. Kneel above the patient's head with your fingers behind the angle of the lower jaw.
  - b. Move the jaw upward.
  - c. Use your thumbs to position the lower jaw to allow breathing.
  - d. For trauma patients, keep the head in a neutral position.
  - e. If jaw thrust maneuver does not adequately open airway, carefully perform head tilt and chin lift maneuver.



Figure 2 Jaw-thrust maneuvers

\* Do not hyperextend the neck of an infant or child for the above maneuvers

- **Assess the need for suction** After you open the patient's airway by using either the head tilt - chin lift or the jaw-thrust techniques, look in the patient mouth to see if anything is blocking the patient airway. Potential blocks includes secretions, such as vomitus, mucous or blood; foreign body such as candy, food or dirty and denture or false teeth that may have become dislodged and are blocking the patient's airway. If you find anything in the patient's mouth, remove it by using one of the techniques noted in the following section i.e. finger sweeps or suction. If the patient's airway is clear consider using one of the devices described in the section airway adjunct i.e. supplemental oxygen Vomitus, mucous, blood and foreign object must be cleared from the patient's airway. This can be done by using finger sweep, suctioning or by placing the patient in recovery position. Finger sweep can be done quickly and require no special equipment except a set of medical gloves. In order to perform a finger sweep follow the following steps:
  - Turn the patient onto his or her side
  - Insert your gloved finger in to the patient's mouth

- Curve your fingers into a C-shape and sweep it from one side of the back of the mouth to the other. Scoop out as much of the material as possible. A gauze pad wrapped around your gloved fingers may help remove the obstructing materials. Repeat the finger sweep until you have removed all the foreign material in the patient's mouth. Finger sweep should be your first attempt at clearing the airway even if suction equipment is available
- Sometimes just sweeping out the mouth is not enough to clear the material completely from the mouth and upper airway. Suction machine can be helpful in removing secretions such as vomitus, blood and mucous from the patient mouth. Suctioning the airway is a life saving techniques. Although a gauze pad and your gloved finger can do most of the work, the use of supplementary suction device enable you to remove a greater amount of obstructing material from the patient's airway.

### **Assess for breathing**

After the airway is open and the secretions are cleared, reassess the patient. Patients may start to breathe on their own. Assess whether breathing has returned using look, listen, and feel technique. Look for the rising and falling of the patient's chest and abdomen. Listen for the sound of air moving in and out of the patient's mouth and nose by placing your ear about 10 inch above the patient's nose and mouth. Feel for movement of air on the side of your face and ear. Place a hand on the patient's chest to feel movement. Continue to look, listen and feel for at least 5 seconds. Your breathing check should not take more than 10 seconds. As you asses a patient breathing look, listen and feel for the presence of breathes and then asses adequacy of breathing. If there are no signs of breathing, proceed to the next step and correct the lack of breathing by beginning rescue breathing (artificial breathing). If the patient is breathing adequately, you can continue to maintain airway and monitor the rate and depth of respiration to ensure adequate breathing continues. Observe how much effort is required is required for the patient to breath. Normal respiration is not usually shallow or excessively deep. Shallow respiration can be identified by little movement of the chest wall. Deep respiration cause a great deal of chest movement rise and fall.



Figure 3 Breathing assessment

### **Mouth to mouth Rescue breathing**

Mouth to mouth Rescue breathing is an effective way of providing artificial ventilation for non breathing patient. It requires no equipment except you. However, because there is some what a high risk of contracting a disease when using this method, you should use a mask or barrier breathing device if available, you must way the potential goods to the patient against the limited chance that you will contract an infectious disease from mouth-to-mouth breathing. To perform mouth to mouth breathing follows these steps

- Open the air way with the head tilt-chin lift maneuver. Press on the forehead to maintain the backward tilt of the head
- Pinch the patient's nostrils together with your thumb and forefinger
- Keep the patient's mouth open with the thumb of whichever hand you are using to lift the patient's chin
- Take a deep breath and then make a tight seal by placing your mouth over the patient's mouth

- Breathe slowly into the patient's mouth for 1 second. Breathe until the patient's chest rises
- Remove your mouth and allow the patient to exhale passively. Check to see that the patient's chest falls after each exhalation
- Repeat this rescue breathing sequence 10 to 12 times per minute for children and infant

### **Bleeding Emergencies**

- Methods for controlling external bleeding include:
  - ✓ Direct pressure
  - ✓ Elevation
  - ✓ Pressure points
  - ✓ Tourniquet

### **Techniques of choking management Abdominal thrust technique to remove an airway obstruction**

- Position yourself behind the person and put both of your arms around the upper part of the abdomen. Make sure that he/she is bending forwards.
- Make a fist with one hand over the person's upper abdomen (between the bellybutton and the breastbone), then grasp the wrist of the fist with the other hand
- Pull both your hands sharply inwards and upwards. Do this up to five times. This helps you to increase the pressure in the blocked airway in order to dislodge the obstruction.
- Usually, this will have removed the obstruction: however, if not, repeat the back slapping and abdominal thrust procedures two to three times more.



Figure 4: First aid measure for obstructed air way

Do not try to hook the foreign body out with your fingers; this is likely to push it further down. Do the following at once.



Figure 5: First aid measure during choking for adults and children's

**Cardiopulmonary Resuscitation (CPR)** : - Is used when both breathing and beating of the heart stopped suddenly (Cardiac arrest& Respiratory arrest)

- ✓ If includes clearing the air passages, mouth to mouth breathing and cardiac massage(chest compression )
- ✓ This procedure is called basic life support measures ;also known as ABCs resuscitation (A- air way, B- breathing, C-circulation)
- ✓ Squeezing the victims' heart between the breast bone (sternum) and the spine works like a pump, forcing the blood to reach the brain and vessels supplying blood to the heart.
- ✓ The technique should not be attempted without training and should never be practiced on a healthy person.

### **Steps in CPR**

- ✓ Check pulse(carotid pulse)
  - ✓ Check breathing (look, feel, hear)
  - ✓ When breathing has stopped, one must feel the pulse in the neck after giving first two breaths by mouth to mouth respiration.
  - ✓ If there is no pulse, the cardiac message should be initiated immediately.
- A. The victim should be placed on his back on a firm of solid surface so that proper compression could be exerted on the heart
  - B. Start cardiac massage
  - C. One should kneel down on one side of the victim
  - D. Move or remove all clothing covering the victim's chest
  - E. Put the heel of one hand on the center of the victim's bare chest between the nipples. (on the breast bone).
  - F. Put the heel of your other hand on top of the first hand.
  - G. Straighten your arms and position your shoulder directly over your hands.
  - H. Push hand and fast. Press down 4-5cm with each compression



I. For each compression, make sure you push straight down on the victim's breast bone.

J. Deliver compression, in a smooth fashion at a rate of 100 compressions per minute.

K. Along with cardiac massage, mouth to mouth breathing should be continued.

- ✓ Adult: Alternate 30 chest compressions with 1 or 2 rescue breathes
- ✓ Child: Alternate 30 chest compressions with 1 or 2 rescue breathe.
- ✓ Baby: Alternate 30 chest compressions with 1 or 2 rescue breathe.
- ✓ Continue until the victim gets advanced care

D. The CPR should be continued till the victim starts to breath, the pulse returns and the color of the victim improve from blue to pink E. If young children,

- ✓ Only one hand should be used to compress the chest
- ✓ The depth of compression should be slightly less than for an adult .
- ✓ In a baby, chest compression should be given using two fingers or (2 thumb-encircling hand for 2-rescuer CPR) only with the depth of compression not more than 2cm.

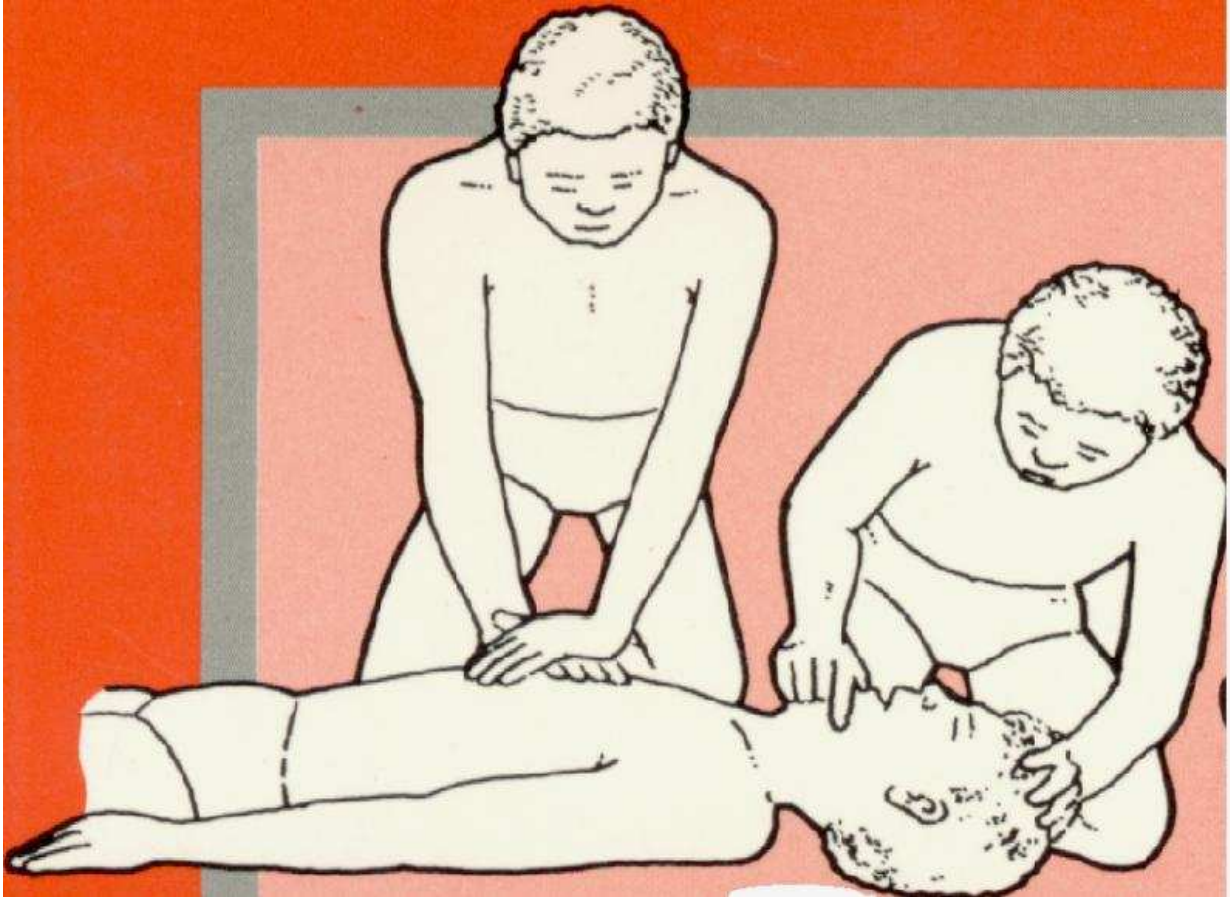


Figure 6 Cardiopulmonary resuscitation with two rescuer



Figure 7 :Cardiopulmonary resuscitation with One rescuer

Self-Check- 1	Written Test
------------------	--------------

**Directions:** Answer all the questions listed below. Use the Answer sheet provided in the next page:

**I. Choose the best answer (each 2 point)**

**Note:** Satisfactory rating - 5 and 10 points      Unsatisfactory - below 5 and 10 points

1. What is CPR?

2.What are the four methods for controlling external bleeding:

You can ask you teacher for the copy of the correct answers.

Answer sheet

Name\_\_\_\_\_Date\_\_\_\_\_

Score_____
Rating_____

## Operation sheet 1- Cardiopulmonary resuscitation (CPR)

### Operation title: - Performing CPR

Equipment ,tools and materials	Supplies and equipment needed or useful for performing CPR include: <ul style="list-style-type: none"> <li>• Ambubag</li> <li>• Gauze</li> </ul>
Conditions or situations for the operations	<ul style="list-style-type: none"> <li>• The procedure should be performed according to the standard check list</li> </ul>
Procedures	<ol style="list-style-type: none"> <li>1. Lay the casualty on a firm flat surface</li> <li>2. Kneel close to the side at right angles to him and along side his/her chest.</li> <li>3. Press the lower third of the sternum with the heels of your hands</li> <li>4. Check the carotid pulse every few minutes</li> <li>5. Chest compression – ventilation 30: 2, for 5 cycles</li> <li>6. Reassessment has to be done after 5 cycles of compressions and 6 cycle of ventilations (30:2) and check for the return of carotid pulse and spontaneous breathing</li> </ol>
Precautions	<ul style="list-style-type: none"> <li>• Care should be taken while pressing the chest</li> <li>• Chest compression should on the correct site</li> </ul>
Quality criteria	<ul style="list-style-type: none"> <li>• Did the trainees compressed on the correct location?</li> <li>• Did trainees gave mouth to mouth respiration correctly?</li> </ul>

## Performing CPR

LAP Test-1	Practical Demonstration
------------	-------------------------

Name: \_\_\_\_\_ Date: \_\_\_\_\_

Time started: \_\_\_\_\_ Time finished: \_\_\_\_\_

### **Instructions:**

1. You are required to perform the following:
  - 1.1. Mouth to mouth respiration
  - 1.2. CPR
2. Request your teacher for evaluation and feedback

## Operation sheet-2

### Operation title: -Controlling External bleeding

Equipment ,tools and materials	Supplies and equipment needed or useful for performing CPR include: <ul style="list-style-type: none"><li>• Glove</li><li>• Splint</li><li>• Gauze</li><li>• Tourniquet</li></ul>
Conditions or situations for the operations	<ul style="list-style-type: none"><li>• The procedure should be performed according to the standard check list</li></ul>
Procedures	<ol style="list-style-type: none"><li>1. Apply Direct pressure</li><li>2. elevate the injured body part</li><li>3. Apply on supplying artery (Pressure points)</li><li>4. Apply Tourniquet</li></ol>

Precautions	<ul style="list-style-type: none"> <li>Care should be taken while applying tourniquet</li> </ul>
Quality criteria	<ul style="list-style-type: none"> <li>Did the trainees followed the steps of controlling external bleeding?</li> </ul>

### Controlling external bleeding

<b>LAP Test- 2</b>	Practical Demonstration
--------------------	-------------------------

Name: \_\_\_\_\_ Date: \_\_\_\_\_

Time started: \_\_\_\_\_ Time finished: \_\_\_\_\_

#### **Instructions:**

- You are required to perform the following:
  - Controlling external bleeding
- Request your teacher for evaluation and feedback

### Operation sheet-3

#### Operation title: -Managing chock

Conditions or situations for the operations	<ul style="list-style-type: none"> <li>The procedure should be performed according to the standard check list</li> </ul>
Procedures	<ol style="list-style-type: none"> <li>Position yourself behind the person and put both of your arms around the upper part of the abdomen. Make sure that he/she is bending forwards.</li> <li>Make a fist with one hand over the person's upper abdomen (between the bellybutton and the breastbone), then grasp the wrist of the fisted hand with the other hand</li> <li>Pull both your hands sharply inwards and upwards. Do this up to five times. This helps you to increase the pressure in the blocked airway in order to dislodge the obstruction.</li> <li>Usually, this will have removed the obstruction:</li> </ol>

	however, if not, repeat the back slapping and abdominal thrust procedures two to three times more.
Precautions	<ul style="list-style-type: none"> <li>Care should be taken while performing abdominal thrust</li> </ul>
Quality criteria	<ul style="list-style-type: none"> <li>Did the trainees followed the steps of chock management?</li> </ul>

### Managing Chock

<b>LAP Test- 3</b>	Practical Demonstration
--------------------	-------------------------

Name: \_\_\_\_\_ Date: \_\_\_\_\_

Time started: \_\_\_\_\_ Time finished: \_\_\_\_\_

#### **Instructions:**

- You are required to perform the following:
  - 1.1. Mange chocking
- Request your teacher for evaluation and feedback





## LG #28

LO#6-Contribute to pre-operative nursing care of a client

### Instruction sheet

This learning guide is developed to provide you the necessary information regarding the following content coverage and topics –

- Collection of pre-operative client health assessment data
- Preparation for specific surgical procedures
- Nursing management of a preoperative client
- Monitoring and reporting actions and side effects of drugs
- Responding to clients recovering from anesthesia
- the relationship between pre-operative care and postoperative complications

This guide will also assist you to attain the learning outcome stated in the cover page. Specifically, upon completion of this Learning Guide, you will be able to –

- Contribute to collection of pre-operative client health assessment data, consent and addressing all relevant factors according to the institution policy
- Preparation for specific surgical procedures is assisted
- Contribute to the nursing management of a preoperative client
- Actions and side effects of drugs are commonly used pre-operatively are monitored and reported
- Respond appropriately to clients recovering from a range of anesthesia used for general, local and epidural/spinal procedures

### Learning Instructions:

1. Read the information written in the “Information Sheets”.
2. If you earned a satisfactory evaluation proceed to next module. However, if your rating is unsatisfactory, see your teacher for further instructions.
3. Practice the steps or procedures as illustrated in the operation sheet. Go to your teacher if you need clarification or you want answers to your questions or you need assistance in understanding a particular step or procedure
4. Do the “LAP test” (if you are ready). Request your teacher to evaluate your performance and outputs. Your teacher will give you feedback and the evaluation will be either satisfactory or unsatisfactory. If unsatisfactory, your teacher shall advise you on additional work. But if satisfactory you can proceed to the next Learning Guide.

## **Information sheet 1- Collection of pre-operative client health assessment data**

### **1.1 Collection of pre-operative client health assessment data**

The nursing process is an integral part of patient care in the perioperative setting and includes performing a nursing assessment. For perioperative nurses, this assessment differs from those performed on the patient in a medical-surgical unit and requires some alterations to the formal nursing process that can challenge new perioperative nurses. One reason for this difference is due to the brief time a perioperative nurse has contact with a conscious patient. This column will provide a synopsis of an efficient, effective perioperative assessment for nurses in the OR, which can also be utilized for many specialties.

#### **Nursing assessment**

As a patient moves through the three phases of the operative process (preoperative, intraoperative, and postoperative), the perioperative nurse must adapt the assessment to the setting. Assessment is the relevant collection of data regarding the surgical patient. This information can be retrieved through various avenues and doesn't need to be repeated through all the phases of the surgical patient's operative process. The concise assessment needs to be relevant to the patient's surgical procedure with adequate information to provide individualized, safe care. With all these concepts in mind, it's apparent the perioperative nurse could benefit from a succinct assessment tool when navigating through the assessment. It should be holistic, reflecting the physiological, psychological, spiritual, and social needs of the patients and the family or the significant others.

#### **Nursing and Health History**

Data gathered during the history help detect problems that may arise preoperatively or post-operatively. The manner in which the history is conducted plays a large part in determining the degree of preoperative and postoperative anxiety the client experience.

The history allows clients to explain their understanding of the impending surgery. This information can be used to determine the client's learning need. The pre-operative history allows the nurse to:

- b. Establish rapport with the client and significant others

- c. Begin a psychosocial assessment of the client; this information is valuable in developing the preoperative and postoperative teaching care plan (e.g. a client who is apprehensive preoperatively may need more frequent or repetitive instruction and more reinforcement than a less anxious client)
- d. Reassure the client and significant others, and answer general questions about the surgery, health care facility, etc.

Specific information that should be obtained during the preoperative history concerns:

- a. previous surgery and experience with anesthesia
- b. responses of family members to previous surgery and anesthesia
- c. whether the client has had any serious illness
- d. previous and current medications (prescription or over-the-counter)
- e. allergies or reactions; dietary restrictions
- f. alcohol, nicotine, or recreational drug use
- g. current manifestations or discomforts
- h. occupation
- i. religious affiliation
- j. Significant others (Is the client single or married? How many dependents does the client have?)
- k. whether the client has any questions about surgery
- l. chronic illnesses (e.g arthritis, migraine, back pain)

## **Lifestyle**

It is generally agreed that the client who smokes or abuses drugs has an increased surgical risk. The client who smokes has reduced hemoglobin levels, and therefore less oxygen available for tissue repair. Smokers may be more susceptible to thrombus formation because of the hypercoagulability of their blood and their increased risk of arteriosclerosis. Smokers are also more likely to have damage to their lung tissue including COPD and chronic bronchitis. Smokers should stop smoking at least a week before elective surgery.

Clients who use alcohol or drugs may experience withdrawal manifestations during hospitalizations. Their surgical course may be complicated by poor nutrition, as well as unpredictable reactions to

anesthetic agents. Remember, even two drinks a day can lead to withdrawal manifestations and the need for increase analgesia and anesthesia.

Clients who live a sedentary lifestyle may have a complicated post-operative course because of poor muscle tone, limited cardiac and respiratory reserve and decreased stress response to the physical demands of surgery.

Clients who are HIV positive have several areas of increased surgical risk. If their immune systems are affected, they are at a much higher risk of developing of a postoperative infection and of being unable to fight infection. If they have develop Pneumocystis Carinii pneumonia, they are at increased risk of anesthetic and postoperative pulmonary complications.

### **Coping**

The clients marital status, significant others, and social support systems should be explored. The client's occupation should also be identified because it may be a source of difficulty after surgery if the client is unable to return to work. It is also important to determine whether the client has insurance or whether this surgery will cause severe financial hardship.

### **Preoperative Physical Examination**

A complete physical examination should be performed, paying special attention to cardiac and respiratory systems. Baseline vital signs are obtained as one determination of the client's risk for postoperative complications.

Any normal vital sign is significant and may cause a postponement of surgery until the problem is treated. Abnormal breath sounds may indicate the need for respiratory therapy both before and after surgery, or the need for bronchodilators. Client with abnormal cardiac findings will need further evaluation to determine whether they can withstand the stress of surgery and anesthesia. Physical examination also should reveal any problems of the joint mobility or deformities that may interfere with operative positioning, as well as the postoperative course. Special consideration of the elderly should include cardiac, respiratory, renal, and musculoskeletal assessment.

### **Implementing Dietary Restrictions**

- The patient is given nothing by mouth (NPO) for 6 to 8 hours before surgery.
- NPO status decreases the risk for aspiration
- Failure to adhere may result in cancellation of surgery or increase the risk of aspiration during or after surgery.

### **Intestinal Preparation**

- Bowel and intestinal preparations are performed to prevent injury to the colon and to reduce the number of intestinal bacteria.
- Enema and/ or laxative may be ordered
- Pre-operative Diagnostic and Screening Test
- Several laboratory exams are needed prior to surgery. These include the following:

### **Laboratory and diagnostic studies**

- Screening tests depend on the condition of the client and the nature of the surgery. If test reveals severe problems the surgery may be cancel until the condition is stabilized.  
Routine screening test-CBC,Blood grouping and X-match, Lytes, fasting blood sugar, BUN & Creatinine, ALT,AST, and bilirubin,Serum albumin, and Total protein, Urinalysis, Chest X-ray,ECG

Test	Normal Range	Purpose
Serum Potassium	3.5-5.0 mEq/L	To identify hyperkalemia or hypokalemia
Serum Sodium	136-145 mEq/L	To identify hypernatremia, hyponatremia, dehydration, overhydration
Serum chloride	96-106 mEq/L	To identify hyperchloremia, hypochloremia, or metabolic alkalosis
Glucose	60-100 mg/dl	To identify hyperglycemia or hypoglycemia
Creatinine	0.7-1.4 mg/dl	To identify acute or chronic renal disease
BUN	10-20 mg/dl	To identify impaired liver or kidney function or excessive protein on tissue catabolism
Hemoglobin	Female: 12-15 mg/dl Male: 13-17mg/dl	To identify the presence and extent of anemia
Hematocrit	Female: 36-45% Male: 39-51 %	To identify the presence and extent of anemia
Prothrombin time	11-18 seconds	To identify dysfunction of blood clotting (prothrombin level)
Partial Thromboplastin Time (PTT)	35-45 seconds	To identify deficiencies of coagulation factors
Chest X-Ray study	No abnormal heart or lung lesions	To determine size and contour of heart, lungs, and major vessels
Electrocardiogram	Normal rate and rhythm	To determine the electrical activities of the heart



## **Analysis / Diagnosis**

The following are the potential nursing diagnoses for the pre-operative patient with its corresponding etiology:

### **1. Knowledge Deficit**

- ✓ lack of familiarity with the perioperative routines
- ✓ fear of the unknown

### **2. Anxiety**

- ✓ fear of the unknown
- ✓ fear of pain
- ✓ cost of care, lack of insurance
- ✓ body image changes
- ✓ change in health status

### **3. Risk for ineffective airway clearance**

- ✓ Anesthesia, sedation, pooled secretions, surgical procedures, immobility, decreased coughing reflex

### **4. Risk for inadequate tissue perfusion**

- ✓ venous stasis, increased coagulability of blood immobility

## **Information sheet 2- Preparation for specific surgical procedures**

### **2.1 Physiological/ Spiritual preparation for surgery**

Clients respond differently to fear. Some respond by becoming silent and withdrawn, childish, belligerent, evasive, tearful, or clinging. Most clients feel helpless when admitted to a healthcare facility. We need to remember that although surgery may be commonplace for the healthcare professional, it is a frightening experience for the client. Based on the Nursing Assessment, the following interventions may be appropriate for the preoperative client:

- i. Provide explanations and printed information about the healthcare facility routines, visiting hours, mealtime, the location of the chapel and waiting room, and so forth.
- ii. Explain the procedures involved in the planned surgery to allay the client's anxiety. The client should have a complete idea of what the preoperative, intraoperative, and post-operative course entails. Consult with the physician before speaking to the client about specific or technical details.
- iii. Explain all Nursing care and all possible discomfort that may result as a consequence of Nursing interventions. Also, tell the client what you will do to minimize any discomfort. Take time to clarify any misconceptions or incorrect information.
- iv. Allow client to take the lead in asking questions concerning surgery and the post-operative period. Provide only as much additional information as the client wants to know. If the client is withdrawn, depressed, or apprehensive, use your communication skills to encourage expression of fears and concerns.
- v. If possible, introduce the client and family to others who have successfully undergone similar surgery. If not possible preoperatively, this may be done after the surgery.
- vi. Find out the client's religious preference and arrange for a visit from a clergy, if the client so desires.
- vii. Include the client's significant others in preoperative discussions whenever possible.

### **2.2 Informed Consent**

The informed consent is a legal document that should be presented to anyone undergoing any invasive procedures. This signifies the client's consent for the procedure and guards the client

against unwanted procedures. It also protects the healthcare facility and healthcare professionals. Before the informed consent is signed, proper explanation should be given by the surgeon or the anesthesiologist to the patient and significant others.

If the consent is made voluntarily by the patient, he/she should be mentally capable. In cases where the patient is mentally incompetent, the family members can give consent in behalf of the patient. In minors (less than 21 years old) consent from is required. However, in cases where the patient needs immediate surgery acquiring consent through the phone done as long as another member of the health care team witnesses the conversation. When minor's relatives cannot be located, a court order may be needed to permit surgery, depending on the law.

As a perioperative nurse, always make sure informed consent accompanies the record to the operating room. If oral consent was obtained, be sure that this is completely documented in the appropriate place in the client's record.

### **3.3 Preoperative patient education**

- Teaching clients about their surgical procedure and expectations before and after surgery is best done during the preoperative period.
- Clients are more alert and free of pain at this time.
- Clients and family members can better participate in recovery if they know what to expect.
- The nurse adapts instructions and expectations to the client's ability to understand.
- Information in a preoperative teaching plan varies with the type of surgery and the length of the hospitalization.
- Preoperative medication- when they are given and their effects.
- Post operative pain control.
- Explanation and description of the post anesthesia recovery room or post surgical area.
- Discussion of the frequency of assessing vital signs and use of monitoring equipment.
- Explanation and demonstration deep breathing and coughing exercises, use of incentive spirometry, how to support the incision for breathing exercises and moving, position changes, and feet and leg exercises.

- The education plan should begin with assessment, including baseline knowledge of the patient and family, readiness to learn, barriers to learning, patient and family concern and learning styles and preferences.
- The content focuses on information that will increase patient's familiarity with procedural events. This includes surgical experience (procedural), what the pt. may experience (sensory) and what actions may help decrease anxiety (behavioral).
- Information about intravenous (IV) fluids and other lines and tubes such as nasogastric tubes.
- Preoperative teaching time also gives the client the chance to express any anxieties and fears and for the nurse to provide explanations that will help alleviate those fears.
- When clients are admitted for emergency surgery, time for explanation is unavailable; explanations will be more complete during the postoperative period.

### **3.4 Deep Breathing Exercise**

Breathing and coughing exercises help expand collapsed lungs and prevent postoperative pneumonia and atelectasis. Deep breathing is done as follows:

- i. Sit on the edge of the bed or lie supine, with knees flexed to relax the abdominal musculature (the client may lie on either side if lying on the back is impossible)
- ii. Place hands on the abdomen
- iii. Inhale through the nose until the abdomen balloons outward.
- iv. Exhale through pursed lips while contracting the abdominal muscles

Instruct client to use this breathing method as often as possible, preferably 5 to 10 times every hour during the post-operative period of immobilization.

### **3.5 Diaphragmatic Breathing**

- High or semi-fowler's position
- Place hands lightly on the abdomen
- Inspire deeply while allowing the abdomen to expand outward.
- Hold breath for a count of 5
- Exhale completed through pursed lips, allowing the cheeks and abdomen to deflate
- On expiration, the abdomen contracts inward as air from the lungs is expelled

- Repeat 5 times consecutively – **slowly**
- **Perform q1-2 hours while awake**



Fig. Diaphragmatic Breathing Exercises

### 3.6 Coughing Exercises

**Purpose:** to loosen, mobilize, and remove pulmonary secretions

- Splinting the incision decreases the physical and psychologic discomfort associated with coughing
- Diaphragmatic breathing
- Splint the incision with interlocked hand or pillow
- Three deep breaths and then cough forcefully
- Repeat **5 x q2h** while awake with rest periods
- The client may be on a sitting or lying position.
- Show the client how to splint the incision (this controls pain when the client is coughing).
- Instruct client to lace the fingers and hold them tightly across the incision before coughing.
- A small pillow or folded towel held over the incision also facilitates splinting.
- When doing coughing exercise, have the client take a deep breath, exhaling through the mouth, before coughing from deep in the lungs.
- Encourage the client to perform deep breathing exercises before coughing, to stimulate the cough reflex.
- Aside from deep breathing and coughing exercises, incentive spirometers are also used to promote lung expansion.
- Incentive spirometer exercise should be done 10 times an hour after surgery.



Fig 3 coughing exercise

### **3.7Turning**

The client also needs to practice turning from side to side, using the side rails to assist movements. Turning helps to prevent venous stasis, thrombophlebitis, decubitus ulcer formation, and respiratory complications. Turn every 1 to 2 hours during post-op period.

### **3.8Extremity Exercise**

In extremity exercises, let the client do the following:

- i. Ask the client to flex and extend each joint, particularly the hip, knee, and ankle joints, keeping the lower back flat as the leg is lowered and straightened.
- ii. Have the client move each foot in a circular motion. These exercises help prevent circulatory problems, such as thrombophlebitis, by facilitating venous return to the heart.
- iii. Antiembolism stockings may be used on the lower extremities preoperatively, intraoperatively, and post-operatively, combines with turning and leg exercises to prevent thrombophlebitis or thromboembolism

### **3.9Early Ambulation**

Early ambulation is important to increase circulation of the surgical area thus, promoting faster healing of the post-operative wound. When ambulating the client, do not let the patient stand up immediately. Instead, let the patient progress slowly from a semi-fowler's position, then fowler's

position, then sit on bed first and dangle the legs. Assess the vital signs and for any signs of intolerance. If the patient does not show any signs of dizziness, you may proceed with ambulation.

### **3.11 Preoperative pain management**

- Pain Assessment – 5<sup>th</sup> Vital Sign
- Instruct in use of pain intensity rating scale
- Initial postoperative period
- Patient Controlled Analgesia
- Patient Controlled Epidural Analgesia
- Medication prescribed IV/IM at prescribed time
- Other therapies: Positioning, back rubs, ice, elevation
- Progress to oral analgesic agents 2<sup>nd</sup> or 3<sup>rd</sup> postop day or Ambulatory Surgery

### **3.12 Physical Preparation**

#### **a. Night Prior to Surgery**

- Pre-op client will rest more completely on the night before surgery if he or she is physically comfortable, mentally at ease, and adequately sedated.
- Measures to reduce pre-operative sleeplessness and restlessness include a well-ventilated room, a comfortable clean bed, a back rub, and a warm beverage (if fluids are not contraindicated).
- With same day surgery, the client may be at home the night before surgery and may have to get up early to get to the hospital for surgery.
- Encourage apprehensive clients to take ordered sleep medications the night before surgery to help them to sleep.
- Always remember to talk in a positive manner with the client as you give preoperative care and listen to any doubts or fears the client may have concerning surgery.



## **b. Day of Surgery**

- Immediate pre-op preparation begins at least 1 to 2 hours before surgery for clients in the hospital and as soon as same day admission clients enter the hospital.
- At this time, the nurse asks whether client has any questions or concerns. Continue to assess for manifestations of anxiety.
- Communicate any surgical delays to the client and significant others.

### **3.13 Promoting safety during surgery**

One way to help promote safety during surgery is to carefully review the pre-operative checklist. The preoperative checklist is a list of all the things that needs to be done or prepared before the client is transferred to the operating table. The perioperative nurse should make sure that all items in the checklist have been accurately carried out. The checklist may vary per institution but the standard contents consist of the following:

- i. Vital Signs
- ii. Informed consent
- iii. Laboratory results
- iv. Blood ordered
- v. Allergies
- vi. Pre-op meds ordered by anesthesiologist
- vii. Check the identification band
- viii. Check if skip prep has been completed (if ordered)
- ix. Verify that the client has not eaten for the last 8 hours.
- x. Check the fluids have been restricted, although sometimes physician will order clients to take their usual oral medications (ex. Digoxin) with a small sip of water.

- **Immediate preoperative nursing intervention:**

- \* Administering preanesthetic medication.
- \* Maintaining the preoperative record. e.g. Final checklist, consent form, identification

Before the operation, always ask the client to void and measure and record the amount of urine. Also, dentures or bridgework should be removed since these could obstruct the airway if left in place. It is also important to have the client remove jewelries, which are potential sources of microbes. If the client is wearing hearing aid, notify the operating room nurse. Leave it in place so that OR personnel know it is there and can communicate with the client.

In order to accurately assess capillary refill, remove colored nail polish. Remove make-up so skin can be observed for pallor due to blood loss. And lastly, assist the client in donning a hospital gown, protective cap, etc.

### ***Preanesthesia Management Physical Status Categories***

#### ***American society of anesthesiologists/ ASA/***

- ASA 1: Healthy patient with no disease
- ASA 11: Mild systemic ds without fx limitations
- ASA 111: Severe systemic ds associated with definite fx limitations
- ASA 1V: Severe systemic ds that is a constant threat to life.
- ASA V: Moribund pt. Who is not expected to survive without the operation.
- ASA V1: A declared brain-death whose organ are being recovered for donor.

### 3.6 Emergency

#### **Important Things to Consider Preoperatively**

- Stop ASA 7-10 days before surgery
- Stop herbals 2-3 weeks before surgery
- Encourage no smoking for 4-8 weeks before surgery; stop smoking at least 24 hours before surgery
- Monitor immunocompromised patient closely for s/s of infection before surgery
- Surgery contraindicated if acute renal problems

- Control hypertension prior to surgery if possible
- Obesity increases risk and severity of complications

Self-Check 1	Written Test
--------------	--------------

Name: \_\_\_\_\_ Date: \_\_\_\_\_

Time started: \_\_\_\_\_ Time finished: \_\_\_\_\_

**Instructions: Multiple Choice:** Encircle the letter of your answer.

- It is a legal document that should be presented to anyone undergoing any invasive procedures.
  - marriage consent
  - informed consent
  - parent's consent
  - manager's consent
- It is a recommended exercise that helps expand collapsed lungs and prevent postoperative pneumonia and atelectasis.
  - pelvic rocking
  - knee- chest
  - deep breathing
  - indian squatting
- One way to help promote safety during surgery is to carefully review the pre-operative checklist. Which is not belonged to the checklist?
  - Vital Sign
  - Allergies
  - Verify that the client has not eaten for the last 8 hours.
  - checking for profuse bleeding
- The client also needs to practice turning from side to side, using the side rails to assist movements. Turning helps to prevent except:
  - cyanosis
  - thrombophlebitis
  - decubitus ulcer formation
  - venous stasis
- The following are the potential nursing diagnoses for the pre-operative patient with its corresponding etiology, except:
  - Knowledge Deficit
  - Risk for ineffective airway clearance
  - Anxiety
  - impaired physical mobility

6. In assessing the client preoperatively, which of the following statements by the client requires further follow-up?
- A "I usually skip breakfast, so I will not be hungry before surgery."
  - B "I started taking a multivitamin last week."
  - C "I have been using several different herbs for my health over the past year."
  - D "I usually work out three times per week."
7. The nurse reports which of the following electrolyte laboratory results immediately to the anesthesiologist?
- A. Potassium 3.9 mEq/L
  - B. Sodium 140 mEq/L
  - C. Fasting glucose 80 mg/dL
  - D. Creatinine 1.9 mg/dL
8. In preparing a client for gastrointestinal surgery, the nurse explains the reason for the bowel prep is to:
- A. Eliminate any risk of infection
  - B. Reduce bacteria that is normally found in the bowel
  - C. Ensure the bowel is sterile
  - D. Decrease expected blood loss during surgery
9. In teaching the client with planned surgery using general anesthesia, it is a priority for the nurse to include which statement in the preoperative teaching?
- A. "You may wake up with a tube in your throat to help you breathe."
  - B. "Your surgery will last about 2 hours."
  - C. "Your family will be allowed to visit you in the operating room."
  - D. "We will not be able to give you pain medications until you are fully awake."
10. The nurse includes which of the following statements for a client undergoing general anesthesia?
- A. "You will be able to talk with the surgeon during the procedure."
  - B. "You will have a breathing tube in your throat during the Procedure."
  - C. "Your family will need to stay in the waiting room in order to talk with the surgeon."
  - D. "No information can be given to your family until you are fully awake in the PACU."
11. The nurse's role in informed consent includes which of the following?
- A. Taking the client on a tour of the operating room
  - B. Teaching the client about the planned procedure
  - C. Witnessing the operative consent
  - D. Ensuring the client talks with the primary surgeon before the procedure

**Note: Satisfactory rating - 6 points**

**Unsatisfactory –6 & below points**

You can ask your teacher for the copy of the correct answers.

### Information sheet 3- Nursing management of a preoperative client

#### Surgical Settings

Surgery may be a carefully planned event (**elective surgery**) or may arise with unexpected urgency (**emergency surgery**). Both elective and emergency surgery may be performed in a variety of settings. The setting in which a surgical procedure may be safely and effectively performed is influenced by the type of surgery, potential complications, and the patient's general health status.

For inpatient surgery, patients who are going to be admitted to the hospital are usually admitted on the day of surgery (**same-day admission**). Patients who are in the hospital before surgery are usually there because of acute or chronic medical conditions.

The majority of surgical procedures are performed as **ambulatory surgery** (also called **same-day** or **outpatient surgery**). Many of these surgeries use minimally invasive techniques (e.g., laparoscopic techniques). (The surgeries are described in chapters throughout the text in discussions of interventions for specific problems.) Ambulatory surgery may be conducted in endoscopy clinics, physicians' offices, freestanding surgical clinics, and outpatient surgery units in hospitals. These procedures can be performed using general, regional, or local anesthetic; have an operating time of less than 2 hours; and require less than a 24-hour stay postoperatively. Many patients go home with a caregiver within hours of surgery.

Ambulatory surgery is often preferred by patients and physicians. Generally, it involves minimal laboratory tests, requires fewer preoperative and postoperative medications, and reduces the patient's risk for health care–associated infections. Patients like the convenience of recovering at home, physicians prefer the flexibility in scheduling, and the cost is usually less for both the patient and the insurer.

Regardless of where the surgery is performed, you play an essential role in preparing the patient for surgery, caring for the patient during surgery, and facilitating the patient's recovery after surgery. To perform these functions effectively, first know the nature of the disorder requiring surgery and any coexisting medical problems. Second, identify the individual patient's response to the stress of surgery. Third, know the results of appropriate preoperative diagnostic tests. Finally, identify potential risks and complications associated with the surgical procedure and any coexisting medical problems that should be included in the plan of care. The nurse caring for the patient preoperatively is likely to be different from the nurse in the operating room (OR), postanesthesia care unit (PACU),

surgical intensive care unit (SICU), or surgical unit. Thus communication and documentation of important preoperative assessment findings are essential for the continuity of care.

### **Patient Interview**

One of the most important nursing actions is the preoperative interview. The nurse who works in the physician's office, the ambulatory surgery center, or the hospital preoperative area may do the interview. The site of the interview and the time before surgery dictate the depth and completeness of the interview. Important findings must be documented and communicated to others to maintain continuity of care.

The preoperative interview can occur in advance or on the day of surgery. The primary purposes of the patient interview are to (1) obtain the patient's health information; (2) provide and clarify information about the planned surgery, including anesthesia; and (3) assess the patient's emotional state and readiness for surgery, including his or her expectations about the surgical outcomes. Ensure that the patient's consent form for surgery has been signed and witnessed and that the appropriate laboratory and diagnostic tests have been ordered or completed.

The interview also provides the patient and the caregiver an opportunity to ask questions about surgery, anesthesia, and postoperative care. Often patients ask about taking their routine medications, such as insulin, anticoagulants, or cardiac medications, and if they will experience pain. By being aware of the patient's and caregiver's needs, you can provide the information and support needed during the perioperative period.

## **Nursing Assessment of Preoperative Patient**

The overall goal of the preoperative assessment is to identify risk factors and plan care to ensure patient safety throughout the surgical experience. Goals of the assessment are to

- Determine the patient's psychologic status in order to reinforce the use of coping strategies during the surgical experience.
- Determine physiologic factors directly or indirectly related to the surgical procedure that may contribute to operative risk factors.
- Establish baseline data for comparison in the intraoperative and postoperative period.
- Participate in the identification and documentation of the surgical site and/or side (of body) on which the surgical procedure will be performed.
- Identify prescription drugs, over-the-counter medications, and herbal supplements taken by the patient that may result in drug interactions affecting the surgical outcome.
- Document the results of all preoperative laboratory and diagnostic tests in the patient's record, and communicate this information to appropriate health care providers.
- Identify cultural and ethnic factors that may affect the surgical experience.
- Determine if the patient has received adequate information from the surgeon to make an informed decision to have surgery and that the consent form is signed and witnessed.

### **Psychosocial Assessment.**

#### **Subjective Data**

Surgery is a stressful event, even when the procedure is considered minor. The psychologic and physiologic reactions to surgery and anesthesia may elicit the stress response (e.g., elevated blood pressure [BP] and heart rate). The stress response enables the body to prepare to meet the demands in the perioperative period. If stressors or the responses to the stressors are excessive, the stress response can be magnified and may affect recovery. Many factors influence the patient's susceptibility to stress, including age, past experiences with illness and pain, current health, and socioeconomic status. Identifying a patient's perceived or actual stressors allows you to provide support during the preoperative period so that stress does not become distress.



The use of common language and avoidance of medical jargon are essential. Use words and language that are familiar to the patient to increase the patient's understanding of surgical consent and the surgery. Familiar language also helps reduce preoperative anxiety.

Your role in psychologically preparing the patient for surgery is to assess the patient for potential stressors that could negatively affect surgery (Table 18-2). Communicate all concerns to the appropriate surgical team member, especially if the concern requires intervention later in the surgical experience. Because many patients are admitted directly into the preoperative area from their homes, you must be skilled in assessing important psychologic factors in a short time. The most common psychologic factors are anxiety, fear, and hope.

### **Anxiety.**

Most people are anxious when facing surgery because of the unknown. This is normal and is an inborn survival mechanism. However, if the anxiety level is high, cognition, decision making, and coping abilities are reduced.

Anxiety can arise from lack of knowledge, which may range from not knowing what to expect during surgery to uncertainty about the outcome. This may be a result of past experiences or stories heard through friends or the media. You can decrease some anxiety for the patient by providing information about what to expect. This is often done through classes, or web-based or audiovisual educational materials before surgery. Inform the surgeon if the patient requires any additional information or if anxiety is excessive.

The patient may experience anxiety when surgery is in conflict with his or her religious and cultural beliefs. In particular, identify, document, and communicate the patient's religious and cultural beliefs about the possibility of blood transfusions. For example, Jehovah's Witnesses may choose to refuse blood or blood products.

### **Common Fears.**

Patients fear surgery for a number of reasons. The most common fear is the risk of death or permanent disability resulting from surgery. Sometimes the fear arises after hearing or reading about the risks during the informed consent process. Other fears are related to pain, change in body image, or results of diagnostic procedures.

***Fear of death*** can be extremely harmful. Notify the physician if the patient has a strong fear of death. A patient's strong fear of impending death may prompt the physician to delay the surgery until the situation improves because the emotional state influences the stress response, and thus the surgical outcome.

***Fear of pain and discomfort*** during and after surgery is common. If the fear is extreme, notify the ACP or the surgeon. Reassure the patient that drugs are available for both anesthesia and analgesia during surgery. For pain after surgery, tell patients to ask for pain medication before pain becomes severe. Instruct the patient on the use of a pain intensity scale.

Drugs may also be given that provide an amnesic effect so the patient will not remember what occurs during surgery. Tell the patient that this effect assists in decreasing anxiety after surgery.

***Fear of mutilation or alteration in body image*** can occur whether the surgery is radical, such as amputation, or minor, such as a bunion repair. Even a small scar on the body can be upsetting to some, and others fear keloid development (overgrowth of a scar). Listen to and assess the patient's concern about this fear with an accepting attitude.

***Fear of anesthesia*** may arise from the unknown, personal experience, or tales of others' bad experiences. These concerns can also result from information about the risks (e.g., brain damage, paralysis) of anesthesia. Many patients fear losing control while under anesthesia. If these fears are identified, inform the ACP immediately so that he or she can talk further with the patient. Reassure the patient that a nurse and the ACP will be present at all times during surgery.

***Fear of disruption of life functioning*** may be present in varying degrees. It can range from fear of permanent disability to concern about not being able to engage in activities of daily living for a few weeks. Concerns about loss of role function, separation from family, and how the family will manage may be revealed. Financial concerns may be related to an anticipated loss of income or the costs of surgery.

If you identify any of these fears, a consult with the patient's caregiver, a social worker, a spiritual or cultural advisor, or a psychologist may be appropriate. Financial advisors at the hospital may be able to provide information about financial support.

### ***Past Health History***

Ask the patient about any previous medical problems and surgeries. Determine if the patient understands the need for surgery. For example, the patient scheduled for a total knee replacement may indicate that increasing pain and immobility are the reasons for the surgery.

Document the reason for any past hospitalizations, including previous surgeries and the dates. Also identify any problems with previous surgeries. For example, the patient may have experienced a wound infection or a reaction to a medication.

Ask women about their menstrual and obstetric history. This includes the date of their last menstrual period, the number of pregnancies, and any history of cesarean section.

When obtaining a family health history, ask both patient and caregiver about any inherited traits, since they may contribute to the surgical outcome. Record any family history of cardiac and endocrine diseases. For example, if a patient reports a parent with hypertension, sudden cardiac death, or myocardial infarction, this should alert you to the possibility that the patient may have a similar predisposition or condition. Also obtain information about the patient's family history of adverse reactions to or problems with anesthesia. For example, malignant hyperthermia has a genetic predisposition. Measures to decrease complications associated with this condition can be taken. (For further information on malignant hyperthermia, see Chapter 19.)

### ***Medications***

Document all current routine and intermittent medication use, including over-the-counter drugs and herbal supplements. In many ambulatory surgery centers, patients are asked to bring their medications with them when reporting for surgery. This helps to accurately assess and document both the name and the dosage of medications.

The interaction of the patient's current medications and anesthetics can increase or decrease the desired physiologic effect of anesthetics. Consider the effects of opioids and prescribed medications for chronic health conditions (e.g., heart disease, hypertension, depression, epilepsy, diabetes mellitus). For example, certain antidepressants can potentiate the effect of opioids, agents that can be used for anesthesia. Antihypertensive drugs may predispose the patient to shock from the combined effect of the drug and the vasodilator effect of some anesthetic agents. Insulin or oral

hypoglycemic agents may require dose or agent adjustments during the perioperative period because of increased body metabolism, decreased oral intake, stress, and anesthesia. Antiplatelet drugs (e.g., aspirin, clopidogrel [Plavix]) and nonsteroidal antiinflammatory drugs (NSAIDs) inhibit platelet aggregation and may contribute to postoperative bleeding. Surgeons may instruct patients to withhold these medications before surgery. Specific timeframes for withholding drugs depend on the drug and the patient. Patients on long-term anticoagulation therapy (e.g., warfarin [Coumadin]) present a unique challenge. The options for these patients include (1) continuing therapy, (2) withholding therapy for a time before and after surgery, or (3) withholding the therapy and starting subcutaneous or IV heparin therapy during the perioperative period. The management strategy selected is determined by patient characteristics and the nature of the surgery.

Ask about the use of herbs and dietary supplements because their use is so common. Many patients do not think to include supplements in their list of medications. They believe that herbal and dietary supplements are “natural” and do not pose a surgical risk.<sup>4</sup> (See the Complementary & Alternative Therapies box in [Chapter 3](#) on p. 39 on how to assess for the use of herbal supplements.) Excessive use of vitamins and herbs can cause harmful effects in patients undergoing surgery. In patients taking anticoagulants or antiplatelets, herbal supplements can produce excessive postoperative bleeding that may require a return to the OR.<sup>5</sup> The effects of specific herbs that are of concern during the perioperative period are listed below in the Complementary & Alternative Therapies box.

### **Allergies**

Question the patient about drug intolerances and drug allergies. Drug intolerance usually results in side effects that are uncomfortable or unpleasant for the patient but are not life threatening. These effects can include nausea, constipation, diarrhea, or **idiosyncratic** (opposite than expected) reactions. A true drug allergy produces hives and/or an anaphylactic reaction, causing cardiopulmonary compromise (e.g., hypotension, tachycardia, bronchospasm). Being aware of drug intolerances and drug allergies aids the health care team to maintain patient comfort and safety. For example, some anesthetic agents contain sulfur, so notify the ACP if a history of allergy to sulfur is reported. Document all drug intolerances and drug allergies and, if appropriate, place an allergy identification band on the patient on the day of surgery.

Also inquire about nondrug allergies, specifically food and environmental (e.g., latex, pollen, animals) allergies. The patient with a history of any allergic reactions has a greater potential for hypersensitivity reactions to drugs given during anesthesia. Patients need to be screened specifically for latex allergies by gathering data in the following areas:

- Risk factors
- Contact dermatitis
- Contact urticaria (e.g., hives)
- Aerosol reactions
- History of reactions that suggest an allergy to latex

Risk factors for latex allergy include long-term, multiple exposures to latex products, such as those experienced by health care and rubber industry workers. Additional risk factors include a history of hay fever, asthma, and allergies to certain foods (e.g., eggs, avocados, bananas, chestnuts, potatoes, peaches).

### ***Review of Systems***

The last component of the patient history is the body systems review. Ask specific questions to confirm the presence or absence of any diseases. Current medical problems can alert you to areas that should be more closely examined in the preoperative physical examination. The combined review of systems and the patient history provide essential data to determine the specific preoperative tests that need to be ordered.

- Cardiovascular System
- Genitourinary System
- Hepatic System
- Respiratory System
- Integumentary System
- Endocrine System

#### **Information sheet 4 Monitoring and reporting actions and side effects of drugs**

Routinely used medications have many potential interactions with drugs used during surgery, but few situations prohibit concurrent administration. The half-life of routinely used medications and adjustment of the dose according to the perioperative schedule must be considered. Many medications must be continued through the perioperative period, with the last dose taken with a sip of clear liquid up to 2 hours prior to the procedure, and resumed during recovery.

Other drugs must be stopped, replaced, or temporarily administered by another route. Obtain advice on selecting alternative treatments from clinical or drug information pharmacists. Additional monitoring of the patient or plasma drug concentrations may be required when different treatments or formulations are used perioperatively. Heightened awareness and diligent documentation of patient medications from admission to discharge can reduce serious problems in the perioperative management of society's increasingly elderly and frail population.

The perioperative period extends from the preoperative day through the operation and into the postoperative recovery. Proper perioperative management helps to prevent or minimize complications, to reduce postoperative pain, and to accelerate recovery. The components of perioperative medication management are as follows:

- Accurate documentation of preoperative medication
- Established decisions on stopping medications prior to surgery
- Monitoring of appropriate chemistry study results to determine dosages and the occurrence of adverse effects
- Appropriate management of pain
- Administration of adjunctive medications
- Use of appropriate formulations and alternative products when needed
- Review of discharge medications to ensure discontinuation of surgery-specific drugs (eg, anticoagulants, analgesics) to avoid polypharmacy

Some drugs (eg, beta-blockers) have potential adverse effects when discontinued abruptly and should be given parenterally in the perioperative period. Switching to an alternative formulation of the same drug may involve a change in dose due to differing bioavailability of the active drug.

Kluger et al showed that 44% of surgical patients took medications prior to surgery, with an average of 2.1 drugs per patient.<sup>[1]</sup> Cardiac medications accounted for the largest proportion of prescriptions (41%). Almost

50% of the drugs were omitted on the day of surgery, while on the first day after the operation, 33% of the medications were withheld. The reasons for this pattern included the following:

- Fasting (49%)
- Failure of the admitting doctor to prescribe (29%)
- Drug withheld on order of medical staff (10%)
- Drug unavailable in pharmacy or not delivered to the ward (1%)
- Gastrointestinal tract operation with prolonged ileus (3%)
- Unknown (8%)

Overnight fasting reduces the risk for aspiration of stomach contents when the patient is placed under general anesthesia. However, liquids are cleared from the stomach within 2 hours of ingestion, and no differences in the volume or pH of gastric contents is noted in those patients taking clear fluids 2 hours before surgery compared to those taking clear fluids 9 hours before surgery. Therefore, patients can be given their routine medications with sips of water up to 2 hours before anesthesia.

## **Information sheet 5 Responding to clients recovering from anesthesia**

### **Immediate Care in Post-Anesthesia Care Unit (PACU)**

Immediate Post Anesthesia Care begins when the client has been transferred from the operating room to the PACU. The PACU is usually located adjacent to the operating rooms. The basic design consists of a large open room divided into individual patient care spaces. The Registered nurses in the PACU have an in-depth knowledge of anesthetic agents and patient responses to these agents, pain management techniques, surgical procedures, and potential complications. The circulating nurse informs the PACU of the patient's estimated time of arrival in the unit and also of any special care needs or equipment required. A report is given when the patient is admitted to the unit, The PACU Nurse's responsibilities include the following:

#### **1. Maintaining pulmonary ventilation**

Ensure that the airway is patent. All clients receive oxygen, usually at the rate of 60 % / 6L, although clients with COPD will receive no more than 20% / 2L. In the immediate post-operative period, the head of a minimally responsive client may be turned to the side and the head extended forward to prevent respiratory obstruction. The client who is unable to clear mucus or vomits from the throat requires suctioning immediately. Some clients are intubated and ventilated. They require close monitoring and suctioning as needed.

#### **Manifestations of pulmonary complications include:**

- Increase temperature
- Restlessness
- Dyspnea
- Tachycardia
- Hemoptysis
- Pulmonary edema
- Altered breath sounds
- Thick viscous sputum (with chest pain, if the client has pneumonia),
- Pulmonary problem typically develop in the first 18 hours after surgery.

#### **2. Maintenance of circulation**



Common cardiovascular complications include arrhythmias, hypertension and hypotension resulting in shock. When assessing a client for post-op cardiovascular complications remember that a slight increase in a client's heart rate after surgery may be normal. However, a significant increase or decrease from baseline or the development of new dysrhythmias requires observation.

When a client appears to be **going into shock**, the PACU nurse:

- I. Applies oxygen or increase the rate of delivery
- II. Raises the client's legs above the level of the heart.
- III. Increases the rate of IV fluids unless contraindicated.
- IV. Notifies the anesthesia provided and surgeon.
- V. Administers medication or additional fluid volume as ordered and
- VI. Continues assessment on a one-to-one basis

### **3. Promotion of Comfort**

Being comfortable and free from pain enables a client to progress more quickly and more easily through the post-op period.

Factors related to high incidence and intensity of post-operative pain include the type of anesthesia used, high levels of anxiety, extensive and prolonged surgical procedures, and poor state of mental health.

#### **Nursing measures that help alleviate pain include the following:**

- i. Comfort measures, such as changing the client's position, straightening bed linen, giving a back rub and lotion, and applying a cool cloth to the hands and face.  
Administration of narcotics, such as morphine, meperidine, and codeine; narcotics are used primarily during the first 24 to 72 hours after surgery.

#### **4. Protection from Injury**

Place great emphasis on patient's safety until the patient is fully awake, or has complete return of sensation after regional blocks. The unconscious patient must be protected from falling and injury as a result of improper positioning. Side rails should be maintained in the upright position. The patient call light should be within close reach and interventions to prevent falls should be implemented.

LG#29	LO#7 manage medical and surgical related disorders
-------	--

Instruction sheet	
<p>This learning guide is developed to provide you the necessary information regarding the following content coverage and topics –</p> <ul style="list-style-type: none"> <li>• Skin disorders</li> <li>• Musculoskeletal disorders</li> <li>• Respiratory disorders</li> <li>• Cardiac disorders</li> <li>• Vascular disorders</li> <li>• Gastro -intestinal system disorder <ul style="list-style-type: none"> <li>✓ Esophageal disorders</li> <li>✓ Gastric and duodenal disorder</li> <li>✓ Intestinal disorder</li> <li>✓ Ano-rectal disorder</li> <li>✓ Pancreatic, hepatic and biliary disorder</li> </ul> </li> <li>• Endocrine disorder</li> <li>• Genito-urinary system problems</li> <li>• Ear, eye, nose and throat disorders.</li> <li>• Neurological disorders</li> </ul> <p>This guide will also assist you to attain the learning outcome stated in the cover page. Specifically, upon completion of this Learning Guide, you will be able to –</p> <ul style="list-style-type: none"> <li>• Manage medical and surgical related disorders</li> <li>• Apply Nursing intervention for medical and surgical disorders by using appropriate equipment according to health organization policies and procedures.</li> </ul>	
<b>Learning Instructions:</b>	

1. Read the information written in the “Information Sheets”.
2. If you earned a satisfactory evaluation proceed to next module. However,if your rating is unsatisfactory, see your teacher for further instructions.
3. Practice the steps or procedures as illustrated in the operation sheet. Go to your teacher if you need clarification or you want answers to your questions or you need assistance in understanding a particular step or procedure
4. Do the “LAP test” (if you are ready). Request your teacher to evaluate your performance and outputs.Your teacher will give you feedback and the evaluation will be either satisfactory or unsatisfactory. If unsatisfactory, your teacher shall advice you on additional work.But if satisfactory you can proceed to the next Learning Guide.

## Information sheet 1 skin disorder

### 1.1 CARING FOR A PATIENT WITH SKIN DISORDER

#### A. Brief review of anatomy and physiology of integumentary system

Integumentary system is composed of the skin and its appendages (hair, nails and glands).

**Skin:-** is the largest organ of the body. The skin is further divided into 3 layers:-

i **Epidermis:-** is the thinnest (0.06 – 0.1 mm depending on area) & avascular outer most layer

Has 2 types of cells;

**A. Melanocytes (5%):-** produce melanin and it is 15% sensitive to ultra violet (sun light).

**B. Keratinocytes (25%):-** produce a specialized protein (keratin) which is vital to the protective barrier function of the skin.

ii **Dermis:-** is the inner most layer

✓ Thickness is about 1-4 mm

✓ Rich in vascular, lymphatic and nerves

✓ Provides the skin with substance (nutrient) necessary for growth and repair and reduce environmental stress and strain.

iii **Hypodermis (subcutaneous tissue):-** is the third layer which attaches the underlying muscles & bone. This layer is used to regulate body temperature & Good insulator of heat

#### Function of the skin:-

i **Protection:-** the intact skin protects the body from physical and chemical injury because the skin is a mechanical barrier for the underlying tissues and internal organs from external environment (mechanical trauma and bacterial invasion).

ii **Fluid and electrolyte balance:-** the skin can regulate body fluid and electrolyte by preventing excessive loss or retain of water and electrolyte. Such as increasing or decreasing profuse sweating depending on the body's demand.

iii **Sensory function:-** the skin is the major receptor for general sensation by transport information to the brain such as pain, touch pressure and temperature

iv **Thermoregulation:-** skin can regulate body Temp by vasodilatation & constriction effect.

- v **Synthesis of vitamin D:** - the skin synthesizes V-D which is necessary for efficient absorption of calcium and phosphorus.

### **Excretion and facial expression.**

**Factors affecting the health of a skin:-** Normal skin viability depends on blood flow, nutrient supply, personal hygiene, knowledge and the integrity of the epidermis.

1. **Circulation:** - adequate blood flow to the skin is necessary for healthy viable tissues.
2. **Nutrition:** - a well balanced diet promotes healthy skin both Proteins, calories and vitamins (A, B<sub>6</sub>, C, K, Niacin and Riboflavin) are important to prevent abnormal skin changes.
3. **Life style and Habits;** - lack of cleanliness can hinder skin health. Washing removes debris, bacteria, sweat and keeps pores open.
4. **Knowledge:** - the patient's understanding of skin care can affect the health of the skin.
5. **Condition of epidermis:** - integrity of the epidermis prevents bacteria from entering the skin.
6. **Age related changes:** - skin changes during the life span with the greatest variations occurring in the very young and the elderly.

The skin changes may also result from environmental changes such as

- ✓ Heat and cold
- ✓ Sun light and lack of moisture
- ✓ From systemic & skin disorders

### **1.2 ASSESSING CLIENT WITH SKIN PROBLEM**

When caring for pts with dermatological disorder, the nurse obtains important information through:-

- i. History
- ii. Visual inspection of the skin
- iii. Palpation

i **Client History:** The history should contain specific information. Such as:

**A/ Evaluation of lesion:-**

- Duration & site of onset
- Where the lesions are now
- Any changes in the disorder since it first appeared, including an increase or decrease in symptoms, change in colour, change in location, or spread to other area.
- Physical sensation pertaining to the disorder type (pain, itching , burning) & intensity
- Relieving or aggravating factors.
- Associated systemic symptoms ex. fever.

**B/ Allergy History:**

- ✓ known or suspected allergies.
- ✓ Current or recent medications used
- ✓ Recent changes in the use of personal products such as soaps, cosmetics, etc

**C/ Environmental History - Present & past occupation**

**D/ Medical and surgical History: - Previous illnesses diagnosed and treated**

**ii Visual Inspection of the skin**

- Inspection of the skin including scalp, hair & nails is the second part of the assessment.
- The mucous membrane of the mouth are also examined when the lesions are on the face , head or neck
- Start the examination from the head and observe the skin for colour ( pallor , jaundice , erthema, etc)
- Assess the nails for ( colour , configuration , consistency )
- Observe the hair for colour (normal hair colour ranges from white to black and hair colour begins to gray as one aged).Natural state of hair can be changed by use of hair dyes. Texture of hair ranges from fine to thick and oily to dry. Oily skin is due to increased sebum secretion and dry hair is due to over use of hair dyes. The body hair distribution varies with location.
  - ✓ Alopecia = Loss of hair

- ✓ Hair loss = Baldness affect more than half of male population .It is related to aging, heredity and androgen
- ✓ Other changes such as Hirsutism (increased body hair) are male pattern hair distribution in some women at the time of menopause.
- Skin lesions and surrounding areas are described as accurately as possible.
- Since some systemic disorders produce dermatologic symptoms, it is important to examine other body organs or structures in patients with some skin disorders.  
e.g.- systemic lupus erythematosus which is presented with red butterfly pattern over check, painful joint, edema, fiver etc. Asses for kidney, heart and lung. It is caused by autoimmune disorders which affect collagen fibers.

### 1.3 COMMON DIAGNOSTIC PROCEDURES

#### Diagnostic test

The diagnosis of a skin disorder is made chiefly by visual inspection. Some skin disorders may require additional testing.

#### Simple Diagnostic Procedures

**1. Skin Biopsy:-** is a miner surgical procedure by which sample of skin or part of lesion is obtained for pathological examination.

#### TYPES OF SKIN LESIONS

Common pathology of the skin; there are 2 types of skin lesions or changes

##### **A. Primary or initial lesion:-**This includes:-

- 1. Macule: -** is an area of skin which is different from the surrounding skin (non palpable flat discolor spot; red, white etc) it is not raised above the skin surface ( $< 1$  cm). May be various in size (regular border), shape and color.
- 2. Papule:-** is like a macule but it is a small solid, red raised lesion above the level of the skin surface ( $< 0.5$  cm). e.g:- warts



3. **Vesicle:** - is like a papule but there is clear fluid under the surface of the lesion. Its size is < 5 cm. E.g.: herpes simplex /herpes zoster, chicken pox. Any abnormal skin lesion is called dermatosis.
4. **Macula popular:** - Multiple lesions consisting of both macules & papules
5. **Pustule;** - is a small elevation on the skin like a vesicle but the fluid contains pus.  
E.g.: impetigo, boil
6. **Rash:-** is small red spots seen in allergic reaction
7. **Blister:** - raised area of the skin filled with fluid **e.g.** a 2<sup>nd</sup> degree burn.
8. **Bulla:** - is blister less than 0.5 cm (**e.g.** 2<sup>nd</sup> degree burn).
9. **Wheal:** - transient elevation of the skin caused by edema (swelling) of the dermis and surrounding capillary dilatation having severe itching. e.g.: insect bite, urticaria
10. **Patch:** - a flat discolored area on the skin larger than 1cm (vertigo), irregular border  
e.g.: pityriasis .
11. **Plaque:** - a patch on the skin or mucous membrane. A solid mass greater than 1 cm in diameter and limited to the surface of the skin
12. **Nodule:** - a solid mass greater than 1cm (0.5 – 2 cm) which extends deeper into the epidermis
13. **Tumor:-** is large mass greater than 1-2 cm (2<sup>0</sup> no.7)  
**Cyst:-** is encapsulated fluid filled or semisolid mass in the subcutaneous tissues or dermis. E.g.: Sebaceous cyst & epidermoid cyst

**B.SECONDARY LESION:-** it takes place in primary lesions and possibly modify them. This lesion includes:-

1. **Scales;** - heaped up horny layers of dead epidermis. May develop as a result of inflammatory changes. **E.g.** dandruff
2. **Crust:** - a dried exudate over a lesion as seen in impetigo, chicken pox, eczema and may consist of serum (yellow), blood (Red brown), pus (Grey, green) or mixture of these.
3. **Eczema:** - inflammatory skin condition characterized by erythema, papules, vesicles and crust.
4. **Debridement:** - Removal of dead cells and dried skin from a wound  
**Purities:** - Itching
5. **Excoriations:** - Superficial linear scratch marks (break) or traumatized area in the skin.

e.g.:- Scratches, abrasion

6. **Fissure:** - a crack in the skin usually from marked drying and long standing inflammation.
7. **Ulcer:** - open lesion on the skin with loss or destroyed of deep tissues **e.g.** bed sore, tropical ulcer.
8. **Scar:** - mark left on the skin after repair of the tissue.
  - Keloid** is hypertrophied scar tissue 2<sup>nd</sup> to excession of collagen formation during healing (excession abnormal healing)
  - Lichenification:**- thickening of the horny layer of the skin
9. **Tumor:** - large solid mass greater than > 2 cm but usually 1- 2 cm.

## **NURSING PROCESS**

### **The client with a Skin Disorder**

#### **Assessment**

- The involved areas are inspected and a description of the involve area recorded .A complete and thorough medical, drug, and allergy history is obtained.

#### **Nursing Diagnose:-**

- Pain related to infection or type of skin disorder.
- Impaired Skin Integrity related to symptoms of disorder, scratching , other factors (specify)
- High Risk for Infection related to scratching, poor hand washing techniques, poor physical condition other factors (specify)
- Anxiety related to symptoms, treatment regimen, other factors (specify)
- Body Image Disturbance related to disfigurement
- High Risk for Ineffective Management of Therapeutic Regimen related to insufficient knowledge of home care management, treatment, techniques of drug administration.

## **PLANNING AND IMPLEMENTATION;**

The major goals of the client may include a relief of symptoms, absence of infection, intact skin; reduction in anxiety, improved self - image, and understanding of the prescribed treatment regimen. To make these goals measurable, more specific criteria must be added.

### **PAIN**

Although not all disorders are painful, some disorder may require an analgesic. Care and gentleness in caring for those with a painful skin disorder

**PRURITUS:** - Certain factors tend to make itching worse, including excessive warmth, rough fabrics emotional stress & idleness. Itching usually is worse at night , probably because attention is not occupied and the client is more aware of the sensation , Make an effort to determine what substances or events may cause itching and, when possible to remove or correct them. Severe itching is agony. Scratching leads to trauma and excoriation, often to infection. Helping the client with severe pruritus to obtain some degree of comfort and to avoid scratching is challenge. It is an even greater challenge when the client is unable to cooperate because of mental confusion or disorientation.

Measures that may reduce itching or prevent breaking of the skin by repeated scratching include:-

- ✓ Keeping the clients nails short and clean
- ✓ Providing light cotton bedding and clothing that allow normal evaporation of moisture from the skin (the use of wool, synthetics, and
- ✓ other dense fibers is avoided)
- ✓ Having the client wear white cotton gloves if scratching occurs during sleep
- ✓ Avoiding the use of regular soap for bathing, hypoallergenic or glycerin soaps often can be used without causing skin irritation or itching .
- ✓ Using tepid bath water and patting rather than rubbing the skin dry.
- ✓ Note and record the result of the prescribed oral or topical agent and inform the physician if the drug fails to relieve itching.

**INFECTION:-** Some skin disorders are of themselves infectious. In some situations, infection is introduced because of scratching, poor hand washing techniques (client and nurse), or

autoinoculation Instruct the client to wash the hands thoroughly with soap and water and to avoid touching other areas of the body after touching an infected area

### **SKIN INTEGRITY:-**

Wet dressing may be used in the treatment of some skin disorder. Do not allow a wet dressing to become completely dry. If the dressing has become completely dry, the entire dressing must be completely removed and the treatment resumed. If the dressing is dry and has stuck to the skin do not attempt to remove the dressing because this causes pain as well as trauma to the skin. Instead, first remove the outer layer of gauze, then moisten the inner layer with solution, using an Asepto syringe. After at least 20 minutes , attempt to remove the adherent dressing .If the dressing does not come loose , add additional solution allow the solution to soak in to the area , and then attempt to remove the dressing .

Open wet dressing are usually applied at intervals, for example, for 15 minutes every 2 hours. Remove and discard these dressings at the end of each treatment because the compresses dry out quickly. Adherence of dry compresses to the skin, followed by difficult removal, defeats the purpose of this type of dressing.

One problem associated with continuous closed wet dressing is the absorption of water through the skin .This may result in skin softening and, ultimately , in maceration (softening and wrinkling of the skin).It is most important that compresses used in wet dressing be removed as prescribed. If there is no written order about dressing changes, remove and reapply the compresses at least once a day and preferably every 8 hours . Inspect the skin at this time and immediately report any softening or severe wrinkling

When tub baths are prescription make sure the bathroom is comfortably warm and add small amounts of hot water at periodic intervals to prevent the water from the becoming clod and the client chilly .When the treatment is over pat the skin dry because rubbing the skin can cause irritation and may open skin lesion. If a topical drugs is to be applied after the bath apply it immediately after the clients skin has been dried. Irritation and increased itching may result if the application of a local medication is delayed after the bath. When a bath oil additive is used, take special care in assisting the client in and out of the tub because oil leaves a slippery residue on the tub surface.

### **BODY IMAGE DISTURBANCE, ANXIETY:-**

Because the skin is visible , skin lesions can result in a disturbance in body image and self -esteem .It is not difficult to understand why people who suffer severe facial disfigurement or have pronounced skin disorder on exposed parts of the body often undergo personality changes and at times varying degrees of anxiety . They become acutely & painfully aware of the stares, the avoidance, & even the revulsion of other, & they tend to withdraw from social &business contacts. Show acceptance of clients with disfigurement or a skin disorder because they need a great deal of understanding & emotional support.

**CLIENT AND FAMLIY TEACHER:** - The client must have a full understanding of the complete treatment regimen. Develop at teaching plan to include one or more of the following:

- Follow the directions of the physician regarding the prescribed medications
- Apply topical drugs exactly as prescribed prepare the skin before application precisely as directed by the physician.
- Take the prescribed oral drugs in the dose and at the intervals printed on the container.
- Do not increase or decrease the dose or intervals of topical or oral drugs .
- Do not use any non prescription oral or topical drugs unless their use has been approved by the physician.
- Keep the skin clean. Use a mild soap for cleansing the skin. Avoid using perfumes, perfumed soaps or lotions, or soaps that contain deodorants unless their use is approved by the physician. Avoid using any facial cosmetics unless that use is approved by physician.
- Keep the hair short, clean and away from the face and forehead. Wash the hair at the intervals suggested by the physician. Avoid the use of dyes, rinses, sprays and other styling products unless their use is approved by the physician.
- Wash the hands thoroughly before as well as after applying topical medications. Keep the hands away from the affected areas. If the area must be touched, the hands must be thoroughly washed before as well as after touching the area.
- If an infection is present, follow the advice of the physician to prevent the spread of the infection to other individual and to other parts of the body. Soak towels and washcloths in beach and wash in hot water separate from other laundry. Clothing also is washed in hot water separate from the laundry of other family members. Using an extra rinse cycle helps remove any soap residue.

- Never try to remove, squeeze, or prick a pimple, boil, or any other type of skin lesion because a serious infection can occur.

**EXPECTED OUTCOMES;**

- Pain is controlled
- Pruritus is relieved
- Skin remains intact
- No evidence of infection
- Anxiety is reduced
- Demonstrate evidences of accepting changes in body image
- >> understanding of treatment regimen

## **2. C. INFLAMMATORY AND ALLERGIC DISEASE OF THE SKIN**

### **A. Dermatitis**

It is an inflammatory disease of the skin with many entities.

**Contact dermatitis:** - is a common inflammatory condition caused by a skin reaction due to contact with a variety of irritative or allergic materials. There is damage to the epidermis by repeated physical and chemical results.

**Primary irritant contact dermatitis:** - is a non allergic reaction caused by exposure to an irritating substance.

**Allergic contact dermatitis:** - results from exposure of sensitized individuals to contact allergens.

#### **Cause:-**

- plants
- Cosmetics
- Soaps, detergents and scouring compound
- Industrial chemicals
- Hair dye, Nickel, rubber chemicals

#### **Predisposing factors:-**

- Extremes of heat and cold
- Frequent immersing soap and water
- Pre-existing skin disease

#### **S/S:-**

- Skin eruptions begin at point of contact without causative agent
- Itching, burning, erythematic, vesiculation and eczema
- Weeping, crusting, drying, fissuring and peeling
- Thickening of skin and pigmentation changes if repeated reaction occur
- Secondary bacterial invasion

**Dx- patch testing**

**Rx-** objective is protect and rest the involved skin

**1. Avoidance of the offending irritant:-**

- a. Avoid to use soap until healing occurs
- b. Avoid the skin from exposure to irritant
- c. Wearing of protective material while manipulations of chemicals

**2. Topical treatment :-**

- a. Use of bland or unmediated lotions
- b. Cleans away softened crusts and other debris

**3. Medication:-**

- Sedatives
- Antihistamines
- Systemic antibiotics for secondary bacterial infection.
- Short course of systemic steroids if the condition is severe.

**4. Patient education on:-**

- a. Avoidance of irritants
- b. Avoid self prescribed topical medication
- c. Wash immediately after exposure to antigens
- d. Do not touch uninvolved body parts with the involved one.

**B. Caring for patient with psoriasis**

**Def<sup>n</sup>.** Psoriasis is a chronic non infectious inflammatory disease of the skin in which the production of epidermal cells occurs at basal that is approximately 6-9 times faster than normal. The cells in the basal layer of the skin divided to quickly and the newly formed cells move rapidly to the skin surface that they become evident as profuse scales or plaques of epidermal tissue. The psoriatic epidermal cell may travel from the basal cell layer of the epidermis to the stratum corneum (skin surface) and be cast off in 3-4 days.

**Etiology:** - is unknown however exacerbated by;



**Predisposing factors:-**

- Trauma,
- Stress
- Use of specific systemic medication
- Hereditary predisposition (Family history)
- Excess solar irradiation
- Irritating topical therapy
- Infections (HIV)

**Pathophysiology:-** abnormal cellular proliferation of the epidermis produce inflammation formation of microabscesses

**Clinical features:-**

- i The hall marks of psoriasis are the red, sharply demarcated erythematous papules and plaques covered by thick silvery white scales predominantly on elbows, knees, & scalp but the lesions may be present on any part of the body
- ii Symmetrically distributed lesion
- iii Secondary excoriations or lichenification may develop with out pruritic eruptions.
- iv Erythroderma
- v Characteristics:- red patches covered by thick dry silver scales & itching is usually absent or slight but occasionally it is severe

**Dx:-** mainly clinically but skin biopsy reveals proliferation of epidermal cells visual

**Medical Rx & Nursing care:-**

No curative Rx of the condition is available. Ultraviolet light is effective therapy for patient with wide spread psoriasis. Instruct the patient to avoid excess drying or irritation of their skin & maintain adequate cutaneous hydration. The goals of management are to slow the rapid turnover of epidermis, to promote resolution of psoriatic lesions and is to control the disease because this is not known to cure. There are 3 types of therapies:-

**A. Topical therapy:-**

- Tar formulations: - lotions, ointments, creams & shampoos which can inhibit the growth.
- Anthralin preparations (Antradermi) are useful for thick psoriatic plaque.

- Topical corticosteroids: - applied for their anti inflammatory action.
- Calcipotriol (vit D analogue) 50 mg apply twice per day for one week

**B. Intra lessional therapy:** - intra lessional injections of triamcinolone acetonide for highly visible or isolated patches.

**C. Systemic therapy:** - cytotoxic preparations.

- **Methotrexate:** - inhibits DNA synthesis in epidermal cells, there by reducing the turnover.

### **Giving Nursing care for a pt. with acne**

Acne is a disease of the sebaceous follicles

Two types of Acne

#### **i. Acne Vulgaris:-**

It is usually a self limited disorder primarily of teenagers & young adults

**Cause:-** exact cause is unknown

- It is a chronic disorder of the sebaceous (oil) glands,
- Characterized by the presence of comedones (black heads) white heads, papules, pustules, nodules and cysts.
- It begins at puberty or earlier and usually clears by 30 years of age.
- Comedones, is the lesions of acnes closed comedones = white heads, open comedones = black heads.

#### **Predisposing factors:-**

- Genetic predisposition: - strong genetic overtones./Family history/
- Hormonal changes of adolescence: - sebaceous glands start to enlarge under the influence of dermal hormones, there is increased seborrhea. /Sebaceous gland secretion during childhood sebaceous glands are small and non functioning.
- In adults: - can occur post partum or related to use of oral contraceptives.
- Can be aggravated by anxiety, stress, and emotional tension.

**C/F:-**Based on the number and type of lesions (comedones, papules, pustules and cysts, it can be mild, moderate or severe acne. Comedone (small cyst) w/h may be open or closed, papule & pustules Initial lesion over forehead than over cheek nose chin the skin is excessively oily

**Dx:-** visual examination & culture & sensitivity test if infected

**The overall objectives of treatment and nursing managements are to:-**

- Reduce colonization by corynebacterium acne's bacteria
- Prevent follicular obstructions (plug)
- Reduce inflammation and combat secondary infection
- Minimize scarring
- Eliminate factors that may predispose to acne

**To prevent obstruction of oil glands:-**

- Wash the face gently 3 times daily with mild soap & water to remove surface oil.
- Shampooing the scalp nightly or twice weekly with medicated shampoo.
- Use bath brush if back is involved.

**For more severe involvement:-**

**Topical agents:** - 8 -12 weeks to clear keratin plugs from follicular ducts.

**Topical vitamin A, Tretinoin (Retin-A):-**

- Speed up the cellular turnover → forces out the comedones & to prevent new comedones
- Warn the patient exposure to sun light may predispose to sunburn.

**Topical Benzoyl peroxide in gel:-**

- Exerts antibacterial effect and is useful for inflammatory acne.
- To depress sebum production and promote break down of comedone plugs

**Topical Antibiotic:** - Clindamycin, tetracycline, erythromycin 50% in industrial methylated spirit apply once or twice daily after washing.

**Systemic therapy (Antibiotics):-**

- Reduce fatty acids on skin surface
- Suppress anaerobic lipase producing bacteria
- Useful when the patient does not respond to topical therapy.

**Drugs:-**

**A.** TTC, erythromycin (250 -500 mg daily)

**B.** Long term low dose antibiotics (At least 3-6 months)

Retinoid therapy for sever form with cyst formation (nodular cystic acne)

- Inhibits production of sebum (sebaceous gland) oral retinoid (isotretinoin).

**A.Hormone (oestrogen) therapy:-** to depress sebum production by Antagonious the effects of androgens.

**Acne surgery (comedones extraction),** incision and drainage of cysts.

**N.B.** It should not squeeze. It may lead to secondary infection.

**ii. Acne Rosacea**

Is an inflammatory disorder predominantly affecting the central face. It is seen almost excecclusively in adults rarely affects under 30 yrs of age. It is more common in females

**S/S:-** erythema, pustules no cyst

**RX:-** Tetracycline 250 mg po oid for one week

Or

-Erythromycin 250 mg po qid for one week

- Removing Comedone & draining pustules

**Nursing Management:-** Advise the client to keep the hair clean by washing & avoiding the use of cosmetic hair product (sprays, gels, etc) about the drug

### **Eczema:-**

It is superficial inflammatory process primarily involves the epidermis and can occur in adults it is also known as infants dermatitis.

**Risk factors:** - an allergic sensitivity to foods, dusts, pollens or similar inhalants.

**S/S:- symmetrical**

- Red, minute papules and vesicles
- Weeping, oozing, crusting and scaling present.
- lichenification
- Pigmentation and itches may be present

### **Treatment:-**

- Potassium permanganate bath or calamine or normal saline lotion compress not use soap and removes accumulated crusts.
- Then application of corticosteroid or other ointment
- Antihistamine orally for prurities

### **Complication:-**

- infection (staphylococcal)
- Chronicity
- 2<sup>ry</sup> spread (Gravitation Eczema)

## **INFECTION OF THE SKIN**

### **Bacterial infections**

#### **A. Giving Nursing care for pt with Boils (furuncle):-**

**Def<sup>n</sup>:** Is an acute inflammation of the subcutaneous layer of the skin, glands & hair follicles; since, it is Localized skin infections of single hair follicle but the inflammation arising deep in one or more hair follicles and spreading in to surrounding dermis It can occur anywhere on the body but more prevalent in areas subjected to irritation, pressure, friction & excessive perspiration such as the back of the neck, axilla or buttocks. Deeper form of folliculitis (furunculosis) refers to multiple or recurrent boils

**Cause:** - usually staphylococci (aureus) but streptococcus can also cause it.

**S/S:-** Start as a small red raised painful pimple; painful hard deep follicular abscess and overlying skin is hot to touch.

- The area become soft & opens to discharge pus.
- Common sites of lesions buttock face neck axillae
- Frequently, the infection progresses and involves the skin and subcutaneous fatty tissue, causing tenderness, and fever and surrounding cellulites.

#### **Diagnostic procedure:-**

- Clinically
- culture & sensitivity

#### **Medical management:**

- Surgical drainage (incision & drainage)
- Systemic antibiotics
- Cloxacillin 500 mg po for 7 day
- Hot wet soaks are used to localize the infection

## **Nursing Mx:-**

Instruct the client to never pick or squeeze a furuncle because drainage is infectious & this cause spread of the infection to the surrounding tissue. Other care given is similar to that of care for pt. with skin d/o

### **Complication: -**

- Cellulites
- Peripheral abscess
- Osteomyelitis
- May advance to carbuncle

## **Providing care for a patient with carbuncle**

**Def<sup>n</sup>.** A carbuncle is an abscess of the skin and subcutaneous tissue representing an extension of furuncle that has invaded several hair follicles and is large and deep seated. The back of the neck and buttocks are the common site.

**Causative agent: -** usually caused by staphylococcal infections.

**C/F:-** painful lesion, fever, malaise

**N.B.** Furuncle and carbuncle are more likely to occur in patients with underlying systemic diseases such as diabetes or hematogenic malignancies and those receiving **immunosuppressive therapy** for other disease. Both are more prevalent in hot climate areas.

**Common sites** for the lesion/thick & inelastic skin/

- Back of the neck
- Shoulder hips
- Thigh

**Dx:-** Clinical sign & symptoms

**Medical Mx:-**

In treating staphylococcal infections, it is important not to rupture or destroy the protective wall of infection that localizes the infection, therefore the boil or pimples never be squeezed it may spread to other parts of the body.

- Systemic antibiotics: - Cloxacillin, erythromycin, PPG.
- Supportive care:- Warm moist compress, cleaning the surrounding tissue
- Extraction (incision) & surgical drainage: - to remove abscess when the puss has localized & fluctuant.

**Nursing process:-**

- Warm moist compresses increases vascularization & hasten resolution of boils or carbuncle.  
Clean surround skin with disinfectant
- Supportive Rx (analgesics)
- Pt education on prevention through improving hygienic env't

**Impetigo:-**

Is a superficial inflammatory skin disease marked by isolated pustules which become crusted and rupture. It occurs mostly in malnourished children living under poor hygienic conditions.

**Cause:** - streptococcus or staphylococcus

**Sign and Symptoms:-**

- Some times itching
- First red macule then vesicle and pustules
- Bollous (large vesicle)
- Yellowish sticky crust



**Treatment:-**

- Wash with soap and water 2 or 3 times a day
- Remove the crusts and discharge with disinfectant normal saline, H<sub>2</sub>O<sub>2</sub>, potassium permanganate solution
- Apply gentian violet, Antibiotic ointment, Ammoniated mercury ointment, white field
- Systemic antibiotic (PPG) for sever cases.

**Complication:-**

- Scar
- Ulcers, abscess or boils
- Cellulites, Nephritis
- Osteomyelitis

**Abscess:** - is a collection of puss in a cavity

**Cause:** - Staphylococcus & Tubercular bacillus (cold abscess)

**S/S:-** Redness, heat, pain and tenderness, but Local heat and tenderness are absent in cold abscess.

**Treatment:-** depends on the cause

- i If the cause is staphylococcus or streptococcus:-
  - Incision and drainage
  - Change dressing frequently
  - PPG
- ii If the cause is tuber clue bacillus:-Anti Tb drugs

**Tropical ulcer:-** is a chronic sloughing ulcer of the lower extremities mostly. It may be deep involving muscles and bone.

**Cause:** - spirochete, bacteria,

**Contributing factor:-** malnutrition especially protein & vitamins decrease resistance of infection.

**S/S:-**

- At first there may be a break in the skin or vesicle filled with bloody fluid
- This vesicle breaks and an ulcer forms which becomes large very rapidly
- The skin around the edge is hard, hot and tender (ulcer extends under the skin).

**Management: -**

- The local ulcer should be urgently removed and dressed with sulfathiazole crystals
- Antibiotics if necessary
- Avoid direct contact and flies

## **VIRAL INFECTIONS**

**ii. Herpes simplex** (Fever, blister, cold sore)

- The infection is primarily seen on the lips, mouth, genitalia.

**S/S:-**

- Initial burning and itching
- Appearance of painful small grouped vesicles
- Crust forms
- Healing within 10 -14 days.

**Treatment: -** Primarily symptomatic

- Early application of zinc sulfate solution and analgesics.

**iii. Herpes zoster (shingles):-** is an inflammatory viral condition which the virus produces a painful vesicular eruption along the area of distribution of the sensory nerves from one or more posterior ganglia.

**Cause:** - Varicella zoster virus

About 10% of adults set shingles during their life time. There is an increased frequency of herpes zoster in patients with weakened immune systems and malignancies especially the leukemias and the lymphomas.

**Clinical manifestation:-**

- Eruption preceded by pain w/c may radiate over the entire region supplied by nerve.
- The pain may be burning, lancinating (tearing sharply cutting), stabbing, aching.
- Malaise and gastro intestinal symptoms precede the eruption.
- Patches of grouped vesicles appear on the red and swollen skin.
- The early vesicles contain serum and later become purulent, rupture and form crust.
- The inflammation is usually unilateral involving the thorax, cervical or cranial nerves in a band like configuration.
- The clinical course varies from 1-3 weeks.
- The lesion heals between 7-36 days.

**Management:-**

- The goal of mgt is to relieve the pain & to reduce or avoid complications i.e. infection, scarring & post herpetic neuralgia & eye complication
- Pain is controlled by analgesics
- Corticosteroids to prevent post herpetic neuralgia
- Antibiotic for secondary infections
- Rest
- Acyclovir

## **GIVING NURSING CARE FOR PATIENT WITH MYCOSIS (Fungal infections)**

**SPECIFIC OBJECTIVEVE:** - At the end of the instruction the trainee will be able to give nursing care for a patient with mycosis using the necessary material and nursing care plan.

**Definition:** Mycosis is the fungal infection of the skin and its appendages (i.e. hair & nail) ,but in others the internal organs are involved or it is a group of fungal skin diseases caused by dermatophytes of several kinds. The fungi, tiny representatives of the plant kingdom that feed on organic matter are responsible for various common skin infections.They can affect skin and its appendages and internal organs in some instances

**A,** The most common fungal skin disorder is known as tinea or or “ringworm “ or dermatophytoses. Tinea infections affect the head, body, groin, feet and nails.

**B,** Yeast infection:-

- Microsporum, Trichophyton, & epidermophyton are most common fungal genera.

### **A) Tinea (Ring Worm)**

**i. Tinea capitis** /Ring worm of the scalp/:-

- It is contagious fungal infection of the hair shaft which is commonly seen in children & cause of hair loss.

**Etiology:** Micro sporum audavini

**S/S:-**

- Common in children
- Circular patches of erythema /Redness/ & scaling
- Small pustules or papules at the edges.
- Hair brittle, breaks easily at scalp

**Treatment: –**

- Apply gentian violet, white field ointment
- Keep the hair short and clean
- Griseofulvin is the preferable
- Shampoo 2-3 times a week (Nizoral)
- Ketoconazole cream

**ii. Tinea corporis** (Ring worm of the body)

- Involves exposed parts of the body, usually non-hairy areas ( face, neck, trunk, & extremities ) on which the typical ringed lesions appears .

**Etiology:-** Trichophyton

**C/M**

- Circular or irregular shaped patches, with central healing scaly & has intense itching.
- begins with erythematous macules advancing to rings of papules or vesicles with central clearing. The lesions are found in clusters may extend to scalp, hair or nails, pruritic.

**Treatment:–** ketoconazole, Griseofulvin & Fluconazole

**iii. Tinea cruris** (Ring worm of the groin “Jockitch”)

- It is ring worm infection of the groin, which may extend to the inner thighs & buttock area.
- Commonly associated with tinea pedis & occurs most frequently in obese persons those who wear tight under clothing & in young joggers.

**Etiology:** Various organisms

**S/S:-**

- Pruritus with small, red, scaly patches extending to circular plaques with elevated scaly or vesicular borders.

**Treatment:** Mild condition:- ketoconazole, clotrimazole, miconazole cream.

Severe condition:– griseofulvin

#### **iv. Tinea pedis** (Ring worm of the feet “Athlete’s foot”)

- Is the most common fungal infection.
- It commonly affects teenagers & young adults although it can occur in any age group
- It is more common in those who use communal showers.
- It involves the interdigital spaces of foot.

**Etiology:** Trichophyton mentagrophytes

#### **Clinical Features:-**

- It may appear as acute or chronic infection on the soles of the feet or between toes.
- Pruritus soles of feet,
- Spaces between toes affected
- Inflamed vesicles (Acute) or
- Scaly dusky or red rash (chronic)
- Bacterial super infection can occur

**Treatment: –**

- Soak in KMnO<sub>4</sub> (vinegar) solution and dry properly
- Topical medical (clotrimazol, miconazol)
- Resistant infections (Griseofulvin)

#### **v. Tinea unguium (onychomycosis)** (Ring worm of Nails)

- Tinea unguium (ring worm of the nails) is a chronic fungal infection of the toe nails, or, less commonly, the finger nail. It is usually caused by Trichophyton species or candida albicans.
- It is associated with long time fungal infection of feet.

**Etiology:** Trichophyton species.

**S/S:-**

More common in toe nails, associated with long time fungal infection of feet nails thicken, rough, scaly and cracked, whole nail may be destroyed, there may also be localized pain and swelling.

**DIAGNOSIS:**

- Visual examination.
- The lesion may be scraped & examined microscopically

### **Treatment:-**

#### **I. Topical Medications**

- In early stage soak the nails in warm salty water & dry it & paint gentian violet
- Clotrimazol creams apply for several days /month
- Neistatin or miconazole 2% creams apply for 2 weeks
- ketoconazole 2% creams apply
- White fileds lotion for tinea pedis, corporis & crura bid for 2 weeks
- Removal of nails if the infection is sever and persistent.

#### **i. Systemic Rx:**

- Griseafulvin 125 mg -500 mg po for 2-6 weeks for T. capitues
- Ketocanozole 200- 400 mg po bid for 2-8 weeks.

### **Conservative Mx. :**

- Shampoo hair 2-3 timed a week
- Soak with saline or potassium permanganate solutions.

### **B/ Yeast infection**

**Candidiasis / Maniliasis/** : is usually limited to the skin and mucous membranes.

### **Etiology:-**

- Candida albicans , usually saprophytic , yeast that can be pathogenic if host defenses are weakened.
- Systemic antibiotics, corticosteroids, pregnancy, diabetes Mellitus & immunologic defects increase susceptibility to condidiasis

### **Parasitic skin infestation**

**Scabies:-** is an infestation of the skin by the itch mite.

**S/S:-** itching and scratching is more severe especially at night

- Red pruritic eruptions
- Papules, vesicles, pustules and crusts
- Itching between fingers, toe, buttock, wrist, elbow sometimes on breast and face.

**Medical management:-**

- warm soapy bath to remove scaling debris
- Eurax and Lindane cream and lotion at bed time
- Benzyl benzoate lotion (10%)
- Sulphur ointment

**Nursing management:-**

- All bedding and clothing should be washed in hot water & laundered.
- Health education about regular bathing and transmission
- Never let the medicine in to eyes, face and head
- The family members who have close contacts should be treated
- Leave the applied medication for specific time 6-24 hours before taking a bath.

**Tumors of the skin**

- Is neoplasm “New growth” commonly called tumor
- Abnormal mass of proliferating cells
- Characteristics is uncontrolled growth
- Based on their behavior, 2 basic types (Benign and malignant).
- Cancer is a general term for any malignant neoplasm.

**Characteristics of benign neoplasm:-**

- Remain localized (fixed)
- Cannot spread to other sites



- May acquire a capsule, well differentiated
- Rate of growth is usually slow

### **Characteristics of malignant neoplasm (carcinoma):-**

- Locally invade, able to metastasize (Spread)
- Tend not to be encapsulated
- Grow more rapidly

### **Benign Tumors of the skin:-**

**Cysts:-** are epithelium lined cavities that contain fluid or solid materials.

- **Epidermal cysts:** - are occur frequently and described as slow growing, firm and mostly found on the face, neck, upper chest and back.
- **Pilar (Sebaceous) cyst:** - are mostly found on the scalp and originate from hair follicle.

**Treatment:** - surgical removal

### **Warts (Verruce):-**

- Are common benign skin tumors caused by infection with human papilloma virus and mostly seen in children.
- Are asymptomatic except when they occur in weight bearing areas /soles of the feet/.
- Are occurring on the genitalia and perineal areas may be transmitted sexually.
- Are usually self limited

### **Treatment:-**

- Usually no need of treatment
- Locally applied liquid nitrogen, salicylic acid plasters e.g. rub with silver nitrate stick.
- Curettage
- Electrical cauterization

**Keloids:-**

Are benign overgrowths of fibrous tissue/hyper trophied scar tissue) at the site of trauma secondary to excessive formation of collagen during healing. Have greater incidence among African Americans because it is more common among dark skinned people.

**Treatment:-** not always satisfactory

- Surgical excision
- Intralesional corticosteroid therapy and radiation

**Lipoma:** - arises from fatty tissue

**Treatment:** - no treatment

- Surgical incision

**Malignant tumors of the skin /cancer/****Cause:-**

- Exposure to the sun (long time)
- Exposure to irradiation **e.g.** x-ray therapy
- Scars from severe burns
- Exposure to irritant chemicals
- Immunosuppressant
- Genetic factors

The most common type of skin cancer are basal and squamous cell carcinoma as well as malignant melanoma.

**S/S:-**

- Usually presents as a small waxy nodule
- Central ulceration and crusting
- Rough thickened scaly tumor and metastasizes especially SCC.
- Appear mostly on the face, lips, nose, ear, head and upper extremity

**Prognosis:** – 95% curable but the prognosis of SCC depends on the incidence of metastases.

**Medical management:-**

- Surgical excision
- Curettage /following electro-surgery/
- Cryosurgery/insert needle and directed Liquid nitrogen to the center of the tumor) to destroy the tumor by deep freezing the tissue
- Radiation therapy especially for older patients

**Nursing management:-**

- Teach the patient about prevention of skin cancer & self care after treatment such as dressing, hand washing, watch excessive bleeding, apply sunscreen etc.

**Malignant melanoma:-**

- Is the most lethal of all skin cancers (2%)

**Risk factor:-** is unknown but ultraviolet rays and gene are suspected

**S/S:-**

- Occurs mostly on the trunk and lower extremity
- The lesion is irregular and palpable > 6mm
- Positive family history
- Regional lymph nodes are involved

**Nursing interventions:-**

- Relieving pain and discomfort
- Reducing anxiety and depression (psychological support)
- Monitoring and managing potential complications
- Teaching patients self care

## Other malignancies of skin

- Kaposi's sarcoma:- which is associated with HIV and more aggressive because it involves, multiple body organs /skins, visceral and mucocutaneous diseases

**Management:-** management is usually difficult because of variability of symptoms and organ systems involved but the goal of treatment is reduction and control of symptoms. No one treatment has been shown to increase survival.

## Classification and assessment of burn

Burn is an injury of skin tissue by exposure of hot substances, chemicals, electrical, radiation. Burn is evaluated by determining:-

- a. The causes of the burn
- b. The condition of the patient
- c. The extent of surface area involved
- d. The depth of the burn (depth of tissue damaged or destroyed).

### A. The causes of burn injury

- i. **Thermal:-**
  - a. Moist:- from steam or boiling water
  - b. Dry:- from flame, hot water and metal
- ii. **Chemical:-**
  - a. Strong acids such as sulfuric or Nitric acid
  - b. Strong Alkalis such as costic soda
- iii. **Electrical**
- iv. **Irradiation** such as ultraviolet ray, x-ray and radium

### B. The condition of the patient

The seriousness is also influenced by:- The patient's age:- the elderly and very young are more likely to die than the young adult and The general health on the time of the accident.

Age in year	BSA Burned	Survival Rate
5 and below	50%	66%

5 – 40 years	50%	80%
40 – 60 years	50%	51%
>60 years	50%	9%

**C. The extent of surface area involved (rules of nine):-** an estimation of the total body surface area (BSA). A quick approximate estimate of the percentage of the body surface burned may be made on the rule of nine. The body is divided in to areas each representing a numerical value related to 9%

- i. The arm 9%
- ii. The leg below the knee 9%
- iii. The leg above the knee 9%
- iv. The anterior chest 9%
- v. The posterior chest 9%
- vi. The abdomen 9%
- vii. The lower half of the back 9% (the lumbar & sacral regions).
- viii. The head and neck 9%
- ix. Perineum 1%

**D. The depth of tissue damaged or destroyed:-**The depth of tissue damaged & destruction in a burn is indicated by classification as:-

- i First degree
- ii Second degree
- iii Third degree

i. **First degree:-**

- Characterized by erythematic with destruction of only superficial layer or partial thickness on epidermis.
- it may be quite painful for a short time but heals quickly without residual evidence of tissue injury.

ii. **Second degree:-**

A Characterized by separation of epidermal layers, collection of fluid in tissues and blisters

- B Involve the destruction of several layer of the skin or superficial deep thickness.
- C But sufficient viable dermal tissue remains to promote regeneration of the cells to replace those burned.

iii. **Third degree:-** is characterized by

- Destruction of the full thickness of the skin and it's appendages.
- The subcutaneous fat, muscle, tendons and bone may also be burned.
- The sensitivity of the area is reduced because of the destruction of sensory nerve endings.
- The injured area may be charred or have opaque white appearance.
- The burn is full thickness depth, spontaneous regeneration and replacement of the skin is not possible.
- The area may be slowly filled in with granulation tissue, than fibrous scar tissue, underlying connective tissue or it is covered by skin graft.

#### **Effects of Burn:-**

The patient who suffers a major burn manifests shock which in some cases may be irreversible

**A. Neurogena shock:-** caused by intense pain and fear which may be experienced by the injured person and are considered to be responsible for:-

1. Vasodilatation
2. Hypotension
3. Impaired circulation

**B. Oligemic or hypovolumic shock:-** is a shock that develop rapidly as a result of the fluid shift from the circulating blood volume.

- i. The blood volume diminishes
- ii. The blood pressure eventually falls
- iii. The cardiac output is reduced
- iv. The blood flow through the tissues is reduced.
- v. The urinary output is decreased as a result of the decreased intravascular volume and subsequent hypotension and renal tubular damage may result.

**C. Toxemia:-** may develop in 3-5 days especially with a large surface area burn. This is attributed to absorption of decomposed product of dead tissue.

**D. Electrolyte imbalance:-** it develops because of:-

1. The burn edema
2. Loss of fluid through the open wound
3. Impaired renal function in the associated shock

4. Excessive release of potassium by the damaged tissue cells.

**E. The effects of the heat:-** the effects of the heat at the site of the burn depend on the intensity of the heat.

- i. The layer of burned tissues may present an eschar:- characterized by dry charred, coagulated surface of a soft, moist non coagulated area.
- ii. Inflammation of dead tissue and sloughing produce a favorable culture medium for organism.

**Phases of burn:-**

Immediate/emergent/phase:-

- Hypovolumic shock
- Starts from events of burn injury
- Ends fluid therapy is instituted

**Priorities:-**

- First aid ABC
- Prevent shock
- Prevent respiratory distress
- Concomitant impairs /prevent
- Wound assessment

**Acute /intermediate/phases:- being from dirusis until completion wound healing Priorities:-**

- Wound care and cosure
- Prevention and treatment of complication (infection and contracture etc).
- Nutritional support
- Rehabilitation (long term) phase:-
- From wound closure to return to individuals optimal level of functions

**Priorities:-**

- Prevention of contracture, scare
- Psychological, occupational rehabilitation
- Functional and cosmotic reconstruction
- Psycho social counseling



## **Treatment:-**

### **A. First aid:-** the initial move in the case of

- Burning due to flames:- the best way to put out the flame is to smother the fire if possible or remove the victim from exposure. If his clothes are on fire, he is quickly rolled in a rug, blanket, something comparable to another the flames. If nothing is quickly available, the flames may be extinguished if he rolls on the ground.
- Application of cold on the affected part is recommended as available first aid measure because the cold reduces pain and may have some values in arresting the effect of heat on the tissue.

### **N:B**

- a. Oils, ointments, lotions and other preparations should not be applied
- b. No attempt is made to remove clothing that is adherent.
- c. The burn area is covered with clean material available.
- d. Keep the patient at rest while waiting for transportation.
- e. A minimal amount of movement and handling is important.
- f. Any constricting shoes, clothing and jewelry should be loosen or removed.
- g. If severely burnt or sealed don't waste time, get the victim to hospital without delay.

### **B. In the case of chemical burns:-**

- Wash the area with water
- Remove patients clothing, since, it is not likely holding some of the poison substance.

## **Management on admission:-**

- i The patient should be admitted to a special resuscitation room if possible and kept there until the danger of circulatory collapse has passed
- ii He should to laid between sterile sheets
- iii Treatment for should be commenced at once by administering 500 ml of plasma or plasma substitute intravenously.
- iv The first 500 ml may be given in a period of 5 minutes before any observations have been made.

- v Once the plasma is running the following observations are made and repeated at regular intervals.
- The rate of the pulse
  - Blood pressure
  - Temperature
  - Blood is taken for estimation of:-
    - ✓ Hemoglobin level
    - ✓ State of the electrolytes
    - ✓ Haematocrit reading, this reading is an indication of haemoconcentration that is to say an estimate of the amount of plasma lost and therefore a guide in determining loose of blood volume.

#### **Resuscitation:-**

- a. **The amount of fluid:-** the total amount of fluid to be given is calculated according to the severity and depth of burn.
- Half of the calculated quantity is given in 8 hours.
  - the remainder is with in 16 hours (1/2 for 8 hrs, 1/2 8hrs)
- b. **Type of fluid:-**
- Plasma or plasma substitute is often first importance.
  - Normal saline is also given to maintain electrolyte balance.
  - If there has been red blood corpuscle destruction whole blood given (blood transfusion)
- c. **The rate of infusion is determined by:-**
- Calculation of the total amount lost
  - Ensuring that urinary excretion is maintained.
- d. **Sedatives or analgesics:-** unless contraindicated by respiratory impairment a small dose of morphine, codeine or pethidine is generally given intravenously.
- e. **Maintenance of urinary excretion:-** Special care is necessary to observe the volume of urinary secretion which may be diminished due to shock.
- i. Indwelling catheter is inserted in to the bladder & the amount of urine hourly is measured.
  - ii. If it falls below 60 ml in the adult or 30 ml in the child the rate of the drop is increased.
  - iii. If the patient is able, drinking is encouraged; If vomiting nasogastric aspiration is necessary

- iv. Urine is examined for the presence of normal & abnormal content as well as specific gravity.
- v. The blood urea is estimated.

## **F. Care of the burn area:-**

### **1. The principal objectives:-**

- a. Prevention of infection
- b. Covering the burnt area as soon as possible (deeper burns require skin grafting).

### **2. Special measures to be undertaken are:-**

- Bacteriological: - after admission; swabs are taken from all burnt areas separately as a control.
- The danger of tetanus:- burns should not be over looked & should be given tetanus antitoxin after skin test.

### **3. Maintenance of sepsis:-** is very important:-

- All attendance must wear gowns, caps, mask and head squares.
- Local cleansing is not under taken until the patient's condition is satisfactory & recovered from shock.
- The burn is cleansed of dirt, foreign substance and detached epithelium using very mild soapy solution or normal saline after recovery from shock.

## **Method of dressings:-**

**1. Exposure method:-** the object of the method is to obtain & maintain a dry surface after cleansing with antiseptic.

- Keep the surrounding as possible free from flies.
- The sheet should sterile and bed candle must be used at all times.
- Do not use antibiotic powder unless it is ordered.

### **2. Closed dressing method:-**

- The whole area is covered with Vaseline gauze and secured with tape or bandage.
- Cleaning the burned area depends on the hospital procedure. Some hospitals clean with mild soap and water followed by antiseptic others clean with normal saline only.
- Prevention of infection by debridement is the important procedure.

- Applications of cream of sulfonamide:- is considered quite effective in controlling the major skin pathogens because the creamy preparation of sulfonamide is water soluble.

**3. Systemic antibiotic therapy:-** penicillin injection 2 ml bid is given in some hospitals. In others the physician follows the bacteriological and sensitivity result and gives the antibiotics according to the sensitivity.

#### **4. Nutrition**

- i. High calorie and high in protein 150-200 gm per day
- ii. High vitamin diet such as v-c and B complex:- It is recommended to provide the essential for tissue repair and the production of antibodies and blood cells.

#### **Dermatologic and plastic reconstructive surgery**

- The word plastic means to form
- Plastic surgery is performed to reconstruct or alter congenital or acquired defects to restore or improve the body's form and function.
- The surgery includes closure of wounds, removal of skin tumors, repair of soft tissue injuries, burns, correction of deformities and repair of cosmetic defects.

**Skin grafts:-** is a technique in which transplantation of healthy tissue from one part of the body to remedy a defect in a corresponding structure.

##### **Nursing intervention:-**

- Instruct the patient to keep the affected part immobilized
- A graft on lower extremity is kept elevated because the new capillary connections are fragile and excess venous pressure may cause rupture.
- Instruct the patient, family member and care giver to inspect the dressing daily, unusual drainage suggests infection.
- When the graft appears pink, it is vascularized after 2-3 weeks, mineral oil or a lanolin cream is massaged in to the wound.

## Information sheet 2- Musculoskeletal disorders

### 2.1 Introduction

It consists muscles, bones, joints, ligaments, tendons, cartilages, fascia and bursae of the body. The problems associated with these structures are common and affect all age groups. The problems are generally not life threatening but they have a significant effect on the patient's normal activities and productivity.

**SOFT TISSUE INJURIES:-** it includes sprain, strain, subluxation & dislocation.

**Sprain:-** is an injury to the ligamentous structure surrounding a joint.

It is usually caused by a stretch or twist and involves ankle, knee joint.

**C/M:-**

- Rapid swelling: - due to extravasation of blood in to the joint cavity and soft tissue
- **Pain:-** due to pressure from oedema on the surrounding tissue; rich in sensory nerve endings.
- X-ray of the involved joint reveals no fracture

**Management:-**

- Cold compress:- for the first 12-36 hrs intermittently for about 15-20 minutes to minimize swelling and pain by vasoconstrictive effect.
- Application of moist heat:- applied after 36 hrs for 15-20 minutes intermittently to promote absorption of the oedema around the affected joint.
- Limitation of motion and use:- to promote healing and prevent further injury this can be achieved by using elastic bandage, splint, cast etc.
- Elevation of the injured extremity to facilitate venous & lymphatic draining.
- Instruct the patient by resume activity gradual
- Instruct the patient on the use of anti pain.

**Strain:-** similar injury as a sprain and results from over use of stretching of a muscle or a tendon beyond their normal functional capacity. This leads to microscopic incomplete muscle tear with some bleeding in to the tissue.

**C/M:-**

- Sudden pain and local tenderness
- Pain experience with muscle use

**Rx:-** the same as sprain

**Dislocation:-** is a complete displacement of the articulating surface of a joint.

**Subluxation:-** is the partial displacement of the articulating surface.

**Cause:-**

- Congenital due to mal-development **e.g.** congenital hip dislocation
- Disease process at articular structure /pathologic/
- Trauma which stretch and tear ligaments for a joint to dislocate or subluxat, that joint capsul or one or more ligament must either torn or stretched.
- Joints must frequently displaced in the upper extremity **e.g.** thumb, elbow, shoulder in the lower extremity but hip is vulnerable

**C/M:-**

- Asymmetry of the musculo skeletal contour (change in length of extremity) e.g. if hip is involved the limb is shorten on the affected part.
- Additional manifestation includes
- Local pain
- Loss of function of the injured part.
- Swelling of the soft tissue in the region of the joint

**Diagnostic measure:-**

- Based on present complaint
- P/E
- X-ray (definitive Dx method)

**Management:-**

- closed reduction which corrects the deformity through manipulation of the extremity
- Surgical intervention sometimes to restore joint articulation (is open reduction).
- Reduction is a method by w/c the dislocated articular surface brought together.

**Nursing intervention:-**

- Reduction of oedema and discomfort by elevation of extremity on a pillow and application of ice pack.
- Immobilization of the injured part to promote healing (splint, elastic bandage).
- Patient education which promote an accident free environments. **E.g.** removing obstacle from the floor can prevent fall.

**Complication:-**

- Injury to nerve and blood vessels
- A vascular necrosis if blood supply to the joint has been affected.
- Recurrent dislocation (common shoulder and patella)
- Osteoarthritis (from damage of articular cartilage)
- Infection (if reduced by open reduction).

**ACUTE LOWER BACK PAIN**

The number of patients is second to the upper respiratory illness.

**Cause:-**

- Acute lumbosacral strain
- Osteoarthritis of the spine
- Intervertebral disk problem
- Unequal leg length
- Obesity and stress may contribute

**C/M:-**

- Acute or chronic pain:- the pain lasting more than 3 months without improvement is called chronic back pain.
- The patient may report radiculopathy or sciatica (pain radiating down the leg) which suggests nerve root involvement.
- The patient's gait, leg length (motor strength) and sensory perception may be altered.

**Diagnostic procedures:-**

- X-ray of the spine to demonstrate a fracture, dislocation
- Blood studies may disclose infection, tumors
- CT scan to identify soft tissue lesions, problems of vertebral disks.
- MRI permits to visualize the nature and location of spinal pathology.
- EMG and nerve conduction studies used to evaluate spinal nerve root disorders (radiculopathies).

**Medical management:-**

- Most back pain is self limited and resolves within 4 weeks with analgesics, rest, stress reduction and relaxation.
- Management focuses on relief of pain and discomfort, activity modification and patient education.
- Analgesics, heat or cold therapy, massage, acupuncture, avoid aggravating factor (twisting, bending, lifting, sitting and standing long period of time), bed board may be used, change position frequently, bed rest if the pain is severe and gradual return to activities.
- If no improvement within 1 month, additional assessment should be performed for physiologic abnormalities.

**Complication:-**

It is an area of hyperkeratosis (over growth of a horny layer of epidermis)

**Cause:-** pressure because of congenital or acquired abnormality.



**Treatment:-**

- Soaking and scraping off the horny layer.
- Surgical modification
- Drying and separating the affecting toes.

**Ingrown toe nail (onychocryptosis)**

It is a condition in which the free edge of a nail plate penetrates the surrounding skin.

**Cause:-**

- Improper self treatment
- External pressure **e.g.** tight shoes
- Internal pressure **e.g.** deformed toes
- Trauma or infection

**Treatment:-**

- Washing the foot twice a day followed by application of local antibiotic ointment.
- Relieving the pain by decreasing pressure
- Warm wet soaks
- Toe nail may be excised

**Fracture:-**

- Is a break in the continuity of bone and is defined according to it's type and extent.
- Results in some degree of soft tissue, tendon, blood vessels, nerves & body organs damage.

**Cause: -**

- Direct blow
- Crushing forces, sudden twisting motion
- Disease of the bone(Osteoporosis, neoplasm)
- Repeated stress which fatigue the bone

### **Classification of fracture:-**

**Closed fracture:-** does not produce break in the skin, no communication between fracture & exterior of the body

**Open fracture:-** is one that extends through the skin or mucus membrane

### **Type of fracture:-**

- Complete fracture:- involves a break across the entire cross-section of the bone, frequently displaced /removed from its normal position
- Incomplete fracture:- the break occurs through only the part of cross-section of the bone

### **Specific type of fracture:-**

- Green stick:- a fracture in which one side of the bone is broken & the other side is bent
- Transverse:- a fracture that is straight across the bone
- Oblique:- a fracture occurring at the angle across the bone
- Spiral:- a fracture twisting around the shaft of the bone
- Comminuted:- a fracture in which the bone has splintered in to several fragments
- Depressed:- a fracture in which fragments are driven (skull)
- Avulsion:- a pulling away of fragments of the bone by a ligament or tendon

### **C/M:-**

- The clinical feature of a fracture will vary depending on whether it is open or closed
- C/M include local & general features

### **Local C/M:-**

- Pain:- may be throbbing localized & aggravated by movement
- Loss of normal function:-from pain & instability of the broken bone
- Deformity:-produced by displacement of the bone
- Swelling:-results from extravasations of blood from the bone & soft tissue
- Abnormal movement:- may be demonstrated by moving the 2 ends of the fracture
- Crepitus:- the granting sensation felt when the fragments moves up on each other

**General manifestation:-Shock** which can be occur due to the blood loss & pain while shock is a complex groups of S/S precipitated by various etiological factors. **Hypovolumic shock:-** occurs when a person loss large volume of blood from systemic circulation. Haemorrhage is a bleeding from the bone & soft tissue but shock can be occur associated with damage to the brain, spinal cord, visceral major arteries & nerves.

### **Investigative procedure:-**

#### **History:-**

- Accurate history taking including a description of the possible cause of fracture
- Clinical manifestation
- X-ray of the affected part at least in 2 views (A & P, Lateral) because a fracture can easily be missed if only one view is taken.

**Management of a fracture:-**treatment of a fracture falls in to the following categories:-

- I. Emergency management
- II. Reduction
- III. Immobilization
- IV. Rehabilitation

- i. **Emergency management:-**is the first aid treatment a person with fracture receives at the site of accident while incorrect handling can cause serious tissue damages, increase pain, haemorrhage & shock as well as infection. Since the fractured limb should be immobilized prior to move the

patient (splinting). Also open fracture must be covered with dressing to prevent further contamination by the bacteria to lessen risk of osteomyelitis.

ii. **Reduction of the fracture:-** is a method by which the displaced bone fragments are brought back in to its anatomical position. Reduction is usually performed under anaesthesia to relieve pain & to provide muscle relaxation. There are 2 types of reduction:-

- **Closed reduction:-** is a non-surgical method of bringing the fractured bones together to their previous anatomical position
- **Open reduction:-** is a surgical exposure of the fractured site & the bone ends are brought together to its anatomical position

iii. **Immobilization of fracture:-** is the method of holding the fracture in its reduced position until adequate healing has occurred. The aim of immobilization is to aid in healing by preventing displacement, angulations (bending) & to relieve the pain

- **External fixation:-** external fixation devices are used to hold bone fragments in normal position. Such type of device includes casts, skeletal & skin traction as well as metal pins
- **Casts:-** is the immobilizing device which is made up of a layer of plaster of Paris. It is similar to that of an elastic bandage. The types of casts are indicative of the part of the body immobilized.
  - ✓ Short arm cast:- extends from below the elbow to the proximal palm
  - ✓ Long leg cast:- extends from upper thigh to the base of the toe
  - ✓ Spica:- covers the trunk & one or both extremities of the patient
- **Traction:-** it is a device which applies a pulling force on the fractured extremity & results in realignment. There are 2 types of traction
- **Skeletal traction:-** is the traction which is directly applied to the bone by inserting surgical pins or wires through the bone distal to the fracture. Such type of traction is used on the tibia, femur, humerus & cervical spine
- **Skin traction:-** is the traction applied by using pull on adhesive plastic materials attached to the skin below the site of the fracture.
- **Internal fixation:-** internal fixation devices are surgically inserted at the time of operation (realignment) by using of rods, wire, screws, pins, intra-medullary rods or nails

### Nursing care of a patient with cast:

- Excess plaster should be removed, as the particles may be fall inside the cast & cause skin irritation & pressure
- Support wet cast with the flat of the hand or pillow to avoid indentation that will cause pressure on the underlying skin.
- Expose the cast to the air as much as possible to aid in the drying
- Rapid drying with the use of heater or hair drier may burn the patient or cause the cast to crack
- Ideally a wet plaster should be fully exposed to the air & bed cradles should be used to protect the wet of the bed linen
- Instruct the patient not attempt to move the joint in the plaster while the plaster is wet; as this will crack & weaken the cast
- Elevation of the limb is required until swelling has been resolved; the patient is instructed to elevate his arm or leg during the periods of rest
- Do not apply paint & varnish to the cast; plaster is porous material that allows the air to circulate to the skin
- Inspect the skin at the edges of the cast for erythema & apply adhesive tape to the rough edge of the cast
- Observation of neurovascular impairment, assessed by:-
  - ✓ **Color:** - The color of extremity with cast should be normal;
    - Best assessed by comparing with the opposite limb
    - Cyanosis & swelling of extremities are indicative of the impaired venous
    - Return while Cold digits are indicatives of arterial impairment
  - ✓ **Warmth:-** a good blood supply is indicated by warmth
  - ✓ **Movement:-** the patient should be able to freely move the extremities
  - ✓ **Swelling** of the limb may preclude the normal movement
  - ✓ **Sensation:-** is the feeling in each digit is checked separately,
    - The patient is able to identify the toe or finger with out looking

**Complication of fracture:-** the majority of fracture heal with out complication

**Infection:-**

- ✓ Open fracture & soft tissue injury have a high incidence of infection
- ✓ Devitalized & contaminated tissue is an ideal medium for the organisms

**Compartment syndrome:-** is the compression of structure with in defined areas as a result of oedema. The compression create sufficient pressure to the obstruct venous and arterial circulation & results inadequate circulation to the extremity or ischemia. If the ischemia continues; muscle & nerve cells are destroyed & result in contracture & loss of function

- ✓ Forearm & lower leg are the most common sites of compartment syndrome
- ✓ In the upper extremity, this condition is referred as Volkmann's contracture

**C/M:-**

- Early signs are progressive pain distal to the injury that is not relived by usual analgesic
- The over lying skin may appear normal because the surface vessels are not occluded
- Inability to extend the digits actively, pain results from passive extension of the digit
- Other symptoms when the condition progress; numbness, tingling, loss of sensation, pallor & coolness, absent peripheral pulse

**Management:-**

- Elevate the extremity & application of ice
- Fasciotomy
- Loosen the cast

**Venous thrombosis:-**

- Venous of the lower extremity & pelvis are highly susceptible
- Precipitating factors is venous stasis caused by incorrectly applied cast, prolonged bed rest & immobility

**Fat embolism:-** are often associated with fracture of long bones are a contributory factors in many deaths associated with fracture. There are 2 theories related to embolism:-

- Fat is released from marrow of injured bone & transmitted to the pulmonary capillaries

- Catecholamine released at the time of injury mobilizing fat from adipose tissue

### **Steps of fracture Healing:-**

- Fracture hematoma:- formation of semisolid clot around the end of fragments from extravasations
- Granulation tissue:- the hematoma changes in to the tissue known as granulation tissue which consists new blood vessels, osteoblasts, fibroblast
- Callus formation:- formation of partly calcified tissue about the end of the a broken bone; composed of cartilages, osteoblastes, calcium & phosphorus
- Ossification:- marked by ossification of callus that is sufficient enough to prevent movement at the site of fracture but the fracture is evident on X-ray
- Consolidation:- the distance between the bone fragments diminished & eventually closes
- Remodeling:- through the absorption of excess cells from areas of less stress & deposition of calcium & phosphorus to the areas subjected to stress

## **AMPUTATION**

Amputation is a surgical removal of all or part of an extremity

**Common indications** for amputation includes:-

- Circulatory impairment resulting from peripheral vascular disease (DM & arterosclerosis)
- Sever trauma:- when external & internal fixation is failed
- Chronic uncontrollable infection **e.g** chronic osteomyelitis
- Congenital deformity & Malignant tumor
- Gas-gangerine:- death of a part of the tissue due to infection

**Types of amputation:-** there are 2 types

- **Open (Guillotine) amputation:-**
  - ✓ Is an amputation reserved for emergency case
  - ✓ Performed when the limb is severely traumatized, contaminated & gas gangerine has already developed.

- ✓ The stump is not covered over with the skin flap; so the patient always requires antibiotic and strict sterile technique when cleaning. Once infection has been eradicated the patient undergoes stump closure by skin traction

### **Closed amputation:-**

- Is an elective or planned amputation
- The stump is covered & closed by a flap of skin
- Performed when there is no infection

### **Nursing management**

- A. Physical preparation for amputation:-
- If the patient is diabetic:- blood sugar should be controlled
  - Nutritional correction:- vitamin, protein, mineral to help in wound healing
  - Blood type & cross match should be done if the pt requires blood pre or post operatively
  - Skin preparation
- B. Preparation to receive after amputation:-
- Post operative bed
  - Hard board should be placed under the mattress to maintain good body alignment
  - Heavy tourniquet should be placed around the patient because the patient may develop bleeding
  - Elevate the stump for the first 24-48 hours by using a pillow
  - Observe for V/S, color of the skin and stump examination for the first 24-48 hours bleeding may occur; mostly arterial bleeding is common
  - Analgesic to prevent surgical pain
  - If possible the nurse should teach crutch walking

### **Complication of amputation:-**

- Haemorrhage
- Hematoma:- tumor like coagulating blood (aspiration & firm bandage)
- Stump oedema
- Joint contracture
- Phantom limb:- sensation that the limb is still attached to the body



## **ARTHRITIS**

Arthritis is inflammatory disease of the joints specially the joint lining. There are 2 main types of arthritis; rheumatoid & osteoarthritis

### **RHEUMATOID ARTHRITIS**

- It is a chronic systematic disease of unknown cause characterized most predominantly by recurrent inflammation involving the synovium or lining of the joint
- The disease primarily affects the joint cartilage & the articulare surface of the bones

#### **Etiology:-**

- The etiology of rheumatoid arthritis is unknown
- Usually it is regarded as the disorder of autoimmunity because the body for unknown reason produce abnormal antibodies that are directed against its own body

#### **C/M:-**

- Pain, swelling, heat, redness & limitation of function
- Morning stiffness lasting for 30 minutes or more; Inflamed joints tend to stiffness during the periods of rest
- Loss of appetite
- Painfull swelling of joints usually due to the accumulation of fluids in the joint cavity or hypertrophy of the joint lining membrane
- Muscle atrophy from disuse & inflammation

#### **Therapeutic & Nursing management:-**

The primary objective of the treatment in the acute stage of rheumatoid arthritis is prevention of deformity

Other therapeutic goals are:-

- Maintenance of joint mobility and muscle power. Inflammation scaring or other mechanical damage to the joint structures results in pain & disability.
- The paint is in an effort to avoid the pain tends to immobilize the affected joint
- In the acute stage; the joint should be rested by the application of splint or other

- mechanical device. The joint should not be “freezed” in flexed position
- Control of pain; to promote the patient comfort pain must be alleviated; Salicylates are given in large dose in the accordance with the patient’s response
- Heat application is also helpful, since heat relives pain, stiffness, inflammation muscle spasm
- Frequent periods of bed rest during the day take weight off the joints; If the joint
- inflammation is sever, the patient is ofcourse be placed on complete bed rest
- Drug therapy; ASA or other forms salicylates when used sufficient amount has anti-inflammatory as well as an analgesic action in the treatment of rheumatoid arthritis.
- Other anti-inflammatory drugs used are indomethacine & phenylbutazon but those drugs are capable of producing sever toxic effect

### **SEPTIC ARTHERTIS (INFECTIOUS OR BACTERIAL)**

- It is caused by invasion of the joint cavity with micro-organism. Various organisms are responsible including staphylococcus aureus, streptococcus, diplococcus pneumonia & Neisseria gonorrhea
- Factors increasing the risks are:-
  - ✓ Previous trauma
  - ✓ Arthritic disease
  - ✓ Treatment with immunosuppressant drugs
  - ✓ Site of active infection (hematogenous)

### **C/M:-**

- Inflammation of the joint cavity cause sever pain, erythema & swelling of one or several joints, fever & or shaking chills often accompany arthecular symptom

### **Dx:-**

Precisse Dx is made by aspiration of the joint & culture of the synovial fluid

Non specific blood findings includes leukocytosis & increased ESR

### **Management:-**

- Requires prompt diagnosis & treatment to prevent joint destruction
- Administration of proper antibiotics particularly
- Open surgical drainage may be required

**Nursing management:-** includes

- Immobilization of the affected joints to control the pain
- Pain & fever should be monitored & treated appropriately
- Strict aseptic technique should be used during assisting with joint aspiration or drainage procedure

## **GOUTY ARTHRITIS**

Gouty arthritis is characterized by recurrent attacks of acute arthritis in the associated with increased serum uric acid level. Gouty arthritis is Classified as:-

Primary gouty arthritis:- due to hereditary error of purine metabolism leads to over production or retention of uric acid (hypoxanthine guanine phosphoribosyl transferase HGPRT)

Secondary gouty arthritis:- may be related to medication known to inhibit uric acid excretion due to drug that increase the rate of cell death such as chemotherapeutic agents in treating leukemia

### **Cause:-**

- Uric acid is the major & product of purine catabolism & primarily excreted through urine by the kidney
- Hereditary defect of purine metabolism
- Secondary cause like cytotoxic drugs

### **C/M:-**

- May occur in one or more joints but usually less than 4
- The affected joint may appear dusky or cyanotic & the extremity tender
- The inflammation of the great toe (podagra) is most commonly the initial involvement & occurs in 75% of the cases. Other joints involved are tarsal, ankle, knee, wrist
- Rapid on set with swelling & pain
- The individual attack subsides with treated or untreated in to 2-10 days
- Deposition of sodium urate crystals (tophi)

**Diagnostic studies:-**

- Established by finding crystals of urates in the synovial fluid of in the inflamed joints
- Elevation of serum & urine uric acid level (normal in :Male:- 2.5-6.5 mg/dl, Female: 2.5-5.5 mg/dl)
- Leukocytosis & anemia
- Elevated erythrocyte sedimentation rate (ESR)

**Management:-****Aim:-**

- To terminate the acute attack
- Treated with one of the 3 types of anti-inflammatory drugs colchicine, NSAID or SAID

**Nursing management:-**

- Administration of medication
- Observation of side effects
- Increasing daily fluid intake to 2000 ml; helps to eliminate the excess urate crystals
- Bed rest & joint immobilization during the time of acute attack
- Bed cradles to prevent pressure from bed linens on the affected joint (great toe)

**OSTEOMYELITIS**

Osteomyelitis is an infection of bone & bone marrow

**Cause:-**

Different kinds of M.O including Virus, Bacteria & fungus; mostly by bacterial origin (staphylococcus)

**Pathogenesis:-**

- Organisms reach the bone to cause infection by one of the three ways:-
- Hematogenous spread (through blood)
- Extension from a point of infection (chronic wound)
- Direct introduction of organisms to the bone by trauma

**C/M:-**

- Chills, sudden high grade fever
- Rapid pulse & generalized malaise

- Swollen & extremely tender
- An abscess of the bone is formed

#### **Treatment & Nursing management:-**

- Antibiotics to which the organisms are sensitive is the treatment of choice.
- Usually antibiotic given in IV or IM to maintained a sustained therapeutic level
- It is a disease that demands a good Nursing care
- The affected area may be mobilized with splint until the wound has healed
- Immobilization decreased pain & muscle spasm
- Pillow support to **adjacent** joint & maintenance of good alignment are comfort measures
- Careful handling is essential because of the possibility of cross infection& patho-logical fracture
- Frequent problem encountered is an unpleasant odor due to the foul drainage of the bone infection

## Information sheet 3- providing care for patients with respiratory disorders

### 1.1 Review of anatomy & physiology of the respiratory system.

The respiratory system is divided into two major sections:

- i    **upper respiratory tract:** this consists of :
  - nose & para nasal sinuses
  - pharynx
  - larynx

Upper respiratory tract serves as a conducting passage for air as it enters & leaves the lungs. its primary functions are to warm, humidify, & filter entering air & to protect the lower airway from foreign material.

- ii.                    **lower respiratory tract :**

**B**egins at the trachea, or windpipe, & ends at the alveoli (air sacs in the lungs where gas exchange takes place). it includes:

- right & left main stem bronchi / large airways of lungs/
- segmental & sub segmental bronchi
- bronchioles
- alveolar sacs
- The lungs are covered by two thin membranes:
  - visceral pleura: connected to the lungs.
  - parietal    >>    : lining the ribs & chest wall.
- pleura cavity: is the potential space between visceral & parietal pleura. it contains serous fluid (lubricates, so that it prevent friction rub of the two pleura membrane.
- The lungs are located within the thoracic cavity and it is surrounded by the ribs and muscles.

#### **Basic pulmonary physiology**

The function of the lungs is to maintain homeostasis of arterial blood .by supplying oxygen / $O_2$  / & removing excess carbon dioxide / $CO_2$  /, respiration maintains the pH of the blood, thus protecting vital tissues & nourishing the cell.

### Respiration refers to two processes:

- 1) **external respiration** is the act of breathing .it has four components. these are :
- ventilation or the mechanical movement of air in and out of the lungs.
  - distribution of air though out the bronchial tree
  - diffusion of the gas molecules /  $O_2$  &  $CO_2$ / from area of higher concentration to an area of lower concentration a cross the respiratory membrane.
  - perfusion or the movement of blood through tissues & organs, like the lungs.

In atmospheric air (mixture of gases) at the sea level, it has a pressure equal to 760 mmhg.each of the gases exerts a pressure to its percentage of the whole mixture. this is called partial pressure.

**The composition of atmospheric air** is approximately as follows:-

- nitrogen, 79%
- oxygen, 21%
- carbon dioxide, 0.04%
- partial pressure of  $O_2$  =  $21\% \times 760 \text{ mmhg} = 159.6 \text{ mmhg}$
- $p_{N_2} = 79\% \times 760 \text{ mmhg} = 600 \text{ mmhg}$
- $p_{CO_2} = 0.04\% \times 760 \text{ mmhg} =$

**The composition of alveolar air is:-**

- |                   |          |
|-------------------|----------|
| • Nitrogen, 80%   | 573 mmhg |
| • Oxygen, 14%     | 100 mmhg |
| • $CO_2$ , 5.5-6% | 40 mmhg  |
| • Water vapour,   | 47 mmhg  |

- 2) **Internal respiration;** occurs at the cellular level. hemoglobin in the blood releases  $O_2$  to the cell. in turn,  $CO_2$ , a waste product of metabolism. the blood in the capillaries arriving at the tissues has high pressure of oxygen than tissue fluid, & a lower pressure of  $CO_2$ , so that  $O_2$  diffuses out of the capillary &  $CO_2$  passes back into them. any disease state that interferes with these steps results in **hypoxemia**. for example, a collapse or an obstruction of a lung section interferes with ventilation of those alveoli. some diseases /pneumonia, pulmonary edema, emphysema / involve the structure of the respiratory membrane & thus block alveolar capillary diffusion.

## Nursing assessment of patient with respiratory disorder

- Respiratory assessment is a vital part of nursing care .it may reveal changes in respiratory function that can threaten well being.
- A thorough assessment of an individual's respiratory status should be performed
  - ✓ On admission to the hospital
  - ✓ At regular intervals during an illness episode
  - ✓ During routine health evaluation & screening.
- The main components of respiratory assessment include:
  - i. nursing history
  - ii. physical assessment
  - iii. review of laboratory
  - iv. diagnostic study results.

## Taking a respiratory history

- Begin the history by determining the person's chief complaint.
- Try to place the development of symptoms with in a time frame / e.g. Months or years / .complete information should be obtained to verify the exact nature of major manifestation of broncho-pulmonary disease such as **dyspnoea, cough , sputum ,production, haemoptysis, & pain with breathing / pleurtic pain /**

## Dyspnea:

It is the most common complaint of persons with respiratory disease.

**Def.:-**it is the uncomfortable, distressing sensation of difficult or labored breathing. It is subjective experience.The **term shortness of breath is** often used to describe dyspnea ask the aggravating & relieving factor. Dyspnea can be acute, chronic, progressive, recurrent or paroxysmal.

**Cause:-**it is due to increase lung rigidity, air way resistance or loss of lung elasticity by lung disease such as pneumonia, pulmonary embolus, pneumothorax, asthma, chronic bronchitis, emphysema, upper airway obstruction, CHF.

**Cough & sputum production:** explore the report of a cough to determine its exact **nature**. A” loose” sounding cough suggests mucus retention. A **dry hacking** cough indicates airway irritation



from an obstructive disorder .ask whether the cough is weak or strong & productive or unproductive of secretions. Ask specifically how much mucus is expectorated per day in teaspoons or cups. In general ask color, quantity, consistency of sputum & odor of sputum.

- **Character of cough;**
- **Dry & hacking** cough:-may be due to viral infection, bronchogenic carcinoma
- **Loud & harsh**:-irritation in upper airway.
- **Wheezing**:-associated with bronchospasm.
- **productive**:-indicates broncho-pulmonary disease.
- **Time of cough & position of patient** paroxysms at night:-asthma, chf
- **color of sputum**
  - ✓ purulent / yellow or green / mucus indicates infection  
e.g. - lung abscess pneumonia
  - ✓ mucopurulent sputum: - contains mucus from an airway disease / ex. bronchitis, bronchiectasis / and pus from infection.
  - ✓ blood – streaked sputum indicates rupture of pulmonary capillaries.
  - ✓ pink, watery, frothy sputum is typical of an acute episode of pulmonary edema / a symptom of left ventricular failure/.

### **Consistency of sputum**

- Determine whether the sputum is thick, thin, or frothy.

### **Odor of sputum**

- Normal sputum is odorless.

**Haemoptysis:** is the coughing up/expectoration of blood or it is blood stained sputum.

**Causes:-**infections; bronchiectasis, pneumonia

- Neoplasm
- pulmonary infarction
- Tuberculosis
- Lung abscess

**Medications & respiratory treatment.**

**Past related medical history;**

- ask the person about any previous incidence of respiratory diseases / e.g. pneumonia, bronchitis , tuberculosis / ,
- ask if the person has had any other diseases of note, particularly cardiovascular disorders, cancer etc. history of any known or suspected allergies.

### **Environmental factor;**

- question the person about home & work environments.
- determine whether there has been occupational or other exposure to substances harmful to the lungs, such as chemicals, asbestos, dust, or other pollutants.

### **physical assessment**

**Inspection** :- observe the following :

- Facial features: look for pallor, cyanosis of the lips & mucous membranes, flaring of nares during inhalation .and note neck vein distention.
- Appearance of chest wall: note the shape, presence of surgical scars, pattern and character of superficial blood vessels, and symmetry of chest wall motion with each chest movement.
- Respiratory pattern : note the rate , depth , & pattern of speech coordinated with respiration .breathing pattern can be :-
- Normal breathing: - a respiratory rate of 10- 20 breaths per minute.
- Tachypnea: - increased respiratory rate over 20 breaths per minute.
- Bradypnea: -decreased respiratory rate under 10 breaths per minute.
- Apnea:- total cessation of airflow to the lungs
- Hyperpnea:-increase in depth of respiration.
- Hyperventilation:-increase in depth & rate of respiration.
- Hypoventilation: slow or irregular respiratory pattern with shallow respirations.
- Hypoxia =this is situation in which there is lack of oxygen in the body.
- Hypoxaemia:-oxygen deficiency in the blood.
- Hypercapnia:-is the retention of  $\text{CO}_2$  in the blood i.e. The  $\text{pCO}_2 > 45$  mmhg at rest.
- Chyane-stokes respiration:- a cyclic pattern of progressively deeper respirations , followed by progressively shallow respirations, & a period of apnea e.g. Chf, drug over dose , renal failure
- Kussmoul's respiration: - deep, regular, breaths, usually at a rate greater than 20 per minute. e.g. dka, renal failure, metabolic acidosis states. inspection also includes observation of:-

- ✓ The distal digits for clubbing
- ✓ Color of nail beds
- ✓ Body skin color & temperature
- ✓ Swelling in extremities or dependent body parts.
- ✓ Level of consciousness
- ✓ Pulse rate
- ✓ Presence of pulsus paradoxus / drop in blood pressure of more than 10mm hg during inspiration /.

### **Palpation**

- Palpation is used to evaluate painful or abnormal areas on the chest wall, to test for symmetry of chest expansion, & to detect tracheal deviation& tactile fremitus.
- Note tenderness, masses or bulges, or crackling feelings (crepitus) that may indicate an air leak into the subcutaneous tissue
- Normal chest expansion during inspiration is symmetrical
- The trachea is normally in a straight, vertical position, pneumothorax can cause a shift in the trachea from its normal midline position

### **3) percussion:-**

- Percussion of the lung normally reveals a hallow, loud, low -pitched resonant sound because the lung is air- filled.
- Dullness may indicate masses, fluid, or tissue filled lung space
- Hypertesonant indicates hyperinflation of the lung with air.

### **4) Auscultation**

- Anterior & posterior chest should be auscultated for various breath sounds
- Normal breath sound:-
  - ✓ Bronchial breath sounds (expiration is longer than inspiration) over the trachea
  - ✓ Broncho vesicular sound (inspiration is equal to expiration) over first & second anterior intercostals spaces & posterior between scapula
  - ✓ Vesicular sound (inspiration is longer than expiration) over all lung area
- Adventitious breath sound:- are abnormal sounds that occur from air passing through narrowed airways or fluids or form an inflammation of lung pleura. The major are:-
  - crackles
  - wheezes
  - friction rubs

### **Clinical implications of abnormal lung sounds:-**

- Absent to decreased breath sound:-is due to impaired ventilation / severe atelectasis , consolidation /
- Bronchial breath sound: - associated with lung consolidation.
- Crackles /rales/:- impaired ventilation /mucus retention, fluid retention in small airway /.
- Rhonchi: - fluid or mucus retention in large airways / pneumonia / pulmonary edema /.
- Wheezes :- bronchoconstriction / asthma/
- Pleural friction rub: pleural inflammation / pleuritis/.

### **Common diagnostic procedures for respiratory conditions and nursing responsibilities** **radiography**

- i) chest x-ray:- normal pulmonary tissue is radiolucent.
- ii) Tomography
- iii) **sputum examination**
- iv) **examination of pleural fluid & pleural biopsy**

## **Nursing intervention**

- Obtain informed consent
- With hold food & fluids for 6 hours before the test to reduce the risk of aspiration
- Explain the procedure to the patient to reduce fear
- Administer prescribed preoperative medications (usually atropine)
- Suppress the cough reflex
- Sedate the patient
- Relieve anxiety
- Remove contact lenses, dentures, & so on
- The procedure is usually performed under local or general anesthesia
- After the procedure, the patient is given nothing by mouth until the cough reflex returns
- monitor respiratory status
- observe the patient for cyanosis, hypotension, tachycardia & arrhythmia, haemoptysis, dyspnea, bronchospasm& blocked air way.

## **Oxygen therapy**

### **General consideration**

- 1. Oxygen is an odorless, tasteless, colorless transparent gas that is slightly heavier than air.**
- 2. Oxygen supports combustion, so there is always danger of fire when oxygen is being used**
  - A. Avoid using oil or grease around oxygen connections.
  - B. Eliminate antiseptic tinctures, alcohol & ether in immediate  $O_2$  environment.
  - C. Do not permit any electrical devices / radios, heating pads & so on/ in or near an  $O_2$  tent.
  - D. Keep the  $O_2$  cylinder secured in an upright position away from heat.
  - E. Post no smoking signs on the patient door
  - F. Have fire extinguisher available.

**Defn:** - oxygen therapy is the administration of  $O_2$  at a concentration greater than that found in the environmental atmosphere.

**goal:** - to provide adequate transport of oxygen in the blood while decreasing the work of breathing & reducing stress on the myocardium.

**oxygen transport to the tissues depends on factors such as:-**

- Cardiac output
- Arterial oxygen content
- Adequate concentration of hemoglobin & metabolic requirements.

### **Clinical assessment**

1. A change in the patient's respiratory rate or pattern may be one of the earliest indicators of the need for oxygen therapy.
2. Other signs of hypoxia, or hypoxemia.

**Hypoxemia** (a decrease in the arterial oxygen tension in the blood)

**Clinical manifestation:-**

- Change in mental status (confusion, agitation, disorientation, lethargy, & coma)
- Dyspnea
- Increase in blood pressure
- Change in heart rate
- Central cyanosis / late sign/
- Diaphoresis
- Cool extremities

### **Types & treatment of hypoxia**

**Cause of hypoxia:-**

1. Severe pulmonary disease / inadequate  $O_2$  therapy/
2. Extra pulmonary disease / inadequate  $O_2$  delivery/

## **Types of hypoxia:-**

### **a) Hypoxemic hypoxia**

- it is a decreased  $O_2$  level in the blood resulting in decreased  $O_2$  diffusion into the tissue.

**Causes:** - hypoventilation

- High altitude
- Atelectasis
- Pulmonary diffusion defect

**Rx** :- increasing alveolar ventilation

- providing supplemental  $O_2$ .

### **b) Circulatory hypoxia**

The hypoxia is due to inadequate capillary circulation.

**cause:** - decreased cardiac out put.

- ✓ Local vascular obstruction
- ✓ Shock, cardiac arrest
- ✓ arterial oxygen ( $pao_2$ ) remains normal

**Rx:** - Identify & treat the underlying cause.

### **c) Anemic hypoxia**

- It is a result of decreased effective hgb concentration, which causes a decrease in the  $O_2$  carrying capacity of the blood.
- It is rarely accompanied by hypoxemia
- Co poisoning, because it reduces the  $O_2$  carrying of hgb, produces similar effects but is not strictly anemic hypoxia because hgb level may be normal.

### **d) Histotoxic hypoxia**

- Occur when toxic substance, such as cyanide, interferes with the ability of tissues to use available  $O_2$ .

### 3. Cautions in $O_2$ therapy

- Oxygen must be given with extreme caution to some patients. Excess  $O_2$  may produce toxic effects on lung & CNS or may depress ventilation. **E.g** in chronic obstructive lung disease patients the stimulus for respirations is a decreased  $O_2$  rather than an elevation in  $CO_2$  level.
- if high  $O_2$  concentration is administered it will remove the respiratory drive that has been created largely by the patient's low oxygen tension.
  - a. Ventilation is reduced
  - b. Acute acidosis &  $CO_2$  necrosis may follow.

**Oxygen toxicity:** - serious side effects are :-

- Oxygen induced hypoventilation (prevented by giving low- flow  $O_2$  rate of 1 to 2 l/min)
- Atelectasis
- The most serious & insidious hazard  **$O_2$  is toxicity**, which may occur when too high a concentration of  $O_2$  ( greater than 50%) is administered for extended period ( longer than 48 hours)

**C/m:-**

sub-sternal distress, parasthesia, dyspnea, restlessness, fatigue, & progressive respiratory difficulties.

**prevention:** - use  $O_2$  only when prescribed.

- Minimize duration during high concentration of  $O_2$  administration.

#### **Methods $O_2$ administration**

- i. Giving  $O_2$  by mask
- ii. Giving  $O_2$  by nasal catheter
- iii. Oxygen tent



## **Chest physiotherapy**

It includes

- i. Postural drainage
- ii. Chest percussion & vibration
- iii. Breathing exercises/ breathing retraining, & effective coughing.

### **postural drainage exercise**

postural drainage is the use of specific positions so that the force of gravity can assist in the removal of bronchial secretions from the affected bronchioles in to the bronchi and trachea.

#### **Underlying principles**

- i The patient is positioned so that the disease area (s) is in a vertical position, and gravity is used to assist drainage of the specific segment(s).
- ii The position assumed are determined by the location, severity and duration of mucus obstruction.
- iii The exercises are usually performed two to four times daily, before meals and at bedtime.

#### **Nursing management**

- i. Make the patient comfortable before the procedure starts and as comfortable as possible while he assumed each position.
  - A. Bronchodilator medications may be inhaled before postural drainage to reduce bronchospasm, decrease thickness of mucus and sputum, and combat oedema of the bronchial walls.
  - B. Use a back rest to prop up patient to desired height if his bed is not adjustable; have a sputum pot ready.
- ii. Use a stethoscope to determine the areas of needed drainage.
- iii. Upper lobes are generally drained by upright positions; lower and middle lobes are drained by head – down position.
- iv. Place patient in left prone and left oblique positions / simultaneously / -this will give additional drainage to middle lobe and lateral segments of the right lower lobe; assuming the right prone

and right oblique position /simultaneously / will give additional drainage to middle lobe and lateral segments of the left lower lobe.

- v. Encourage the patient to cough after he has spent the allotted time in each position.
- vi. Encourage diaphragmatic breathing throughout postural drainage exercises; this helps widen airways so that secretions can be drained.
- vii. Chest wall percussion / by another person/ may be desirable to loosen and propel sputum in the direction of gravity drainage.
- viii. Evaluate patient's colour and pulse the first few times he performs these exercises.
- ix. Help the patient to brush his teeth and use mouthwash after postural drainage.
- x. Encourage patient to rest in bed following the procedure.

### **Chest percussion (clapping) and vibration**

percussion and vibration are manual techniques designed to loosen secretions and promote drainage of mucus and secretions from the lungs while the patient is in the position of postural drainage indicated for his specific lung problem. the procedure requires trained personnel.

### **Breathing exercises**

Breathing exercises are exercises and breathing practices that are utilized to correct respiratory deficits and to increase efficiency in breathing.

### **Upper respiratory disorders**

#### **Tonsillitis: -**

Definition:- it is an inflammation & enlargement of the tonsil tissue,

**Causative agent:-** group A streptococcus

- ✓ It can be viral in origin
- ✓ it is very common up to the age of 15 years.

**Predisposing factor:-** urti

- ✓ Lowered immunity
- ✓ Pollution

**Clinical features:-** sore throat, dysphagia, headaches, & fever

**Diagnostic evaluation**

- ✓ History
- ✓ Physical examination / visual inspection/
- ✓ Culture & sensitivity.

**Medical mx:**

- ✓ Amoxicillin 500 mg po. T id for 7 days or
- ✓ Erythromycin 500 mg. Po. Qid for seven days or
- ✓ Benz. Penicillin 2.4 million lu. Im. Divide stat

**Nursing intervention: -**

- ✓ Analgesics such as paracetamol 500 mg 2 tabs prn
- ✓ -tepid sponge
- ✓ -bed rest and soft diet
- ✓ -warm saline gargles

**Complication: -**

- ✓ Quinsy
- ✓ Laryngeal edema
- ✓ Acute otitis media
- ✓ Septicemia
- ✓ Chronic tonsillitis

**Chronic tonsillitis**

**Def.;**-it is due to recurrent acute tonsillitis attack.

**Etiology:** - similar to acute tonsillitis

**C/m;** - Recurrent pain

- Cough
- Enlarged cervical lymph node

**R/x:** - Nutritious diet & vitamins

- Antibiotic & analgesics
- Tonsillectomy / for recurrent tonsillitis which does not respond to antibiotic.

**Peritonsillar abscess/ quinsy/**

- ✓ it is a collection of pus outside the tonsillar capsule
- ✓ it is usually unilateral

**Etiology:-** streptococcus group a

**Risk factors:** - Age between 20 – 50 years

- Male affected more than females
- Foreign body embeded.

**C/M:** - pain, swelling, redness, trismus, salivation, malaise, fever, rupture

- cervical lymphadenopathy

**DDX:** - Acute tonsillitis & retro-pharyngeal abscess

**Complication:** - para-pharyngeal abscess, septicemia & hemorrhage

**Treatment (rx) :-**

- ✓ Antibiotic
- ✓ Oral hygiene
- ✓ Incision and drainage

## **Pharyngitis**

**def<sup>n</sup>** :- it is a febrile inflammation of the throat

**causative agent:-**

- viral organism 70%
- group a streptococcus is the most common bacterial organism.

### **Clinical features**

- ✓ Red pharyngeal membrane & tonsil
- ✓ Enlarged & tender cervical lymph nodes
- ✓ Fever, malaise, & sore throat

**Diagnosis:** - clinical sing & symptoms

### **Differential diagnosis:**

- ✓ Tonsillitis
- ✓ Laryngitis
- ✓ Diphtheria

### **Complication: -**

- ✓ Otitis media
- ✓ Mastoiditis
- ✓ Meningitis

**Medical rx:** - for bacterial causes

- ✓ Ampicillin 500mg po qid for 10 days **or**
- ✓ Erythromycin 500mg p.o. qid for 10days

### **Nursing intervention:-**

- Instruct bed rest during febrile stage of illness.
- Liquid or soft diet is provided during acute stage of the disease.
- Warm saline gargles or irrigation are used. Irrigating the throat properly is an effective means of reducing spasm in the pharyngeal muscle.
- Acetaminophen 500 mg 2 tabs at 6 hour interval.

- Mouth care can be given.

## **Laryngitis**

It is an inflammation of the larynx often occurs as a result of voice abuse, exposure to dust, chemicals, smoke, & other pollutant.

**Etiology:** - almost always virus

- bacterial invasion may be secondary.

**Risk factors:** - urti

- vocal misuse and over use
- irritation / smoking, alcohol /
- seasonal changes
- iatrogenic / intubations and endo-laryngeal surgery /

**C/F:-** hoarseness or complete loss of voice & severe cough

- Pain occurs in severe cases
- Stridor may be present in children
- Edema, exudates, congestion

## **Medical management**

- Resting the voice
- Avoid smoking,
- Bed rest
- Inhaling cool steam or aerosol
- Treat secondary bacterial infection with antibiotics.

## Nursing intervention

- i. Clearing airway:
  - ✓ Increase fluid intake
  - ✓ Humidifying the environment /inhaling steam/.
- ii. Promote comfort measures
  - ✓ Give analgesics / acetaminophen . . . /
- iii. Promoting communication
  - voice rest
- iv. Encouraging fluid intake
- v. Patient teaching – treatment regimen, prevention
- vi. Monitor & manage potential complication

## *Lower respiratory disorders*

---

### Acute tracheo-bronchitis

**Def: -** acute tracheobronchitis is an acute inflammation of the mucous mbranes of the trachea & the bronchial tree that often follows infections of the upper respiratory tract.

**Causative agents: -** it is often virus but the common bacterial causes are:-

- Streptococcus pneumoniae
- Haemophilus influenza
- Mycoplasma pneumonia
  - ✓ predisposing factors:-
- Pre- existing urti
- Inhalation of physical & chemical irritants gases & other air contaminants

### **Clinical manifestations:-**

- ✓ Initially, that patient has a dry, irritating cough & expectorates scanty sputum
- ✓ Fever, headache, & generalized malaise.

- ✓ As the infection progresses, inspiration may become noisy (inspiratory stridor) & more profuse purulent sputum may be present.



### **Medical management**

- Advice bed rest.
- Steam inhalation
- Advice fluid intake to thin the viscous & tenacious secretions.
- Dexamethorphan hydro-bromide 15-30mg p.o 3 to 4 times a day.
- Codeine phosphate 10 – 20 mg p.o. 3-4 times a day

### **Antibiotic treatment:-**

- It is indicated, when bronchitis is complicated by bacterial infections.

### **First line antibiotics**

- Ampicillin 500 mg p.o qid, for 7 days Or amoxicillin 500 gm p.o tid, for 7 days

### **Alternative antibiotic:-**

- Erythromycin 500 mg p.o qid for 7 days Or
- Tetracycline 500 mg qid, for 5-7 days Or
- Co - trimoxazole 480 mg 2 tabs po bid for 7 days

### **Nursing interventions:-**

- Encourage frequent coughing to remove secretions
- Advice the patient bed rest, steam inhalation & increase fluid intake.

### **Chronic bronchitis**

**Def: -** it is the presence of a productive cough that lasts 3 months a year for two consecutive years, in the absence of major lung disease (who). The accumulated secretions in the bronchioles interfere with effective breathing

**Causes: -** the major causes are:-

- Cigarette smoking
- Exposure to pollution

**Clinical manifestations:-**

- A chronic, productive cough in the winter months (recurrent coughing and sputum production)
- History of cigarette smoking & frequent respiratory infection
- Production of thick, gelatinous sputum ( greater amount's produced during super imposed infection)
- Wheezing and dyspnoea as disease progresses
- Recurrent acute respiratory infections followed by persistent cough

**Diagnostic evaluation**

A complete history, including family, environmental exposure to irritating substance, & occupational history, and also history of smoking (number of packs per day)

- physical examination
- chest x-ray
- lung function studies
- arterial blood gas analysis

**Medical management**

- Remove bronchial secretions
- Bronchodilators are prescribed to relieve bronchospasm & reduce air way obstruction.
- Postural drainage
- Increase fluid intake
- The patient must stop smoking

**Bronchiectasis**

**Def:-** bronchiectasis is a chronic abnormal & permanent dilatation of the bronchi and bronchioles.

**Causes:-**

- Pulmonary infections
- Obstruction of the bronchus
- Aspiration of foreign bodies & vomitus
- Pressure from tumors, dilated blood vessels & enlarged lymph nodes.

**c/m:** - Chronic cough (persistent or recurrent)

- copious amount of purulent sputum
- Haemoptysis (50-70%)
- Clubbing of the fingers

**Physical examination** : crackles, rhonchi, & wheezes may be heard

**Diagnosis:** - bronchography & bronchoscope & ct scan

**Medical management:-**

- Antibiotic based on the results of culture & sensitivity
- Postural drainage
- Bronchodilators may be given..

**surgical interventions :-**

- Segmental resections - remove a segment of a lobe.
- Lobectomy - remove lobe
- Pneumonectomy – remove an entire lung.
- Pneumonia is an inflammatory process of the lung parenchyma that is commonly caused by infectious agent.
- Pneumonia is the most common cause of death.

## ***Classification of pneumonia***

there are three classification methods:-

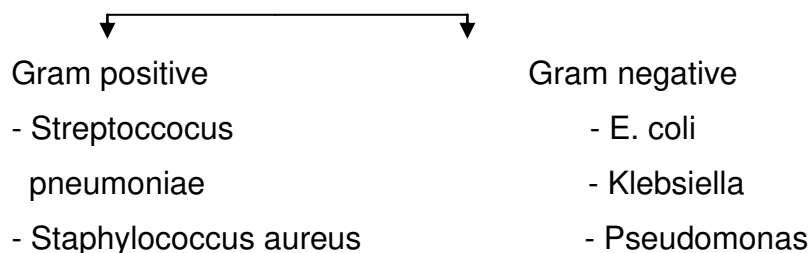
- i. Clinical
- ii. Etiological
- iii. Radiological

### **i. *Etiologic classification***

a/ **Infectious** - are the most common & most important

**1.Bacteria:** - can be -

a) aAerobic bacteria



b) anaerobic Bacteria

- Bacteroids

**2/ virus**

**3/ chlamydias**

**4/ mycoplasmas**

**5/ riketssiae**

### **ii. radio logic /anatomic/ classification**

**1 *Lobar pneumonia* :-**

- if a substantial portion of one or more lobes is involved

**2 *Broncho pneumonia:***

- it is distributed in a fashion, having originated in one or more localized areas with in the bronchi & extending to the adjacent surrounding lung parenchyma
- it is more common than lobar pneumonia

### iii. *Clinical classification*

- I. Community acquired pneumonia / CAP/
- II. Hospital acquired pneumonia / nosocomial/
- III. Aspiration pneumonia
- IV. Pneumonia in immuno compromised

### i. **Community acquired pneumonia**

- It is pneumonia in a community.

#### **Causative agent is: -**

- Typical or bacterial pneumonia caused by
  - ✓ Streptococcus pneumonia / 50 – 60% /
  - ✓ Staphylococcus aureus
  - ✓ H. Influenzae
- Atypical pneumonia / 20%/
  - ✓ Ricktesia
  - ✓ Chlamydia
  - ✓ Mycoplasmas
  - ✓ Fungus

**Treatment** - Amoxicillin 500 mg po. Tid 7 days or

- Ampicillin 500 mg po. qid for 7 days

For severe CAP

- Admit the patient
- Crystalline penicillin 150,000 – 250.000 lu/ kg/ 24 hours, divided in to 6 doses.

For atypical pneumonia mx:-

- Erythromycin 500 mg p.o qid for 7 days or
- Tetracycline 500 mg po qid for 7 days
- Erythromycin covers all causes of cap.

ii. **Hospital acquired pneumonia /nosocomial/ pneumonia**

- It is type of pneumonia acquired 48 hours after hospital admission

**Causative agents: -**

- Staph. Auerus
- Pseudomonas spp.
- Gram negative enteric bacilli / e. coli

**Treatment**

For gram negative bacteria: - gentamycin 80 mg iv / im tid for 7 – 10 days

For gram positive bacteria (s.aureus): - cloxacillin 500 mg po / iv qid for 7 – 10 days

iii. **Aspiration pneumonia**

**Predisposing factors for aspiration pneumonia are: -**

- Coma / unconsciousness
- Seizure.

**Causative agents: -** Most of them are normal flora of oropharynx.

- They are anaerobic oral spp.
- They can cause necrosis of lung / suppuration/ as a result they cause lung abscess.

**Clinical features: -**

- Fever, chillness
- Weight loss
- Pluratic chest pain
- Blood streaked sputum

**Treatment**

- Metronidazole 500 mg po tid
- Amoxicillin 500 mg po / iv tid

#### iv. pneumonia in immuno compromised patient

##### **Causative agents: -**

- Opportunistic / 50%/
  - Pneumocystic carinii, pneumonia / pcp /
  - Cytomegali virus / cmv /
- Bacterial : - Those mentioned

**Treatment:-** Co – Trimoxazole 480 mg 4 tabs tid for 21 days

##### **Clinical feature:-**

- Cough : - first dry then rusty sputum / purulent/ after 24 hours
- Fever-
- Pleuritic chest pain / aggravated by inspiration /
- Tachycardia
- Bronchial breath sound, dullness & some times crepitation

**Dx: -** WBC & Differential count

- Sputum gram stain
- Chest x – ray

##### **Markers of severe pneumonia**

- Respiration rate greater than 30/ min / adult/
- Cyanosis
- Hypotension
- Confusion age > 60 years
- If more than or equal to two lobe is involved

##### **Complications;**

- para-pneumonic effusion
- empyema
- lung abscess
- lobar collapse
- sepsis

## **Atelectasis**

**Definition:**-it is collapse of an alveolus, a lobule, or larger lung units.

**Causes:** - obstruction of a branches by foreign body, or a plug of thick exudates.

### **Risk factors:-**

- Splinting of the chest due to pain
- Respiratory depression from opioids, sedatives, & muscle relaxants: & abdominal distention
- Post operative patients, bedridden patients
- Pleural effusion, pneumothorax

**C/M:** - Marked dyspnea

- Cyanosis
- Pleural pain
- Tachycardia
- Fever

### **Medical mx:-**

- Aspirate the plural effusion & pneumothorax
- Mechanical ventilation may be necessary
- Remove the causes & risk factors

### **Prevention:**

- Encouraging the patient to cough, aspirate secretion, & postural drainage.
- Turn the patient frequently.
- Coughing & deep breathing exercise postoperative

## **Lung abscess**

**Definition:** it is a localized necrotic lesion of the lung parenchyma containing purulent material; the lesion collapses & forms a cavity.

### **Causes:**

- Staphylococcus aureus: - is the most common aerobic organism.
- Anaerobic organisms are much more prevalent



**Risk factors:**

- Aspiration
- Mechanical / functional obstruction of bronchi by tumor, foreign body, or bronchial stenosis
- Tuberculosis, chest trauma, necrotizing pneumonia, pulmonary embolism

**Clinical manifestation:-**

- Fever
- Productive cough of moderate to copious amounts of foul – smelling sputum
- Pleurisy, chest pain, dyspnea, weakness anorexia, weight loss

**Diagnosis:** - history

- Dullness on percussion & decreased or absent breath sounds.

**Physical examination:-**

- Crepitation
- Chest x – ray, bronchoscope
- Sputum culture

**Medical management:** - admit the patient

- Cloxacillin 500 mg iv qid & change to po after 3 to 4 days
- Postural drainage & chest physiotherapy
- High protein & caloric diet

**Prevention**

- Appropriate antibiotic therapy before any dental procedure
- Oral hygiene
- Appropriate treatment of pneumonia

**Nursing intervention**

- Administer drugs as prescribed & monitor for any adverse effects.
- Chest physiotherapy
- Deep breathing & coughing exercise
- Proper nutrition /high protein & calories diet/ intake encouragement.
- Emotional support.
- Mouth care

## **Pulmonary emphysema**

It is an abnormal distention of the air spaces beyond the terminal bronchioles with destruction of the wall of the alveoli & finally lung loses its elasticity

- It is the end stage of a process that has progressed slowly for many years.
- It is irreversible problem

### **Predisposing causes: -**

- Cigarette smoking : - is the major cause
- Air pollution & infection

### **Clinical manifestation**

- Dyspnea
- Patient usually has a history of cigarette smoking and history of chronic cough
- Wheezing,
- Teachypnea
- The symptoms are exacerbated with a respiratory infection
- The onset is insidious
- Barrel chest & hyper resonant on percussion, decreased breath sound with ronchi
- Anorexia, weight loss, & weakness

**Dx:** - History & physical examination

- Chest x – ray

### **Medical Management**

- Bronchodilator:- given to dilate air way & these medications include:
  - Aminophylline, 5 mg/kg by slow i.v push over 5 minutes
  - Theophedrin 1 tab po tid
- Aerosol: - salbutamol aerosol inhalation 2 puff 3 – 4x/day
- Treatment of infection;

- ✓ Patients with emphysema are susceptible to lung infections & must be treated at the earliest signs of infection. The most common organisms are s.pneumonia & h. Influenza.
- ✓ Ampicillin 500 mg po qid for 7 – 10 days or
- ✓ Amoxicillin 500 mg po tid for 7 – 10 days or
- ✓ Co – trimoxazole 960 mg po bid for 7 days
- Oxygenation
  - ✓ Administer oxygen

## **Bronchial asthma**

**Definition** - it is an intermittent, reversible, obstructive air way disease in which the trachea & bronchi respond in a hyperactive way to certain stimuli.

### **Types of Asthma**

#### ❖ **Allergic asthma:-**

- It is caused by known allergen/ dust pollens, animals, dander, & food/.
- Most of the allergens are airborne & seasonal
- Family history of allergies
- Post medical history of eczema

#### ❖ **Idiopathic or non allergic asthma**

- It is not related to a specific allergens.
- Aggravating factors include common cold respiratory tract infections, exercise, emotions, & environmental pollutants.

#### ❖ **Mixed asthma**

- ♦ It is the most common form of asthma
- ♦ It has the characteristics of both allergic & idiopathic asthma.

### **Clinical manifestation**

- Cough
- Dyspnea
- Wheezing
- Personal & or family history of allergic disease.

**Diagnosis** - complete history & physical examination

- Chest x – ray :- over inflated lung
- Sputum & blood study (Ige ↑)

### **Treatment of Acute asthma attacks**

- Administer concentrated oxygen by mask ( 6 liters/ min)
- Rehydrate the patient
- Drugs rx –

#### **A. First line**

- Salbutamol 2 puff & repeat after 20 minute for the first hou **or**
- Aminophylline, 5mg/kg slow iv push over 5 minutes. the same dose could be repeated after 30 minutes.

#### **B. Alternative**

- Adrenaline, 1:1000, 0.5 ml sc. Repeat after 30 minute to 1 hour if patient doesn't respond.
- If response to initial therapy is poor, give the following

#### **First line: -**

- Aminophylline drip load dose 3-5 mg/kg in dextrose & water over 20 minutes. Then maintenance dose 0.6 mg/kg hour in 5% d/w.
- **Plus** hydrocortisone, i.v 200 mg stat
- **And/ or** prednisolone, 40 – 60 mg po in divide dose immediately after hydrpcortisone for 5 – 7 days.

### **ii ) Treatment of Chronic asthma**

#### **• Intermittent asthma**

- ✓ **First line:** - Salbutamol, inhalation 2 puff, 3 times a week
- ✓ **Alternative:** - thephedrine1 tab 3 times per day

#### **• Persistent asthma**

- ✓ **First line:** - salbutamol inhalation 2 puff 3 times/ day **or** theaphedrine 100 mg tid
- ✓ **plus** beclomethasone inhalation puff daily for two weeks. **Or**

✓ Prednisalone, 0.5 mg, po/ day.

**Prevention:** - avoid causative agents whenever possible.

## **Care of the patient with chronic obstructive pulmonary disease / COPD**

**COPD include:** - chronic bronchitis, bronchiectasis, emphysema, & asthma.

### **Nursing Diagnosis**

- Impaired gas exchange related to ventilation – perfusion inequality
- Ineffective airway clearance related to broncho constriction, increased mucus production
- Ineffective breathing pattern related to shortness of breath, mucus
- Self – care deficits related to fatigue 2<sup>0</sup> to increased work breathing
- Activity intolerance due to fatigue, hypoxemia, & ineffective breathing patterns.
- Knowledge deficit about self – care procedures.

### **Goal( plan)**

- a) Improvement in gas exchange
- b) Achievement of airway clearance
- c) Improvement in breathing pattern
- d) Independence in self – care activities
- e) Improvement in activity tolerance
- f) Compliance with therapeutic program 7 home care

### **Nursing intervention**

- Administer bronchodilators as prescribed
- Administer oxygen
- Encourage fluid intake
- Deep breathing exercise
- Perform postural drainage
- Encourage patient to begin to bathe self, dress self & walk
- Support patient in establishing a regular regimen of exercise
- Discuss with patient about drugs

**Potential complication of copd**

- Atelectasis
- Pneumothorax
- Status asthmatics
- Pulmonary hypertension

**Pleurisy/pleuritis**

- It is an inflammation of both layers of the pleura

**Clinical Manifestation:** - severe, sharp, " knifelike" pain during inspiration

- Friction rub
- The pain may be localized or radiates to the shoulder / abdomen

**Pleurisy may develop with:** -

- Pneumonia
- Urti
- Tuberculosis
- Pulmonary embolism

**Diagnosis:** -

- Chest x- rays
- Sputum examination
- Pleural fluid analysis
- Pleural biopsy

**Medical managment:** -

- Treat the underlying disease /pneumonia. . . /
- Analgesics / indometacin 25mg p.o tid for 1week

### **Nursing intervention**

- Turn frequently on the affected side to splint the chest wall / this lessen the stretching of the pleura/.
- Emotional support & teaching

### **Empyema**

- It is a collection of purulent liquid / pus/ in the pleural cavity.
- It may occur if the lung abscess extends through to pleural cavity.

### **Clinical management**

- Fever, anorexia, & weight loss
- Night sweating
- Chest pain
- Dyspnea

### **Diagnosis**

- History & physical examination
  - ✓ On auscultation absence of breath sounds
  - ✓ On percussion – dullness
- Chest x ray
- Pleural fluid analysis

### **Medical Management**

- a Thoracentesis: - if fluid is not too thick
- b Closed – chest drainage tube
- c Antibiotic

### **Nursing intervention**

- Resolution of empyema is prolonged process.
- Instruct breathing exercises
- Provide care specific to drainage of pleural fluid



## **Chest trauma**

**Chest trauma is an injury to the chest caused by any form of violence.**

- 1) Chest injuries are potentially life-threatening because of:-
  - (a) Immediate disturbances of cardio respiratory physiology and Hemorrhage; and
  - (b) Later development of infection, damaged lung and thoracic cage.
- 2) Patient with chest trauma may have injuries to multiple organ systems.
- 3) Patient should be examined for intra – abdominal injuries, which must be treated aggressively.

## **Altered physiology**

1. In penetrating injuries, some air escapes into the pleural space. (negative intrapleural pressure is replaced by atmospheric pressure).
2. A loss of negative pressure within the pleural cavity may cause collapse of the lung.
3. The change of pressure interferes with expansion of the uninvolved lung, and there is shifting back and forth of the collapsed lung and mediastinum.
4. This shifting interferes with filling of the right side of the heart, lessening cardiac output and causing cardiopulmonary collapse.

## **Emergency management**

The order of priority is determined by the clinical status of the patient.

**Objective:** - To restore normal cardio- respiratory function as quickly as possible.

This is accomplished by maintaining the **airway, restoring the chest wall integrity, and re-expanding the lung.**

### **1. Assess patient's condition physiological state.**

- A. Examiner's ear is placed close to patient mouth and nose, allowing him to listen at the airway, watch uncovered chest movements and monitor pulse- this provides a rough estimate of the adequacy of ventilation.
- B. Check neck for position of trachea, subcutaneous emphysema and distended neck veins.

### **2. Establish and maintain an open airway**

- A. Aspirate secretions, vomitus and blood from nose and throat via:

- ii Tracheal aspiration, if patient is unable to clear the tracheo-bronchial tree by coughing
- iii Utilize endo-tracheal tube if patient is bleeding from naso-pharynx or if trachea is injured (short – term use)
- iiii Employ bronchoscopic aspiration if necessary
- iiv Prepare for tracheostomy if necessary.
  - a. Tracheostomy helps to obtain clear, dry tracheo-bronchial tree, helps patient breathe with less effort, decreases amount of dead air space in the respiratory tree, and helps reduce paradoxical motion.
  - b. The use of a cuffed tracheostomy tube permits a closed system for air exchange when connected to a ventilator.
  - B. Stabilize the chest wall.
  - C. Free the pleural cavity of blood and air.
  - D. Sucking chest wounds should be closed with an emergency dressing. The presence of lung injury and chest tube drainage must also be considered.

### **3. Control hemorrhage**

### **4. Treat for shock. ( shock may be due to blood loss, impairment of cardio-respiratory function)**

- a. Use one or more intravenous infusion lines; obtain blood for baseline studies.
- b. Restore blood volume to adequate levels- plasma, plasma expanders, and electrolyte solutions.
- c. Give infusion rapidly.
- d. Monitor serial central venous pressure readings to prevent hypovolaemia and circulatory overload.

## **Pulmonary embolism**

Pulmonary embolism refers to the obstruction of one or more pulmonary arteries by a thrombus that originates somewhere in the venous system or in the right side of the heart.

### **Risk factors**

- **Venous stasis / slowing of blood flow in veins/ which may be due to:-**
  - Prolonged immobilization / post operative/
  - Prolonged period of sitting
  - Varicose veins
  - Spinal cord injury
- **Hypercoagulability / due to release of tissue thromboplastin often injury / surgery/ due to:-**
  - Injury
  - Tumor
  - Increased platelet count
- **Venous endothelial disease such as:-**
  - Thrombophlebitis
- **Certain disease states such as:-**
  - Trauma
  - Postoperative / postpartum period
- **Other pre disposing factors include:-**pregnancy & oral contraceptive use

### **Clinical Management:** - May be non specific

- Chest pain is the commonest symptom
- Dyspnea is the second most common symptom
- Tachypnea & haemoptysis
- Tachycardia / rapid & weak pulse/
- Cough & diaphoresis
- Syncope & sudden death
- Multiple small emboli can lodge in the terminal pulmonary arterioles, producing multiple small infarctions of the lungs.

## **Diagnostic evaluation**

- Chest x – ray
- Pulmonary angiography

## **Prevention:-**

Prevent deep vein thrombosis / active leg exercise to avoid venous stasis, early ambulation, & use of elastic stockings /.

- Anticoagulant therapy
- Avoid leaving iv catheter in veins for prolonged periods.
- Elevate legs above level of heart
- Advice against habits that increase venous stasis such as: -
  - ✓ crossing leg
  - ✓ Sitting or lying down for prolonged period
  - ✓ Wearing constricting clothing

## **Emergency interventions**

- ♦ Oxygen administration to relieve hypoxemia, respiratory distress, & cyanosis
- ♦ Open iv infusion
- ♦ Catheterize to monitor urinary output
- ♦ Iv diuretics

## **Medical management**

### **i Anticogulation therapy**

- Heparin 5,000 units iv followed by continuous infusion of 1,000 unit per hour is used to prevent recurrence of emboli.

### **ii Surgical intervention**

- Pulmonary embolectomy

### **Nursing intervention**

- Prevention:- preventing thrombus formation / ambulation, active & passive exercise to prevent venous stasis /.
- Pain management
- Oxygen administration
- Patient education
- Coping with anxiety

### **Lung cancer / bronchogenic carcinoma/**

#### **Risk factors:-**

- Tobacco smoke:- lung cancer is 10 times more common in cigarette smokers than nonsmokers.
- Second – hand smoke: - persons who are involuntarily exposed to tobacco smoke in a closed environment.
- Air pollution
- Occupational exposure: - chronic exposure to industrial carcinogens, such as arsenic, asbestos, radiation, etc.
- Low vitamin a intake
- Tuberculosis

### **Clinical manifestation**

- cough/ with or without sputum production/
- Wheezing
- Blood – tinged sputum
- Chest pain / late manifestation/
- Dyspnea
- Symptoms of pleural & pericardial effusion

**Diagnostic evaluation**

- Chest x – ray
- Cytologic examination of fresh sputum
- Lung scans

**Medical Management: -**

- ii Surgery: - surgical resection
- iii Radiation therapy
- iiii Chemotherapy

**Nursing intervention**

- Remove secretion from airway
- Deep breathing & coughing exercise
- Oxygen therapy
- Relieve anxiety

## Information sheet 4- providing nursing care for patients with cardiac disorders

### a. Congestive Heart Failure (CHF)

Congestive Heart Failure or CHF is a severe circulatory congestion due to decreased myocardial contractility, which results in the heart's inability to pump sufficient blood to meet the body's needs. About 80% of CHF cases occur before 1 year of age

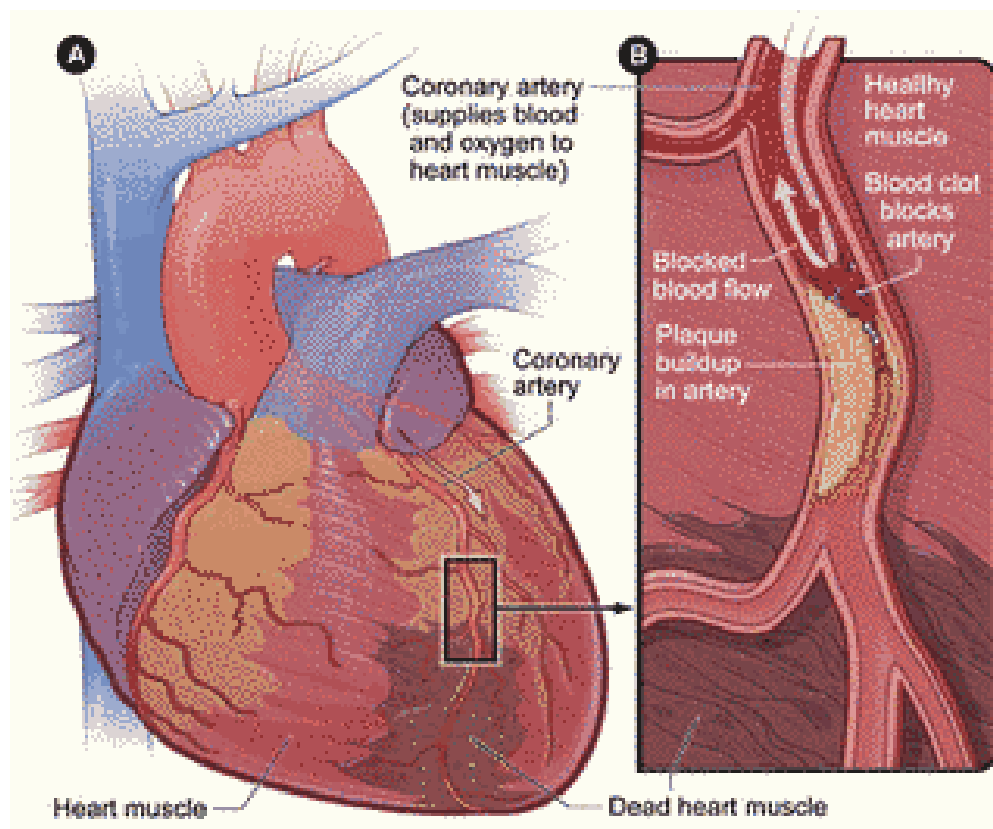


Fig 1Heart muscles

### ***Etiology***

1. The primary cause of CHF in the first 3 years of life is CHD.
2. Other causes in children include:
  - Other myocardial disorders, such as cardiomyopathies, arrhythmias, and hypertension
  - Pulmonary embolism or chronic lung disease
  - Severe hemorrhage or anemia
  - Adverse effects of anesthesia or surgery

- Adverse effects of transfusions or infusions
- Increased body demands resulting from conditions such as fever, infection and arteriovenous fistula
- Adverse effects of drugs, such as doxorubicin
- Severe physical or emotional stress
- Excessive sodium intake

3. In general, causes can be classified according to the following:

- Volume overload may cause the right ventricle to hypertrophy to compensate for added volume.
- Pressure overload usually results from an obstructive lesion, such as COA
- Decrease contractility can result from problems such as severe anemia, asphyxia, heart block and acidemia.
- High cardiac output demands occur when the body's need for oxygen exceeds the heart's output as seen in sepsis and hyperthyroidism.

## ***Assessment***

1. Right ventricular failure

- Signs of right ventricular failure are evident in the systemic circulation
- Pitting, dependent edema in the feet, legs, sacrum, back, and buttocks
- Ascites from portal hypertension
- Tenderness of right upper quadrant, organomegaly
- Distended neck veins
- Pulsus alternans (regular alteration of weak and strong beats noted in the pulse)
- Abdominal pain, bloating
- Anorexia, nausea
- Fatigue
- Weight gain
- Nocturnal diuresis

2. Left ventricular failure

- Signs of left ventricular failure are evident in the pulmonary system
- Cough, which may become productive with frothy sputum
- Dyspnea on exertion



- Orthopnea
- Paroxysmal nocturnal dyspnea
- Presence of crackles on auscultation
- Tachycardia
- Pulsus alternans
- Fatigue
- Pallor
- Cyanosis
- Confusion and disorientation
- Signs of cerebral anoxia

### **3. Acute pulmonary edema**

- Severe dyspnea and orthopnea
- Pallor
- Tachycardia
- Expectoration of large amounts of blood-tinged, frothy sputum
- Wheezing and crackles on auscultation
- Bubbling respirations
- Acute anxiety, apprehension, restlessness
- Profuse sweating
- Cold, clammy skin
- Cyanosis
- Nasal flaring
- Use of accessory breathing muscles
- Tachypnea
- Hypocapnia, evidenced by muscle cramps, weakness, dizziness, and paresthesias

### ***Diagnostic Evaluation***

1. Chest radiography reveals cardiomegaly and pulmonary congestion
2. CBC reveals dilution hyponatremia, hypochloremia, and hyperkalemia
3. ECG reveals ventricular hypertrophy

### ***Primary Nursing Diagnosis***

- *Decreased CO related to an ineffective ventricular pump*

### ***Medical Management***

Initial management of the patient with HF depends on severity of HF, seriousness of symptoms, etiology, presence of other illnesses, and precipitating factors. Medication management is paramount in patients with HF. The general principles for management are treatment of any precipitating causes, control of fluid and sodium retention, increasing myocardial contractility, decreasing cardiac workload, and reducing pulmonary and systemic venous congestion. The physician may also prescribe fluid and sodium restriction in an attempt to reduce volume and thereby reduce preload.

### ***Surgical Management***

Coronary bypass surgery, PTCA, other innovative therapies as indicated (e.g, mechanical assist devices, transplantation).

### ***Pharmacologic Intervention***

*Alone or in combination: vasodilator therapy (angiotensin-converting enzyme (ACE) inhibitors), angiotensin II receptor blockers (ARBs), select beta-blockers, calcium channel blockers, diuretic therapy, cardiac glycosides (digitalis), and others*

- Dobutamine, milrinone, anticoagulants, beta-blockers, as indicated
- Possibly antihypertensives or antianginal medications and anticoagulants

### ***Nursing Intervention***

1. Monitor for signs of respiratory distress
  - Provide pulmonary hygiene as needed
  - Administer oxygen as prescribed
  - Keep the head of the bed elevated
  - Monitor ABG values.
2. Monitor for signs of altered cardiac output, including
  - Pulmonary edema
  - Arrhythmias, including extreme tachycardia and bradycardia
  - Characteristic ECG and heart sound changes
3. Evaluate fluid status
  - Maintain strict fluid intake and output measurements
  - Monitor daily weights
  - Assess for edema and severe diaphoresis
  - Monitor electrolyte values and hematocrit level
  - Maintain strict fluid restrictions as prescribed
4. Administer prescribed medications which may include:
  - Antiarrhythmias to increase cardiac performance
  - Diuretics, to reduce venous and systemic congestion
  - Iron and folic acid supplements to improve nutritional status.
5. Prevent Infection
6. Reduce cardiac demands
  - Keep the child warm
  - Schedule nursing interventions to allow for rest
  - Do not allow an infant to feed for more than 45 minutes at a time
  - Provide gavage feedings if the infant becomes fatigued before ingesting an adequate amount
7. Promote adequate nutrition. Maintain a high-calorie, low-sodium as prescribed.
8. Promote optimal growth and development

9. As appropriate, refer the family to a community health nurse for follow up care after discharge.

### **Documentation Guidelines**

- Physical findings indicative of HF: Mental confusion, pale, cyanotic, clammy skin, presence of jugular vein distension and HJR, ascites, edema, pulmonary crackles or wheezes, adventitious heart sounds
- Fluid intake and output, daily weights
- Response to medications such as diuretics, nitrates, dopamine, dobutamine and oxygen
- Psychosocial response to illness

### **Rheumatoid heart disease (R.H.D)**

- Is the autoimmune disease occur 2-4 weeks of the throat infection (Rheumatoid fever)

**Cause:** - Streptococcus pyogenes (beta hemolytic group A)

**Predisposing factors** :

- Malnutrition
- Over crowding
- Lower socio economic.

### **Sign and symptoms**

- Intractable heart failure
- Valvular regurgitation/mitral valve
- Sinus dysrhythmia (Arrhythmia)
- Shortness of breath
- Crackles & wheezes in the lung

**Diagnosis** – Echocardiography (stenosis, magnitude of regurgitation specific chamber enlargement)

### **Treatment**

- Long term Antibiotic

- Pencillin parentally

## **Prevention**

- Early & adequate Rx of streptococcus infection
- Preventing & control epidemics in the community
- Every nurse should be familiar with S/s of pharyngitis throat culture
- Teach the patient about the disease
- Treatment
- prophylaxis

## **Infective Endocarditis**

- Is infection of the valve and endothelial surface of the heart?

### **Cause**

- Pneumococcal
- Staphylococcal
- Streptococcal
- Cardiac structural defect
- Valvular disorder
- Infection of right heart valves

## **Prevention**

Antibiotic prophylaxis is recommended for high risk patients immediately before and sometimes after the following procedures.

- Tonsillectomy or adenoidectomy
- Esophageal dilation
- Gallbladder surgery
- ventricular dilation
- Vaginal delivery
- Rheumatic fever is the most common cause of inflammation in the endocardium

- Infective endocarditis is a bacterial (or fungal) invasion of parts of endocardium
- Most commonly the bacteria invade the damaged heart valves, SD it is actually the late complication of rheumatic fever.

### **Sign and Symptom**

- Vague complaints of anorexia, malaise, wt loss & cough
- Mild fever of aching all over.
- In the brain, emboli cause head ache, focal neurological vicious & small strokes.

### **Diagnosis**

- Blood culture – streptococci are the most common bacteria causing endocarditis.

### **Treatment**

- High doses of penicillin IV for 4 wks to eradicate the source of bacteria on the heart valves.
- Bacterial endocarditis is a very serious infection, difficult to diagnose of difficult to treat →↑ high mortality.

### **Pericarditis**

- Refers to inflammation of the pericardium

### **Causes:**

- primary infection (bacterial, TB, viral)
- Secondary inflammation (RF)

### **Sign and symptom**

- Pericardial friction rubs (main Sx)
- Local substernal chest pain.

### **Treatment**

- Rest & analgesics
- Bacterial infection requires specific antibiotics.

## **Nursing management**

- Pain management with analgesics
- Physiological support
- Positioning
- Monitor the patient for heart failure

## **Myocardial infarction (MI)**

**Myocardial infarction** is the process by which area of myocardial cell in the heart is permanently destroyed.

**Cause** – Reduced blood flow in coronary artery Due to

- Arteriosclerosis
- Occlusion of an artery by emboli or thrombus
- Vasospasm (sudden constriction or narrowing of coronary artery)

**Diagnosis:** - Based on presenting symptom

- E.C.G
- Physical exam
- Patient history

## ***Primary Nursing Diagnosis***

- Altered tissue perfusion (myocardial) related to narrowing of the coronary artery(ies) associated with atherosclerosis, spasm, or thrombosis

## **Sign and Symptom**

- Sudden feeling of lower sub sternal crushing type of pain
- Pain may radiate to the shoulders & down the left arm.
- Pain is NOT relieved by rest or nitroglycerin
- Rapid & irregular pulse.
- Shock

- Abnormal ECG reading.

### **Medical Treatment**

- Treatment of MI is aimed at reducing the size of the infarct & helping the myocardium to continue to function until the scar is strong.
- Mgt include:
  - ✓ O<sub>2</sub> therapy
  - ✓ Diuresis → ↓ ventricular overload
  - ✓ Medicine to control arrhythmia
  - ✓ Bed rest & pain control.

### ***Nursing Interventions***

1. Monitor continuous ECG to watch for life threatening arrhythmias (common within 24 hours after infarctions) and evolution of the MI (changes in ST segments and T waves)..
2. Monitor baseline vital signs before and 10 to 15 minutes after administering drugs. Also monitor blood pressure continuously when giving nitroglycerin I.V.
3. Handle the patient carefully while providing care, starting I.V. infusion, obtaining baseline vital signs, and attaching electrodes for continuous ECG monitoring.
4. Reassure the patient that pain relief is a priority, and administer analgesics promptly. Place the patient in supine position during administration to minimize hypotension.
5. Emphasize the importance of reporting any chest pain, discomfort, or epigastric distress without delay.
6. Explain equipment, procedures, and need for frequent assessment to the patient and significant others to reduce anxiety associated with facility environment.
7. Promote rest with early gradual increase in mobilization to prevent deconditioning, which occurs during bed rest.
8. Take measures to prevent bleeding if patient is thrombolytic therapy
9. Be alert to signs and symptoms of sleep deprivation such as irritability, disorientation, hallucinations, diminished pain tolerance, and aggressiveness.
10. Tell the patient that sexual relations may be resumed on advise of health care provider, usually after exercise tolerance is assessed.



## **Prevention**

- Stop cigarette smoking
- Control hypertension
- Reduce fat in the diet
- Aerobic exercise

## **Angina pectoris**

- Is a clinical syndrome characterized by intermittent attacks of pain & pressure in the chest but not as severe as MI
- Is caused by insufficient blood supply to the myocardium (ischemia) but not causing necrosis of the muscle.
- Is precipitated by exercise, cold weather, or eating a large meal.

## **Sign and Symptom**

- Feeling of tightness in the chest.
- Pain which radiates to the neck or shoulder
- Feeling of numbness in arms or hands.

## **Treatment**

- Nitroglycerine quickly aborts the attack.

## Types of angina

- **Stable angina:** - predictable and consistent pain that occurs on exertion and is relieved by rest.
- **Unstable angina** (also called pre infarction angina or crescendo angina): symptoms occur frequently and last longer than stable angina. The threshold for pain is lower, and pain may occur at rest.
- **Intractable or refractory angina:-** severe incapacitating chest pain
- **Variant angina:-** (also called Prinzmetal's angina): pain at rest with reversible ST-segment elevation: thought to be caused by coronary artery vasospasm.

**Silent ischemia:** objective evidence of ischemia (such as electrocardiographic changes with a stress test), but patient reports no symptoms.

## Assessment

- E.C.G
- Blood lab

## Management

- Oxygen administration      - Nitroglycerin
- Beta adrenergic blocking      - Ca channel blocker
- Anti platelet agent & anti coagulant medication (A.S.A)

## information sheet 5- providing nursing care for patients with vascular disorder

### Introduction

Disorders of the circulatory system include any injury or disease that damages the heart, the blood, or the blood vessels. The three most important circulatory diseases are **hypertension**, **arteriosclerosis**, and **atherosclerosis**.

### Hypertension

Hypertension, or high blood pressure (BP), is defined as a persistent systolic blood pressure (SBP) greater than or equal to 140 mm Hg, diastolic blood pressure (DBP) greater than or equal to 90 mm Hg, or current use of antihypertensive medication. There is a direct relationship between hypertension and cardiovascular disease (CVD).

- Contributing factors to the development of hypertension include cardiovascular risk factors combined with socioeconomic conditions and ethnic differences.
- Hypertension is generally an asymptomatic condition. Individuals who remain undiagnosed and untreated for hypertension present the greatest challenge and opportunity for health care providers.
- Is the most important modifiable risk factor for stroke.
  - ✓ High blood pressure increases the risk of ischemic heart disease by 3-4 fold
  - ✓ The incidence of stroke increases approximately 8 fold in persons with definite hypertension
  - ✓ It has been estimated that 40% of cases of acute MI or stroke are attributable to hypertension

### ***Etiology of Hypertension***

- Primary (essential or idiopathic) hypertension: elevated BP without an identified cause; accounts for 90% to 95% of all cases of hypertension.
- Secondary hypertension: elevated BP with a specific cause; accounts for 5% to 10% of hypertension in adults.

### ***Risk Factors***

- Age: advancing
- Family Hx of HPN
- Obesity: ↑ intravascular volume
- Atherosclerosis
- High salt diet: ↑ water retention → ↑ BP
- Alcohol: ↑ plasma catecholamine
- Emotional stress: stimulates SNS

### **Secondary HPN**

- HPN from identified cause  
Ex. Renal disease

### **Risk factor**

- Renal disease / ↑ intra vascular volume
- Renal vascular hypertension (renal artery stenosis)
- Hypn associated with pregnancy

### ***Clinical Manifestations of Hypertension***

- Often called the “silent killer” because it is frequently asymptomatic until it becomes severe and target organ disease occurs.
- Target organ diseases occur in the heart (hypertensive heart disease), brain (cerebrovascular disease), peripheral vasculature (peripheral vascular disease), kidney (nephrosclerosis), and eyes (retinal damage).
- Hypertension is a major risk factor for coronary artery disease (CAD).
- Sustained high BP increases the cardiac workload and produces left ventricular hypertrophy (LVH). Progressive LVH, especially in association with CAD, is associated with the development of heart failure.
- Hypertension speeds up the process of atherosclerosis in the peripheral blood vessels, leading to the development of peripheral vascular disease, aortic aneurysm, and aortic dissection.
- Intermittent claudication (ischemic muscle pain precipitated by activity and relieved with rest) is a classic symptom of peripheral vascular disease involving the arteries.

- Hypertension is one of the leading causes of end-stage renal disease, especially among African Americans. The earliest manifestation of renal dysfunction is usually nocturia.
- The retina provides important information about the severity and duration of hypertension. Damage to retinal vessels provides an indication of concurrent vessel damage in the heart, brain, and kidney. Manifestations of severe retinal damage include blurring of vision, retinal hemorrhage, and loss of vision.

**Table 1 classification of hypertension**

Category	Systolic	Diastolic
Optimal	< 120	<80
Normal	<130	<85
High Normal	130-139	85-89
Grade 1 (mild hypertension) – Subgroup: borderline	140-159 140-149	90-99 90-94
Grade 2 (moderate hypertension)	160-179	100-109
Grade 3 (severe Hypertension)	≥ 180	≥110
Isolated Systolic Hypertension (ISH) – Subgroup (borderline)	≥140 140-149	<90 <90
<i>World Health Organization –ISH International Society of Hypertension</i>		

**Assessment & Dx**

- Proper history
- Physical exam
- Lab :- blood chem. – sodium & potassium
  - ✓ Cholesterol level
  - ✓ C.B.C
- Urinalyses

***Nursing and Collaborative Management***

- Treatment goals are to lower BP to less than 140 mm Hg systolic and less than 90 mm Hg diastolic for most persons with hypertension (less than 130 mm Hg systolic and less than 80 mm Hg diastolic for those with diabetes mellitus and chronic kidney disease).
- Lifestyle modifications are indicated for all patients with prehypertension and hypertension and include the following:

- ✓ Weight reduction. A weight loss of 10 kg (22 lb) may decrease SBP by approximately 5 to 20 mm Hg.
- ✓ Dietary Approaches to Stop Hypertension (DASH) eating plan. Involves eating several servings of fish each week, eating plenty of fruits and vegetables, increasing fiber intake, and drinking a lot of water. The DASH diet significantly lowers BP.
- ✓ Restriction of dietary sodium to less than 6 g of salt (NaCl) or less than 2.4 g of sodium per day.
- ✓ This involves avoiding foods known to be high in sodium (e.g., canned soups) and not adding salt in the preparation of foods or at meals.
- ✓ Restriction of alcohol
- ✓ Regular aerobic physical activity (e.g., brisk walking) at least 30 minutes a day most days of the week. Moderately intense activity such as brisk walking, jogging, and swimming can lower BP, promotes relaxation, and decrease or control body weight.
- ✓ It is strongly recommended that tobacco use be avoided.
- ✓ Stress can raise BP on a short-term basis and has been implicated in the development of hypertension. Relaxation therapy, guided imagery, and biofeedback may be useful in helping patients manage stress, thus decreasing BP.

### ***Nursing Management***

The primary nursing responsibilities for long-term management of hypertension are to assist the patient in reducing BP and complying with the treatment plan. Nursing actions include patient and family teaching, detection and reporting of adverse treatment effects, compliance assessment and enhancement, and evaluation of therapeutic effectiveness. Patient and family teaching includes the following:

- ✓ Nutritional therapy,
- ✓ drug therapy,
- ✓ Physical activity,
- ✓ Home monitoring of bp (if appropriate), and
- ✓ Tobacco cessation (if applicable).

### **Shock**

Severe hypotension is referred to as **shock**. It is inadequate perfusion of body tissue which requires rapid treatment to prevent irreversible cell death.

### **Classification of shock**

- ii Hypovolemic shock
- iii Cardiogenic shock
- iiii Circulatory or distributive **shock**

### **Hypovolemic shock**

It is the **most common** type of shock. Any conditions that reduce the volume within the vascular compartment by 15 to 25% can result in hypovolemic shock.

#### **Causes**

- Excess blood loss: trauma (most common), GI bleeding
- Loss of body fluid other than blood
- Movement of fluid into other body space (ex bowel obst. peritonitis.)

#### **Sign and symptom**

- Shallow & rapid respiration
- Cold, pale, & moist skin
- ↓ Urine output (<30ml/hr)
- ↓ Hct
- ↓ level of consciousness

#### **Management**

Major goals in the Rx of hypovolemic shock are to:

- Restore intravascular blood volume
- Re distribute blood volume
- Correct the underlying cause.

#### **Rx of shock**

- IV fluids (ringer lactate)
- Keep the patient warm
- Monitor U/S
- Encourage & comfort the patient



- O<sub>2</sub> therapy

### **Cardeogenic shock**

- Results from the inability of the heart to pump blood sufficiently to perfuse the cells of the body.
- Is most frequently caused by MI but also many result from other cardiac disorders that lead to low CO Ex. Arrhythmias, pulmonary embolism, severe valvular heart diseases.

### **Management**

- Vasopressor & cardiogenic agents Ex dopamine, Norepinephrine) to ↑ systemic arterial pressure.
- Supplying supplemental O<sub>2</sub>
- Controlling chest pain.
- IV fluids if hypovolemia presents

### **Circulatory/ distributary shock**

Occurs when blood volume is abnormally displaced in the vasculature. Ex when the blood volume pools in the peripheral blood vessels. The displacement of blood volume causes a relative hypovolemia because not enough blood returns to the heart → subsequent inadequate tissue perfusion.

#### **Types of circulatory shock**

- a. Septic shock
- b. Neurogenic shock
- c. Anaphylactic shock

#### **a. Septic shock**

- Is the most common type
- Occurs in septicemia when endotoxin or exstoxin are released from certain bacteria in the blood.
- Is most frequently caused by gram – ve bacteria in the blood.
- Is commonly seen in the hospital.

### **Risk Factors**

- Immune suppression
- Age, malnourishment
- Chronic illness.
- Invasive procedure

### **Management**

- ◆ Fluid replacement
- ◆ Broad spectrum antibiotics
- ◆ All invasive procedures must be carried with aseptic technique.

### **b. Neurogenic shock**

- Results from interference with the sympathetic N.S which helps maintain vasomotor tone.

### **Causes**

- Injury to spinal cord
- Spinal anesthesia
- Depressant action of drugs
- Glucose deficiency

### **Management**

Restore sympathetic tone by stabilization of spinal cord injury or positioning the patient properly after spinal anaesthesia. Elevate & maintain the head of the bed at least 30 degree to prevent neurogenic shock when a patient receives spinal or epidural anesthesia.

### **c. Anaphylactic shock**

- Is caused by allergic reaction
- Occurs rapidly & is life threatening?

### **Risk Factors**

- Penicillin sensitivity
- Transfusion reaction
- Bee sting

- Tetanus anti toxin

### **Management**

- Administer adrenaline 0.5IM
- Remove the causative agent
- IV fluids
- CPR if patient develops cardiac arrest.

### **Disorders of the veins**

#### **A. Varicose Vein (Varicositis)**

Dilated (enlarged) and often twisted vein just below the skin that develops when the valves in the vein no longer function properly or when blood volume in the vein increases. Varicose veins develop most commonly in the legs, but also occur in the anus (hemorrhoids), esophagus, and testes in males(varicocele). Varicose veins in the legs are characterized by a purplish-blue color. These veins may become prominent and readily visible.

**Cause** :- Incompetent venous valves

:- Thrombophlebitis

**Predisposing factor** – Prolonged standing

- Hereditary factor

## **Sign and symptoms**

- Varicose veins may be painful
- cause swelling of the ankles
- Ulcerations on the skin of the legs.
- Venous thromboses (blood clots) may develop within varicose veins. Dull ache
- Muscle cramp
- ↑muscle fatigue in lower extremity
- Ankle edema
- Nocturnal gramps
- Pain aggravated by pronged standing

## **Assessment & Dx**

- Duplex scan – to see severity of valvular reflux
  - ✓ To see anatomic site of reflux
- Air pleto mayelography to measure the changes in venous blood volume
- Venography:- to evaluate for valvular reflux

## **Nursing management**

- Advise the patient to avoid the case venous status
- Avoid wearing tights socks
- Changing position frequently
- Advice the patient to walk 1-2 mills each day
- Advise the patient to reduce wt.

## **Managements**

- Simple superficial varicose leg veins are treated by applying pressure all along their length with an elastic stocking.
- Larger varicose veins may be removed by a physician with a chemical solution or surgery.
- Dilation and inflammation of the veins in the membranes of the anus or rectum produce hemorrhoids, also called piles.
- Mild hemorrhoids may only itch, but advanced cases are painful and cause bleeding. Topical ointments may provide temporary relief from discomfort.

## Complications

- If these blood clots break off from the vein and enter the circulatory system, they may cause a dangerous obstruction elsewhere, as in the smaller arteries of the lungs.

### B. Phelebothrombosis &Thrombophlebitis

- **Thrombophlebitis** – is an inflammation of vein wall with formation of a clot.
- **Phelebothrombosis** – is formation of blood clot without previous inflammation Venous thrombosis-can occur in any veins but clinically it is most important & common to occur in leg veins.

**Thrombosis**, formation of a blood clot, or thrombus, inside a blood vessel.

- Forming a clump of various blood cells, the clot remains attached at its point of formation, partially or completely blocking the flow of blood through the vessel.
- A clot that breaks free and travels to a different part of the circulatory system is called an **embolism**.
- In the legs, thrombosis can occur in superficial & deep veins.
- There is always a danger that part of this **thrombus** may break off and produce pulmonary embolism.
- **Phlebitis**- inflammation of vein/inflammation of wall of the vein

### Risk factors for deep vein thrombosis and pulmonary embolism

#### 1) **Endothelial** damage/vessel wall injury

- Trauma
- Fractures
- Surgery
- Chemical irritants (I.V)

#### 2) **Venous stasis**

- Bed rest or immobilization
- Hx of varcositis
- Age (>65yrs)
- Obesity
- Spinal cord injury
- MI and HF

#### 3) **Increased coagulability**

- ♦ Cancer
- ♦ Septicemia
- Pregnancy
- OCP
- Polycythemia

## **Sign and symptom**

- 1/3 of patients have no S/S
- Some patients develop edema below the venous obstruction
- Tenderness can be felt in superficial thrombophlebitis.
- Deep vein thrombosis may causes tenderness of the calf muscle to palpation or to dorsiflexion of the foot.
- U/S (Doppler) – may show how good the blood flow is through arteries & veins.

## **Treatment**

- Blood anticoagulation is commonly used for blood vessels occlusions (both arteria and venous).
- Drugs that prevent coagulation are:
  - ✓ Heparin & warfarin (conmadin)
- Drugs that help dissolve a blood clot are:
  - ✓ Streptokinase & urokinase.
  - ✓ Prevention of thrombophlebitis
- Normal physical activity is the best prevention.
- Leg movement & elevating

## **C. Chronic venous insufficiency**

- Thrombophlebitis may cause destruction of delicate valves in veins.
- If valves are not competent, standing allows backflow of blood causing stasis & edema
- Venous insufficiency is characterized by:
  - ✓ Edema, stasis dermatitis
  - ✓ Dark pigmentation
  - ✓ Pain, stasis ulceration.
- Most leg ulcers occur from chronic deep vein insufficiency (75%) or severe varicose veins.
- Less frequently from arterial obstruction (20%)
- Other causes include burns, leg trauma & neurogenic disorders (5%)

## Treatment

- Tropical & systemic antibiotics
- Systemic antibiotics are the most effective rate in the Rx of leg ulcers.
- Provide good nutrition with enough vitamin for general health.
- If the cause is arterial insufficiency, revascularization surgery is considered.
- If venous insufficiency, varicose vein surgery may be considered.
- Keep the ulcer clean by frequent dressing change

## Causes

Are mostly related to inadequate fluid volume in the vascular compartment or something that causes the vascular compartment to be too big for the normal intravascular fluid volume. These are:

- Acute massive hemorrhage
- Loss of fluids by vomiting, diarrhea
- Spinal anesthesia → vasodilatation
- Spinal cord injury → same
- CHF, peritonitis, liver cirrhosis.
- Drug side effects (vasodilatation)

## Management

- Elevate legs at least of 2-3 hrs.
- Wear elastic stockings
- Avoid prolonged standing
- Surgery-venous legations & stripping.

## Diseases of the arteries

### A. Arteriosclerosis & Atherosclerosis

**Arteriosclerosis** – Hardening of the arteries caused by atherosclerosis.

**Atherosclerosis**- abnormal accumulation of lipid deposits & fibrous tissue with in arterial walls & lumen.

- It is the main acquired diseases affecting the arteries.
- Lipoproteins accumulate on the intima of an artery → plaque → atheroma

- An atheroma further narrows the lumen & becomes the site for a thrombus formation
- Thrombus formation or an atheroma can rapidly occlude an artery stopping blood supply to a specific region → infarction of that region.
- When this happens to a coronary artery a myocardial infarction results.

### **Atherosclerosis of:**

- Coronary arteries may cause MI
- The carotid & cerebral arteries may cause a stroke.
- The renal arteries may cause renal disease.
- The distal aorta, iliac, or femoral arteries may cause ischemia of legs. etc.

### **Sign and Symptoms**

- Pain on the lower extremities
- The pain subsides within a few minutes of resting
- His legs or feet feel cold & numb, and the
- Color may be pale
- Rest restores the legs to normal

### **Treatment**

- Treatment for major artery obstruction depends on findings by arteriography & the condition of the tissue.
- In advanced cases, gangrene may require amputation.
- In the case if the obstruction is a fresh thrombus, thrombectomy may be done.

### **Prevention**

- DM commonly causes peripheral vascular d. proper control of blood sugar decrease this cxn
- Smoking is a very high risk factor for the atherosclerosis. Nicotin causes vasoconstriction & vasospasms of arteries → ↓circulation to legs
- Appropriate control of obesity & diet prevent some atherosclerosis.



### ***Disorders of the lymphatic system***

- The lymphatic system is organized especially to filter out foreign proteins & bacteria
- From GI lymphatic, the channels collect primarily digested fatty food & collect into thoracic duct → left subclavian veins.
- Disorders of the lymphatics include:
  - ✓ **Lymphangitis**
  - ✓ **Lymphadenitis**
  - ✓ **Lymphedema.**

#### **A. Lymphangitis**

- Is an acute inflammation of the lymphatic system.
- A common Sx are red streaks going up an arm or leg from an infected wound.
- Is commonly caused by streptococcal inf.

#### **B. Lymphadenitis**

- Is an inflammation with in lymph glands caused by collecting bacteria or foreign material within the lymph glands.
- If the inflammation is very virulent, it may cause necrosis with in a gland → abscess formation & drainage.
- Commonly seen in axillaries, inguinal, or cervical regional nodes.
- Tuberculosis is the most common cause

#### **C. Lymphedema**

- Is swelling of tissue in an extremity caused by decreased flow of lymph via obstructed lymph channels.
- Chronic lymph edema is caused by long standing lymphatic obstruction.
- Is caused by surgical removal of a group of regional glands such as a radical mastectomy. Other causes include TB and malignant tumors.
- Chronic lymphatic obstruction may become sever enough to cause changes in the skin of the involved extremity that is called elephantiasis.

- Leg & arm elephantiasis is less able to be treated by surgery.
- Elastic pressure bandage help some cases.

## Hematological disorders

The hematological system comprises.

- Blood
- Sites where blood is produced – bone marrow and lymph nodes.

## Blood

- Is a specialized organ that differs from other organs in that it exists in a fluid state.
- The fluid consists of cells suspended in blood plasma. These are:
  - ✓ Erythrocytes (RBCs)
  - ✓ Leukocytes (WBCs)
  - ✓ Platelets

## Erythrocytes (RBC)

- Are about 5million per cubic mm.
- Don't have a nucleus
- 90% of the cell mass of an adult RBC is hemoglobin
- The amount of Hgb per cubic mm is in the range of 15 to 17 gm/dl.
  - ◆ For an adult men Hgb 12-14g/dl
  - ◆ For an adult women 11-13g/dl.

## A. Disorders of erythrocytes

- Anemia
- Polycythemia

### I. Anemia

- is a blood deficiency in quality or quantity
- Is reduction in hemoglobin

## Causes of anemia

- Are either failure of the bone marrow to produce enough RBCs, or RBCs that don't live their normal life span. **Failure** of the **bone marrow** has many **causes including:**

- ✓ Lack of sufficient iron
- ✓ Toxic depression of bone marrow
- ✓ Deficiency of vit B<sub>12</sub> & /or Folic acid
- ✓ Bone marrow tumor
- ✓ Lack of enough albumin
- ✓ Inadequate stimulation of because of lack of erythropoietin.
- RBCs may be excessively lost from the blood stream by:
  - ✓ Acute or chronic hemorrhage
  - ✓ Hemolysis of RBCs from malaria.
  - ✓ Hemolysis from sickle cell disease
  - ✓ Hypersplecnism, or
  - ✓ Other abnormality of RBC's

### **Assessment & Diagnosis**

- C.B.C
- Bone marrow aspiration
- Hgb
- Hct
- RBC indices

### **Complication**

- Heart failure
- Parasthesias
- Confusion

### **Types of anemia**

#### **A) Iron deficiency anemia**

- Is the most prevalent anemia in all age groups in the world.
- Inadequate supply of iron is the most common type of anemia.

## **Cause**

- Inadequate intake of iron for Hgb synthesis
- Blood loss
- Pre menopausal woman (menorrhagia)
- Pregnancy
- Iron mal absorption

## **Sign and symptoms**

- Anemia
- Sore tongue
- Brittle and rigid nail

## **Treatment**

- Increasing dietary iron intake (e.g. organ meat)
- Supplemental iron therapy (200-300mg qid/6m)
- 

## **B) Aplastic anemia**

1. Describes a condition in which the bone marrow is depressed resulting in a decrease in RBCs, WBCs, & platelets (pancytopenia)
2. It's a very serious disease resulting to death.

## **Causes**

- Excessive radiation
- Toxicity to various drugs (e.g. CAF)
- Chemicals (e.g. benzene)
- Infections (e.g. hepatitis, HIV/AIDS)

## **Sign and symptoms**

- Sign of infection
- Fatigue
- Pallor

- Dyspnea

### Management

- Administering antibiotics
- Following sterile technique in all invasive procedures.
- Not taking rectal temperature
- Blood transfusion

### C) Pernicious anemia

- is also called **megaloblastic** anemia
- Is caused by a lack of a gastric substance called intrinsic factor which is produced in the stomach.
- The body needs intrinsic factor to absorb **Vit. B<sub>12</sub>** from food in the small intestine.
- Vit B<sub>12</sub> is necessary for the body's proper absorption & use of iron & protection of nerve fibers.

### Sign and symptom

- Smooth, sore red tongue & mild diarrhea
- Mental changes – confusion
- Neurological changes – paresthesia & trouble with balance on walking
- Sx progress to CHF if not treated.

### Management

- The patient must take Vit B<sub>12</sub> (cyanocobalamin) by injection for life.
- Vit B<sub>12</sub> can't be taken orally because the patient lacks intrinsic factor necessary for absorption.
- Additionally, patient may receive iron supplements, and folic acids.

#### **D) Hemolytic anemia**

- is caused by destruction of RBCs prior to their normal life span (120 days)
- Is caused by:
  - ✓ Certain drugs & toxins
  - ✓ Antibodies (e.g. blood transfusion rxn)
  - ✓ Malaria parasite

#### **Sign and symptoms**

- Manifestations of hypoxemia Sx relate to the impaired transport of O<sub>2</sub> & include: dyspnea & limited exercise tolerance.

#### **Mgt**

- Rx of this type of anemia relates to Dx & to the causative factors.
- Corticosteroids & splenectomy may also be of benefits.

#### **E) Sickle cell anemia**

- Is a genetic disease in which the person's RBCs become crescent or sickle-shaped when exposed to decreased oxygen.
- Sickled cells can't carry as much O<sub>2</sub> as normal cells.
- When sickled RBCs can enter the smaller blood vessels, they become caught, obstructing blood flow →sickle cell crisis.

#### **Sign and symptom**

- Sx of crisis include:
  - ✓ Unpredictable pain in the extremities and abdomen.
  - ✓ Jaundice, skin irritation & ulceration
  - ✓ Fever, dyspnea, cough, swelling of hands & feet, and ↑infection.

## **Management**

- Long term RBC transfusion

## **ii. Polycythemia**

- Refers to an increase concentration of red blood cells (Hgb>18g/dl)
- Polycythemia may be primary or secondary.

### **A) Primary polycythemia**

- Is often referred to as polycythemia vera.
- Is generally seen in men 40-60yrs.

## **Cause**

- Proliferative disorder
- Bone marrow is hypercellular

### **B) Secondary polycythemia**

- Is the result of an increase in the hormone erythropoietin which stimulates RBC productions.
- The reason for the stimulus to ↑RBC production is hypoxia caused by smoking, COPD, & living at high altitude.

## **Sign and symptoms**

- Headache, dizziness, and fatigue.
- Difficulty hearing & inability to concentrate.
- Night sweats, itching & pain in the fingers or toes.
- Thrombophlebitis and bleeding.

## **Management**

- Rx is directed to reduce the percent of cells in plasma to reduce the viscosity of the blood.  
This is done by:

- ✓ Removing units of whole blood frequently – often one unit a month or more.
- ✓ Oxygen therapy to relieve hypoxia



## Information sheet 6- Gastro -intestinal system disorder

### **Esophageal disorder**

The esophagus is the muscular tube that carries food and liquids from your mouth to the stomach. You may not be aware of your esophagus until you swallow something too large, too hot, or too cold. You may also notice it when something is wrong. You may feel pain or have **swallowing**. The most common problem with the esophagus is **GERD** (gastro esophageal reflux disease). With GERD, a muscle at the end of your esophagus does not close properly. This allows stomach contents to leak back, or reflux, into the esophagus and irritate it. Over time, GERD can cause damage to the esophagus.

### **Gastroesophageal reflux disease (GERD)**

Gastroesophageal reflux disease (GERD) is excessive reflux of hydrochloric acid into the esophagus.

#### ***Risk Factors***

- Incompetent lower esophageal sphincter (LES), pyloric stenosis or a motility disorder.

#### ***Assessment/Clinical Manifestations/Signs and Symptoms***

- Pyrosis (i.e. burning sensation in the esophagus)
- Regurgitation of sour-tasting secretions
- Dysphagia (i.e. difficulty swallowing) and odynophagia ( i.e pain on swallowing)
- Symptoms mimicking those of a heart attack

#### ***Nursing Management***

*Teach the client to avoid factors that increase lower esophageal irritation.*

- Eat a low-fat, high-fiber diet
- Avoid irritants, such as spicy or acidic foods, alcohol, caffeine, and tobacco, because they increase gastric acid production.
- Avoid food or drink 2 hours before bedtime or lying down after eating
- Elevate the head of the bed on 6" to 8" blocks

- Lose weight if necessary
  - If symptoms persist, prepare the client for surgical repair, which includes funduplication (i.e. wrapping a portion of the gastric fundus around the sphincter area of the esophagus)
- Administer medications, which may include antacids, histamine-receptor antagonists, and proton-pump inhibitors.

## **Gastric and duodenal disorder**

### **Acute gastritis**

- It is an inflammation of the stomach mucosa.
- It is most often due to dietary indiscretion.

**Cause:** - Ingestion of strong acids or alkalies which may cause the mucosa to become gangrenous or to perforate.

### **Clinical Manifestation**

- Gastric mucous membrane becomes oedematous & undergoes superficial erosion; it secretes a scanty amount of gastric juice, containing very little acid but much mucus.
- Abdominal discomfort, headache, nausea, anorexia, & often accompanied by vomiting & hiccough.
- It will heal by itself
- Occasionally, hemorrhage may require surgical intervention

### **Chronic Gastritis**

- Prolonged inflammation of the stomach may be caused by either benign or malignant ulcers of the stomach, or by *Helicobacter pylori* ( *H. pylori*)

**Cause:** - *H. pylori*

- Autoimmune (parietal cell changes, leading to atrophy & cellular infiltration)

**Risk factors:** -

- Hot drinks & spices

- use of drugs & alcohol, smoking

### **Clinical manifestation**

- Anorexia, sour taste in the mouth
- Heart burn
- Belching, nausea & vomiting

### **Diagnostic Evaluation**

- Endoscopy
- Upper GI x – ray series
- Histologic examination
- Serologic testing for antibodies for the H. pylori antigens.

### **MANAGEMENT**

#### **1. For Acute Gastritis:**

- Instruct the pt to refrain from alcohol & food until symptoms subside.
- Recommend non irritant diet
- If symptom persist administer fluids parenterally
- Aluminium hydroxide sos 2 tsp tid
- Nasogastric intubation
- sedatives

#### **2. For chronic Gastritis:**

- Modify the pt's diet
- Promote rest
- Reduce stress
- Treat H.pydori with (tetracycline or Amoxicillin) and bismuth salt.

### **Nursing Process**

#### **The patient with Gastritis**

##### **A. Assessment**

- Complete history (s/s of gastritis and Aggravating factors)
- P/E (abdominal tenderness, dehydration, any systemic disorder)

## **B. Nursing diagnosis**

- Anxiety
- Altered nutrition, less than body requirement
- Risk for fluid volume deficit
- Pain
- Knowledge deficit

### **Plan:**

- To reduce anxiety
- To maintain adequate nutritional intake
- To maintain fluid balance
- To increase awareness of dietary Mx.
- To relieve pain

### **Nursing Intervention**

- Reassure the pt.
- Advise an nutritional intake
- IV fluid administration
- Instruction to avoid coffee, smoking, alcohol, spicy diets
- Educate the patient.

### **Expected out comes**

- Anxiety & pain alleviated
- Maintained fluid balance
- Maintained nutritional status

## **Peptic Ulcer**

**Defn:** It is an excavation (hollowed – out area) formed in the mucosal wall of the stomach, the pylorus, the duodenum, or the esophagus. It is frequently referred to as a gastric, duodenal, or esophageal ulcer, depending on its location

## Comparison of Duodenal & Gastric Ulcer

### Duodenal Ulcer

- Age - Common b/n 30 - 60year
- Risk factors alcohol, smoking, B/d group o, stress
- Male: Female: - 3: 1
- Stomach acid: - Hyper secretion
- Vomiting: - Uncommon
- Weight: - gain
- Pain: -occurs 2- 3 hour after meal & relived by food ingestion
- Perforation: - more common
- Malignancy  
Possibility: -rare

### Gastric Ulcer

- Usually 50year & over
- Gastritis, alcohol, smoking, NSAID
- Male: Female: - 2: 1
- Normal to: - Hypo secretion
- common
- Loss may occur
- Pain: ½ to 1hour after meal& relived by vomiting
- Perforation: - Less common
- Malignancy  
Occasionall

### Etiology:-

- Etiology of PUD is poorly understood, but it is associated with Gm negative H.Pylori
- PUD occurs only in the areas of GI tract that are exposed to HCL & Pepsin.

### *Predisposition*

- Stress or anger
- Familial tendency
- Use of NSAIDS, alcohol ingestion & excessive smoking.
- Bacterial infection (H. Pylori )

**Clinical Manifestation:** - Pain (burning Sensation cramp like, gnawing pain) in the mid-epigastrium or in the back

- Vomiting & Nausea
- Constipation & bleeding
- Abdominal distention, Bleeding

### **Diagnostic Evaluation**

- P/E
- Endoscopy
- X-ray
- Stool exam for occult blood
- Gastric Secretary studies ( achlorhydria )
- Biopsy & culture for H.pylori

### **Management :(Non drug Mx.)**

- Stress reduction & rest
- Smoking Cessation
- Dietary Modification ( advice the Pt. whatever agrees with them)

### **Medical management of PUD**

Medications are prescribed for clients with PUD for 4 major reason:-

- A To eliminate H. Pylori bacteria from the GIT
- B To reduce secretion (hypo-secretory drugs),
- C To neutralize acid (antacids)
- D To protect the mucosal barrier.

A. **Antibacterial Drugs:** - Regimen used for Rx of H. pylori consists of

- Clarithromycin (Biaxin), 250 mg bid for 2wk

Plus

- Metranidazole (Flagyl), 250 mg tid. “

Plus

- Omeprazole (prilosec), 20 mg bid

B. **Hypo-secretory Agents**

- H<sub>2</sub> – receptor Antagonists

- Prostaglandin Analogs = suppresses secretion of gastric acid & stimulate the production of cyto-protective mucus.
- Anticholinergics
- Proton pump inhibitors

#### C. **Antacids:-**

Action: - Buffers & neutralizes acid in GIT

Drugs: - Aluminum hydroxide

- Aluminum magnesium combinations (Maalox)
- Magnesium trisilicate

#### D. **Mucosal Barrier & Fortifiers**

- Action:- Stimulate mucus production, which results in accelerated gastric ulcer healing.
  - Drugs:- Sucralfate ( Carofate )

Treatment regimen for PUD according to standard treatment guide line for Ethiopian Regional Hospital is as follows:-

#### I) **PUD only**

##### **First Line**

$\text{Al(OH)}_3 + \text{MgSiO}_3$ , 2tsp or 2tabs chew, P.O. between meals & at bedtime for 4weeks OR Cimetidine, 400mg P.O twice daily, with breakfast and at night, or 800mg at night for 4-6wk. OR Famotidine, 40mg, P.O. at night for 4-6wks.

##### **Alternative**

- Ranitidine, 150mg P.O. bid or 300mg at bedtime for 4-6wk. **OR** Omeprazole, 20mg P.O. /day for 4wks (DU) or 8wks (GU)



## **II) PUD associated with H.Pylori:-**

### ***First Line***

- Amoxicillin, 500mg P.O. tid for 7-14days. PLUS Clarithromycin, 500mg P.O. bid for 7-14days. PLUS Omeprazole, 20mg P.O. bid for 7-14days.

### **Alternatives:**

- Amoxicillin, 500mg P.o tid for 7-10days PLUS Metronidazole, 500mg, P.O. tid - 7-10days PLUS Omeprazole, 20mg P.O. for 7-10days

### **Surgical Treatment for PUD**

- i. Intractable ulcer (those who fail to heal after 12 to 16wks of medical Rx.)
- ii. Life - Threatening Hemorrhage
- iii. Perforation
- iv. Obstruction of gastric out let.

### **Surgical Procedures include:-**

- Vagotomy:-is performed to eliminate the acid secreting stimulus
- Vagotomy with pyloroplasty involves cutting the right & left vagus nerves & widening the existing exit of the stomach at the pylorus.
- Antrectomy -to reduce acid secreting portion of stomach.

## **NURSING INTERVENTION**

### **Preoperative nursing care for the patient undergoing surgery for peptic ulcer disease includes:-**

- 1) Preparing the pt for diagnostic tests (Laboratory analysis, x-ray, & general physical examination).
- 2) Attending to the pt's fluid & nutritional level & to maintain an optimal fluid & electrolyte balance.
- 3) Clearing & emptying GIT.
- 4) Naso-gastric Suction often is required to empty the stomach in Pt. with Pyloric obstruction
- 5) Limiting oral Intake

## ***Nursing Process***

The Patient with PUD

### 1) Assessment - History

- P/E

### 2) Nursing Diagnosis

- Pain related to the effect of gastric acid secretion.
- Anxiety related to coping with an acute disease
- Knowledge deficit about prevention & treatment.
- Altered nutrition, less than body requirement, related to pain associated with eating.

### 3) Plan:-

- To relief pain.
- " " anxiety
- " Increase pts awareness
- " maintain adequate nutrition

## **Nursing Intervention**

- Administer Medication
- Advise the pt to avoid foods that are irritant: -
- Alcohol, caffeine & Cigarettes
- Reassure the pt.
- Teach necessary Information
  - Experiences less pain
  - Free of anxiety

## **Evaluation:-**

### ***Complication***

- 1) Perforation ( DU>GU)
- 2) Gastric out late obstruction ( Pyloric Stenosis )

#### **Sign and symptom –**

- Delayed gastric emptying
  - Fullness
  - Vomiting
  - Weight loss
  - Dehydration
- 3) Hemorrhage
    - PUD is the most common Cause of UGI bleeding
    - Occurs in 20% of PUD
    - NSAID drugs intake increase risk of bleeding
    - States a desire to be responsible for self-care

### **ACUTE ABDOMEN**

The acute abdomen is an abdominal condition of sudden onset that may require immediate operative treatment. There are many conditions that give rise to it. It can be grouped as follows:-

#### **1) Inflammatory Conditions:-**

- Acute appendicitis
- Acute Cholecystitis
- Acute Salpingitis
- Acute Diverticulitis

They cause localized peritonitis, which may lead to generalized peritonitis. The initial signs are therefore those of local peritonitis.

#### **2) Perforations of hollow Viscera**

- Typhoid perforation of ileum
- Perforation of PUD ( DU or GU )
- Perforation of GI carcinoma
- Traumatic perforation

- Perforation of amoebic colitis

They cause generalized peritonitis and therefore give rise to signs of generalized peritonitis such as:-

- Pain :- Sudden onset, Severe & Constant
- Nausea or vomiting occurs once or twice
- Constipation is present
- Rigidity may be board like & bowel sounds are absent. The sign are most marked at the site of origin of perforation.
- In typhoid perforation there may be a history of diarrhea, fever & headache before the onset of severe abdominal pain.
- In PUD there may be a history of dyspepsia
- In traumatic perforation there is history of trauma.
- In amoebic perforation there is a history of fever & diarrhea.

### **3) Intestinal Obstruction**

- Strangulated external & internal hernia
- Bands & adhesions
- Volvulus
- Intussusception
- Tumors, strictures & foreign bodies

\* They present with features of obstruction. These are:-

- Colicky abdominal pain
- Vomiting &/or distention
- Absolute constipation
- Tender & irreducible swelling in a hernia orifice
- Visible peristalsis
- increased bowel sound

#### **4) Hemorrhage**

- Ruptured tubal pregnancy
- Traumatic rupture of viscera especially spleen.
- Ruptured aortic aneurysm.
- Ruptured liver cell carcinoma

They present with signs of bleeding such as:-

- Pallor
- Sweating g
- Rising [pulse rate
- falling B/P
- Abdominal distention & tenderness

#### **5) Acute Pancreatitis**

#### **6) Colic**

- Ureteric Colic
- Biliary Colics

#### **7) Other Gynecological Conditions**

- Twisted ovarian cyst
- Ruptured Graafian Follicle

#### **8) Medical Conditions that may cause abdominal pain :-**

- Gastro-enteritis
- Dysentery
- Gastritis
- UTI

### **ACUTE APPENDICITIS**

**Def:** - It is an inflammation of the appendix.

- Etiology - not known
- Risk factors :- Sex (M>F)
- Age (most common b/n 10 & 30 Years)
- Economic status ( high & middle social class )

### **Clinical Manifestation: - Right lower quadrant pain**

- Low grade fever
- Loss of appetite
- Local tenderness at McBurney's point when pressure is applied
- Rebound tenderness (production of pain when pressure is released)
- Constipation or diarrhea
- nausea
- **Rovsing's sign** may be elicited by palpating the left lower quadrant, which paradoxically causes pain to be felt in the right lower quadrant.
- Diffused pain if appendix is ruptured.

### **Diagnostic Evaluation**

- Complete Hx & P/E
- X-ray may reveal a right lower quadrant density or localized air -flow levels.
- CBC → Elevated WBC > 10,000/mm<sup>3</sup> & neutrophil count > 75%
- Ultrasound

### **Management:-**

- Secure IV fluid & administer antibiotics
- Analgesics can be given after diagnosis is made
- Appendectomy ( surgical removal of appendix )
- Complications :-
  - ✓ Perforation of appendix
  - ✓ Peritonitis
  - ✓ Appendial abscess

### **Nursing Intervention:-**

- Reliving pain by administering analgesics
- Preventing fluid volume deficit by giving IV fluids
- Reassure the pt & prevent infection
- Preoperative & postoperative nursing care is the same as that of pt under going major surgery.

### **INTESTINAL OBSTRUCTION**

Intestinal Obstruction exists when blockage prevents the normal flow of intestinal contents through the intestinal tract. It can be classified as the following:-

A) <b>Mechanical obstruction</b>	<b>Vs</b>	<b>Functional Obstruction</b>
B) <b>Small bowel Obstruction</b>	<b>Vs</b>	<b>Large bowel obstruction</b>
C) <b>Partial Obstruction</b>	<b>Vs</b>	<b>Complete Obstruction</b>

### **Causes of Intestinal Obstructions**

#### 1) Causes of Small bowel obstruction

- Adhesion of intestinal wall due to:-
  - ✓ Surgery
  - ✓ Intestinal Tuberculosis
  - ✓ Inflammatory Condition of intestine.
- Paralytic ileus
- Hernia
- Gallstones ileus
- Tumor
- Ascaris bolus
- Intussusception:-

**Intussusception:** - It is the small bowel telescopes, as if it were swallowing itself by invagination. It is the commonest problem in infants.

**Clinical Manifestation:** - Sudden Colicky pain intermittent with 10 -20 minute Interval.

- Initial Vomiting
- Normal Stool may be passed or bloody.
- Restless, dehydration & cry
- Distention is late

## **2) Cause of large bowel Obstruction**

- Colorectal Cancer
- Adhesion
- Paralytic Ileus
- Inflammatory bowel disease
- Volvulus

**Volvulus:** -

- It is twisting of a mobile loop bowel on its mesentery.
- It occurs mostly in sigmoid colon but it can affect small intestine & caecum.
- Colicky lower abdominal pain

## **Cardinal S/S of large bowel Obstruction**

- Absolute Constipation ( Flatus & Feces )
- Gross abdominal distention
- Nausea and Vomiting
- Abdominal x-ray reveals grossly distended 2 limbs of sigmoid colon often with fluid - air level.



**Table Comparison of small bowel Vs large bowel obstruction**

<b>Small bowel Obstruction</b>	<b>Large bowel obstruction</b>
Abdominal Crampy	Abdominal Crampy
Vomiting early S/S	Constipation is early S/S
Constipation late sign	Grossly distended abdomen
Abdominal distention	Fecal Vomiting

**Diagnostic** - Hx & P/E

1) **Hx**

2) **P/E** - pt is acutely sick looking

**V/S:** - B/P - decrease due to fluid loss & sepsis

PR - Tachycardia

To - Increases if there is complication

**HEENT** - dry buccal mucosa

**Abdomen:** - Distended

-Mild tenderness on palpation

-Visible loop but not always

-Tympanic an percussion

-Bowel sound may be absent or increase

**PR** - empty rectum or hard stool

3) **Ix** - CBC

- Hgb
- V/A
- Abdominal x-ray

## **Medical Management:**

### **A) General Management :-**

- Keep the patient NPO
- NG tube should be inserted for small bowel obstruction to aspirate intestinal content.
- Secure IV line ( Normal Saline or ringer Lactate )
- Triple antibiotic ( Ampicillin, Gentamycin,& CAF )
- Sedation

### *Disorders of the rectum*

#### **1) Haemorrhoids**

- It is an enlarged & congested patch of mucosa & sub-mucosa at ano-rectal junction or
- Are dilated portions of veins in the anal canal.

**Sites:** - at 3, 7, 11 O'clock, on lithotomy Position.

#### **Hemorrhoid based on its site:-**

- 1) **Internal hemorrhoid** (if it is above internal sphincter.) It is painless until they bleed.
- 2) **External** " ( if it is outside external sphincter) it is associated with **severe pain** due to inflammation & edema caused by thrombosis. Clotting of blood (thrombosis) lead to necrosis & ischemia.

#### **Clinical manifestation**

- Bright red blood occurring at the end of defecation (Late)
- Mass Per-rectum
- Peri-anal Discomfort
- Pruritus
- Mucosal Discharge
- Pain when complicated

### **Classification of haemorrhoids based on its stage (severity)**

- a) 1<sup>st</sup> degree:- Bleed but no prolapsed
- b) 2<sup>nd</sup> degree :- Prolapsed but reduce spontaneously
- c) 3<sup>rd</sup> degree :- " but need manual replacement
- d) 4<sup>th</sup> degree: - " not returned.

**Etiology:** - idiopathic

### **Predisposing factor:-**

- Chronic Constipation
- Excessive use of purgative
- Pelvic masses ( Pregnancy )
- Portal HTN

**Rx:** - Regulating bowel by laxatives

- Avoid Constipation
- Advice high - residue diet that contain fruit.
- Sitz bath
- Good personal hygiene & by avoiding excessive straining during defecation haemorrhoid symptoms & discomfort can be relieved.

### **Non-operative Treatment:-**

- I. Infared Photocoagulation
- II. Bipolar Diathermy
- III. Laser Therapy
- IV. Injecting Sclerosing Solution

A) Rubber - band ligation procedure: - The haemorrhoid is visualized through the anoscope, & its proximal portion above the muco-cutaneous lines is grasped with an instrument. A small rubber band is then slipped over the hemorrhoid. Tissue distal to the rubber band becomes necrotic after several days & sloughs off. It may cause infection, pain & hemorrhage.

B) Cryosurgical Hemorrhoidectomy

- Involves freezing the tissue of the hemorrhoid for a sufficient time to cause necrosis.

- Not used widely because the discharge is very foul-smelling & wound healing is prolonged.
- C) Hemorrhoidectomy, or surgical excision, can be performed to remove all of the redundant tissue involved in the process.

## **Providing nursing care for the patient with hepatitis**

**Def:** - It is an inflammation of the liver

**.Cause:-** Virus

- Bacteria
- Toxic substance

### **Types of Hepatitis: -**

- viral hepatitis
- Toxic hepatitis
- Chronic hepatitis
- Alcoholic hepatitis

### **Viral hepatitis**

- i. Hepatitis type A
- ii. Hepatitis type B
- iii. Hepatitis type C
- iv. Hepatitis type D
- v. Hepatitis type E

### **Hepatitis type A /Infectious hepatitis/**

- It is endemic in some areas of the world, especially with poor sanitation

**Causative agent:** - Infectious hepatitis virus

**Mode of transmission:** -

- The major route of transmission is through
- Faecal – oral route (Contaminated food, milk, polluted water)
- Spread of the disease is enhanced by crowding & poor sanitation.

**Incubation:** - 3-7 weeks; average 4 weeks.

**Occurrence:** -

- Worldwide – sporadic or epidemic
- Autumn & winter months
- Usually in children & young adults

### **Clinical Manifestation**

#### **1. Pre-icteric (Prior to period of Jaundice) Phase:**

- Headache
- Abdominal tenderness
- Muscle crampy
- Vomiting
- Nausea
- Pain over the liver
- Fever
- Anorexia
- Backache

## **2. Icteric phase**

- Urine-dark; stool often light for several days
- Liver-enlarged, often tender
- Nausea, vague Epigastric distress, heart burn, flatulence, anorexia

## **Hepatitis B**

**Causative agent:** - Hepatitis B Virus

**Mode of transmission:** -

- A. Parenteral route;
  - Blood transfusion from an infected person
  - Contaminated needles, syringes
- B. Skin puncture – medical equipments
- C. Mucosal transmission; dental instruments

**Incubation period:** - 6 weeks to 6 months/ average 2.5 – 3 month

**Diagnosis:-**

- Count electrophoresis (CEP)
- Sandwich” Count electrophoresis (SCEP)
- Radioimmunoassay

**Clinical Manifestation:-**

- S/S similar to infections hepatitis, but usually more insidious in onset
- Respiratory manifestations minimal or absent

**Rx: & Nursing Mx: -**

- Isolate patient to minimize contacts
- Wear gloves; wash hands thoroughly
- Assist with laboratory diagnostic studies
- Handle bed pan carefully & instruct pt. to ensure meticulous personal hygiene habit.
- Use disposable syringe & needles
- Avoid alcohol consumption

- Recognize that recovery is slow & prolonged

### **GIVING NURSING CARE FOR THE PATIENT WITH LIVER CIRRHOSIS**

**Def.:** - It is a chronic disease in which there has been diffuse destruction of parenchymal cells followed by liver cell regeneration & an increase in connective tissue. These processes result in disorganization of the lobular architecture and obstruction of the hepatic venous & sinusoidal channels, causing portal hypertension.

### **Classification**

1. Alcoholic cirrhosis of the liver (micro nodular)
  - A. Fibrosis – mainly around central veins & portal area
  - B. Most commonly due to chronic alcoholism.
2. Post necrotic (Macro nodular);
  - Due to previous acute viral hepatitis or drug induced massive hepatic necrosis.
3. Biliary;
  - Scarring around bile ducts & lobes of liver.
  - Result from chronic biliary obstruction (With or without infection)
  - Much more rare than alcoholic & post necrotic cirrhosis
4. Post hepatic
  - Fine bands of scar tissue extend from portal areas
  - Usually due to chronic viral hepatitis.

**Causes:**

- Alcohol
  - Hepatitis virus (B & C)
  - Drugs;
    - ✓ Methyldopa
    - ✓ Methotrexate
  - Autoimmune chronic active hepatitis
  - Excessive use of herbal medications
  - Chronic hepatic congestion
- } By far the most common

**Clinical manifestation:-**

- i. Weight loss, muscle wastage
- ii. Flatulence, palmar erythema
- iii. Jaundice, loss of body hair, gynecomastia
- iv. Oedema, Bleeding
- v. Anaemia 2<sup>o</sup> to bleeding
- vi. Abdominal distention (Ascites)
- vii. Hepatomegaly + splenomegally
- viii. Oesophageal varices.
- ix. Sign of hepatic encephalopathy.

**Diagnosis**

- Liver biopsy & Liver function test
- Oesophagoscopy
- Liver scan
- Paracentesis to examine ascetic fluid

**Patient Assessment:-**

**-History**

**-Physical examination:-**



## **Nursing Management**

### **A/ Nutrition;**

- Maintain caloric & vitamin diet intake give protein as tolerated
- Avoid table salt, salty foods & canned foods
- Use 'Salt' substitutes such as lemon juice
- Offer small frequent meals
- Eliminate alcohol

### **B/ Medication:**

Multivitamins preparation

- Vit. K – if a tendency of bleeding is manifested such as epistaxis, melena, hematoemesis
- Vit B<sub>12</sub> – to correct anaemia
- Diuretics ex: - Spirinolacton
- Electrolyte fluid balance
- Avoid toxic drugs:-
  - ✓ barbiturates, diazepam
  - ✓ Oral contraceptive
  - ✓ Alcohol

### **C/ Rest & activity**

- If there is no ascites & sign of hepatic coma: -
  - ✓ Limit amount of activity
- In advanced liver impairment:-
  - ✓ Bed rest
  - ✓ Frequent change of position
  - ✓ Special skin care & passive exercise.

### **Complication of liver cirrhosis**

- Hepatic comma
- Bleeding & oesophageal varices.
- Portal hypertension
- Spontaneous peritonitis
- Asites
- Hepatic encephalopathy
- Anaemia

## **Giving Nursing care for patient with Hepatic Encephalopathy & Hepatic coma**

- **Hepatic encephalopathy:** - Results from the accumulation of ammonia & other toxic metabolites in the blood.
- **Hepatic coma:** - represents the most advanced stage of hepatic encephalopathy.
- Ammonia accumulates because damaged liver cells fail to detoxify & convert to urea the ammonia that is constantly entering the blood stream as a result of its absorption from the GIT & its liberation from kidney muscle cells.
- The increased ammonia concentration in the blood causes brain dysfunction & damage, resulting in hepatic encephalopathy

**C/M:** -

### **Early Stage**

- Euphoria
- Depression
- Apathy
- Irritability
- Memory loss
- Confusion

### **Late Stage**

- \* Drowsiness
- \* Insomnia
- \* Agitation
- \* Slow & slurred speech
- \* Hyperactive reflex
- \* Slow deep respiration

### **MX:- Vital signs are measured & recorded every 4 hours**

- Serum ammonia level is monitored daily.
- Avoid constipation
- Enema to reduce ammonia absorption
- Sterilization of intestine (Neomycin sulphate)
- Lactulose is administered to reduce blood ammonia
- If sign of impending hepatic encephalopathy occur, reduce protein intake.

## Information sheet 7- Endocrine disorder

### 7.1 Introduction

Endocrine disorders are diseases related to the endocrine glands of the body. The endocrine system produces hormones, which are chemical signals sent out, or secreted, through the bloodstream. Hormones help control many important body functions, including the body's ability to change calories into energy that powers cells and organs. The endocrine system influences how your [heart](#) beats, how your bones and tissues grow, even your ability to make a baby. It plays a vital role in whether or not you develop [diabetes](#), [thyroid](#) disease, growth disorders, sexual dysfunction, and a host of other hormone-related disorders.

There are many different types of endocrine disorders. [Diabetes](#) is the most common endocrine disorder diagnosed.

### Diabetes mellitus (DM)

- Diabetes is a chronic disease, which occurs when the pancreas does not produce enough insulin, or when the body cannot effectively use the insulin it produces. This leads to an increased concentration of glucose in the blood (hyperglycaemia).

There are two main types of DM

- i. Type 1 diabetes (previously known as insulin-dependent or childhood-onset diabetes) is characterized by a lack of insulin production.
- ii. Type 2 diabetes (formerly called non-insulin-dependent or adult-onset diabetes) is caused by the body's ineffective use of insulin. It often results from excess body weight and physical inactivity.

### Etiology

#### Type I diabetes

- Combination of
  - Genetic
  - Immunology
  - Environmental factors
- People don't inherit type I diabetes or tendency.

- An abnormal response in which antibodies are directed against normal tissue of the body responding to tissue as if they are foreign.

### Type II Diabetes

- Exact mechanisms that used to insulin resistance and impaired secretion in type II DM are unknown.
- But genetic factors play a role in addition age (>65 yrs), obesity, family history and ethnic group.

Table type 1 and type 2 diabetes comparison

	PE I (IDDM)	TYPE 2 (NIDDM)
Age of onset	Usually younger than 40	Usually older than 40
Body weight	Thin	Usually overweight
Symptoms	Sudden onset	Insidious onset
Insulin produced	None	Too little, or not effective
Insulin requirements	Exogenous insulin required	May require insulin

### Signs and symptoms

The classic symptoms of untreated diabetes are

- Loss of weight,
- polyuria (frequent urination),
- polydipsia (increased thirst) and
- polyphagia (increased hunger).

- Prolonged high blood glucose can cause glucose absorption in the lens of the eye, which leads to changes in its shape, resulting in vision changes. Blurred vision is a common complaint leading to a diabetes diagnosis; type 1 should always be suspected in cases of rapid vision change, whereas with type 2 changes are generally more gradual, but should still be suspected. A number of skin rashes that can occur in diabetes are collectively known as diabetic dermadromes.

**Table # warning sign of Diabetes mellitus**

SIGNS AND SYMPTOMS	LABORATORY FINDINGS
<ul style="list-style-type: none"> <li>▪ Sudden onset</li> <li>▪ Polyurea</li> <li>▪ Polydipsia</li> <li>▪ Polyphagia</li> <li>▪ 20 pound weight loss</li> <li>▪ Irritability</li> <li>▪ Weakness and fatigue</li> <li>▪ Nausea, vomiting</li> </ul>	<ul style="list-style-type: none"> <li>▪ Insidious onset</li> <li>▪ Fatigue</li> <li>▪ Blurred vision</li> <li>▪ Tingling or numbness in hands and feet</li> <li>▪ Itching</li> <li>▪ Any symptoms of IDDM or hard to heal wounds</li> <li>▪ Frequent bladder infections</li> </ul>

### Diagnostic Evaluation

- The presence of abnormally high blood glucose level on at least two occasions
- Random plasma glucose >200mg/dl
- Fasting plasma glucose > 140mg /dl
- Oral glucose tolerance test >200 mg/dl

### Management

#### Main goal of the Rx is

- To normalize insulin activity and b/d glucose levels to produce dev't of the vascular and neuropathic complications

- Normal blood glucose level without hypoglycemic and without seriously disrupting the pt usual activity patterns.
- There are five components of Mx
  - ✓ Diet
  - ✓ Exercise
  - ✓ Monitoring
  - ✓ Medication
  - ✓ Education

### **Dietary Mx**

- Constitutes the foundation of diabetes Mx has the following goals
  - ✓ provision of all the essential foods
  - ✓ Meeting energy needs
  - ✓ Provision of daily function in b/d glucose level
  - ✓ Decrease of blood glucose lipid levels.
- For obese pts wt loss is the key to Rx
- Important objective in dietary Mx of diabetes is control of total calorie intake to attain or maintain a reasonable body wt and control of blood glucose level.
- In a young pt with type I diabetes, priority should be given to provide a diet with enough calories to maintain normal growth & dev't.

### **Insulin Therapy**

- Insulin lower blood glucose level after meals by facilitating the uptake & utilization of glucose by muscles, fat and liver cells. During periods of fasting insulin inhibits the breakdown of stored glucose, protein & tax.
- In type I diabetes exogenous insulin must be administered.
- In type II diabetes insulin may be necessary and a long term bases to controlled glucose levels if diet an oral agents have failed.

### **Time Course**

- May be grouped in to three main categories based on onset peak and duration.

### **Short Acting Insulin**

- ✓ Regular insulin (marked "R")

- ✓ Onset of regular human insulin action is  $\frac{1}{2}$  to 1hr, peak 2 to 3 hrs duration 4 to 6hrs
- ✓ Clear in appearance given 20 minutes before food.

### **Intermittent Acting**

- ✓ NPH insulin (neutral protamin hagodorn)
- ✓ Lente insulin ("C")
- ✓ On set 3to 4 hrs, peak 4 to 12 hrs duration 16 to 20 hrs.
- ✓ White and milky in appearance

### **Long Acting Insulin**

- ✓ Ultra lente Insulin (UL)
- ✓ Onset – 6 to 8hrs peak 12 to 16 hrs duration – 20 to 30hrs

### **Concentration**

- ✓ The most common conc. of insulin is U-100
- ✓ This means increase 100 units of insulin per litter (ml) also U-40 & U-80 areused

### **Administering the Injection**

- ✓ Selection and rotation
- ✓ The four main areas for injection are the abdomen, arms, thighs and the hip.
- ✓ Speed of absorption is in the abdomen and decrease progressively in the arm, thigh and hip.
- ✓ Systematic rotation of injection site within anatomic areas is recommended to prevent localized changes in fatty tissues (lipidystrophy)

### **Oral Anti diabetic Agents**

- Are effective for type II diabetic patients. They cannot be used during pregnancy.
- Oral agents include –
  - ✓ Sulfonylurea
  - ✓ Biguamides

## **Acute complications DM**

Three major acute complications of glucose imbalance

- Hypoglycemia
- DKA
- Hyperglycemia      -Hyper osmolar non ketotic coma.

## **Long Term Complication**

- Affect almost every organ system of the body.
- Categorized in to
- Macrouascular
  - ✓ Coronary artery disease
  - ✓ Corbrouascular disease
  - ✓ Peripharaal vascular disease

## **Patient Education**

- Pt should follow regular pattern of eating administering insulin and exercise.
- Routine blood glucose tests
- Identification tag
- Pt should know potential symptoms of hypoglycemia

## ***Nursing Intervention***

- Advice patient about the importance of an individualized meal plan in meeting weekly weight loss goals and assist with compliance.
- Assess patients for cognitive or sensory impairments, which may interfere with the ability to accurately administer insulin.
- Demonstrate and explain thoroughly the procedure for insulin self-injection. Help patient to achieve mastery of technique by taking step by step approach.
- Review dosage and time of injections in relation to meals, activity, and bedtime based on patients individualized insulin regimen.
- Instruct patient in the importance of accuracy of insulin preparation and meal timing to avoid hypoglycemia.
- Explain the importance of exercise in maintaining or reducing weight.
- Advise patient to assess blood glucose level before strenuous activity and to eat carbohydrate snack before exercising to avoid hypoglycemia.



- Assess feet and legs for skin temperature, sensation, soft tissues injuries, corns, calluses, dryness, hair distribution, pulses and deep tendon reflexes.
- Maintain skin integrity by protecting feet from breakdown.
- Advice patient who smokes to stop smoking or reduce if possible, to reduce vasoconstriction and enhance peripheral flow.

<b>Information sheet # 8 Genito-urinary system problems</b>
---

### **8.1 ACUTE GLOMERULOPHAGNITIS**

Acute glomerulonephritis refers to a group of kidney disease in which there is an inflammatory reaction in the glomeruli. It is not an infection of the kidney but rather the result of unwanted side effect of the defense mechanism of the body. As a result of antigen antibody reaction aggregate of molecules (complexes) are formed and circulates throughout the body. Some of these complexes lodge in the glomeruli filtering bed of the kidney and induce an inflammatory response.

#### **CLINICAL MANIFESTATION**

Generalized edema, Smokey urine, gross haematuria, proteinuria, headache, malaise flank pain mild or severe hypertension, CVA tenderness, some times and asymptomatic and rarely renal failure.

#### **Medical management**

- Diagnostic History & Physical examination urinalysis CBC and renal biopsy to confirm the presence of the disease.
- Therapeutic bed rest until the sign of glomerular inflammation (haematuria, proteinuria) & hypertension, restricting sodium and high fluid to treat edema by give loop diuretic if hypertension is severe anti-hypertensive drug should be given low protein diet to reduce nitrogenous waste ( Eg elevated BUN ) penicillin or erythromycin should be give if the streptococcal infection is present.

#### **NURSING INTERVENTION**

- Health Promotion and maintenance E.g. early diagnosis and treatment of sore throat and skin lesion if streptococcus is found in the culture treatment with appropriate antimicrobial drug (Usually penicillin) is essential.
- Patient education concerning diet, rest, regular follow up etc...

## CHRONIC GLOMERULONEPHRITIS:-

- Chronic glomerulonephritis is a syndrome that reflects the end stage of glomerular inflammatory disease.

**Cause** - Most type of glomerulonephritis and nephrotic syndrome.

### Clinical Manifestation

- The symptom of chronic glomerulonephritis are variable some of them with severe grades of this disease have no symptom at all for a long time.
- Edema, massive proteinuria, hypoalbuminemia, elevated B/P, headache, dizziness, anemia, ascites, hydrothorax ( Fluid in the chest ) Pericarditis with effusion.
- Prognosis: Poor (majority fail progressively and die 1 or 2 yrs. A few patients will improve & they may enjoy fair health for many years.

### Medical intervention

- Treatment of patient with chronic glomerulonephritis is entirely, non specific and symptomatic, depends on the situation.
  - The goal of treatment is to:-
    - ✓ Relieve edema
    - ✓ Cure or control the primary disease
    - ✓ Treat hypertension
    - ✓ Treat the renal infection
  - Diuretics
  - Low salt (sodium)
  - Prednisolone
- } to control primary cause

## NURSING INTERVENTION

Daily weight control accurate record of intake and out, observation of edema ( facial, extremities, abdomen etc), high protein diet (frequent small meal), protect from infection, psychological treatment .

### **Bladder Stone (Calculi)**

- The formation of stone in the bladder.

#### **Cause**

- Urinary stasis as occurs in prostate hypertrophy
- Neurological disease or injury that resulted in the loss of voluntary bladder
- Control or interruption of the sacral reflex arc .
- Bladder diverticula's
- Urethral stricture or prolonged immobility
- Dehydration and urine concentration
- Indwelling catheter for a prolonged period of time
- Infection

#### **Clinical Manifestation**

- Sudden cessation of urinary flow
- Haematuria
- Sever pain during micturation

#### **Methods of diagnosis**

- Cystoscopy
- Radiological Examination IVP, U/S

#### **Medical treatment**

- Mechanical crushing of the stone by ultrasonic lithotripsy.
- Cystolithotomy
- Large amount of fluid to help wash of the bladder
- Cause should be treated eg. Prostatic hypertrophy.

### **Trauma of the bladder**

- A kick or blow in the lower abdomen when the bladder is full.
- Accidental injury if urinary bladder causing Perforation and ensuring extravasations of the urine (escape of urine from the bladder) is common.
- It may occur when the pelvis is fractured or also results of direct blow to the lower abdomen.
- If the bladder is full and distended at the time of accident it is more vulnerable.

#### **Cause**

- Trauma, accidental direct kick or blow etc...

### **Clinical Manifestation**

- Interpersonal rupture - peritonitis due to escape of urine in to the peritoneal cavity (Necrosis)
- Sever pain of abdomen tenderness of abdomen and distended abdomen.
- Shock
- Extraperitoneal rupture - urine escapes in to the surrounding tissue cause cellulites,
- infection and necrosis of tissue.
- Abdominal and peritoneal fistula develops.

### **Method of Diagnosis**

- Urinalysis and Cryptogram and cystoscopy

### **Medical management**

Shock and hemorrhage should be treated with a blood transfusion and IV infusion.

An indwelling catheter is inserted in to the bladder and prepare patient for abdominal surgery.

### **Surgical intervention.**

The site of injury is repaired and temporary cystostomy (Incision of the bladder and introduction of suprapubic catheter) done to establish urinary drainage & prevent the possibility of pressure on the repair suture line. If the rupture was intraperitoneal the extravasated fluid should be aspirated before closure.

- ✓ Strict Observation for sign of shock (Infection)
- ✓ An accurate fluid intake and out put should be done
- ✓ Antimicrobial drugs may be administered

## **Disorder of the urethra**

**URETHRITIS** - is an inflammation of the urethral mucosa usually an ascending. there is gonorrheal and non-gonorrheal urethritis.

### **Cause**

- Bacterial - Gonococci streptococcal, etc---
- Viral
- Protozoan - trichomonal
- Fungal
- Trauma

### **Clinical Manifestation**

- Dysuria,
- Frequency,
- Burning sensation during micturatin
- Discharge yellowish green could be scanty or profuse,
- Thin or mucoids thick and purulent.

### **Method of Diagnosis**

- Urinalysis, urine culture smear of discharge (gram stain and wet smear)

### **Medical treatment**

- Antimicrobial drugs depending on to causative microorganisms, Analgesics if necessary, perennial care after bowel movement urinary antiseptics, encourage to drink copious amount of fluid.

## **Urethral Stricture**

- Urethral Stricture is a narrowing of the lumen of the urethra due to scar tissue and contraction.

### **Causes**

- Injury - insertion of surgical instruments during transurethral surgery, indwelling
- Catheter or cystoscopic procedure.
- Straddle Injuries
- Automobile Accident
- Untreated Gonorrhea
- Congenital Abnormality

### **Clinical Manifestations**

- The force & size of urinary stream is diminished and symptoms of urinary infection and retention occur.
- Stricture cause urine to back up resulting in cystitis prostatitis and pyelonephritis

### **Medical treatment**

- Dilatation of the narrowed area with mental sounds or buggies.
- Operation under direct vision internal urethrotomy
- Fixation of boogies passes beyond the stricture in to the bladder - urine will drain from the bladder.
- Hot sitze bath and non - narcotic analgesics are given to control pain.
- Antimicrobial drugs are given for several days after dilatation to minimize infection.
- Surgical excision or urethroplasty may be necessary for sever cases.
- Rarely a temporary cystostomy is necessary, b/c of sever retention.

### **Disoredr of prostate gland**

#### **Prostatitis** (male reproductive system)

- Prostatitis is inflammation of prostate gland caused by infections agent (bacteria, Fungi and mycoplasma) or by a variety of other problems.

#### **Cause**

- Infections agents - bacterial, fungi & mycoplasma
- Urethral stricture & hyperplasia of prostate
- Microorganisms usually are carried to the prostate from the urethra.

#### **Clinical Manifestation**

- Perineal pain and discomfort
- Urethrtitis Urgency frequency and dysuria
- Prastatodynia (pain in the prostate) on voiding.
- Acute bacterial Prostatitis may produce a sudden on set or fever & chills and
- perineal, rectal, low back pain and dysuria may be evident.

#### **Methods to Diagnosis**

- Careful history,

- Culture of prostate fluid or tissue and urine culture digital examination.

### **Medical treatment**

- The goal of treatment is to avoid the complication of abscess formation and septicemia.
- A broad spectrum antimicrobial drugs for 10 - 14 days, I.V administration of the drugs may be necessary to achieve high serum and tissue level.
- Bed rest, antispasmodics, laxatives to soften stool and sitz bath
- Patient education, therapy, fluid intake but not force fluid, diet and drinks which have diuretic action e.g. Coffee, Tea, alcohol, coca etc--- increase prostatic secretion should be avoided, avoidance of sexual intercourse prolonged sitting also be avoided and medical follow up for at least 6 months to 1 year.

### **BENIGN PROSTATIC HYPERPLASIA (Hypertrophy) BPH**

The most common problem of the adult male reproductive system is benign prostates hyperplasia (BPH). This problem occurs in about 50 percent of men over 50 years of age and 75% of men over 70 years. The prostate gland enlarges extending upward in to the bladder and obstructing the outflow of urine by encroaching on the vesical orifice.

### **CAUSE (Etiology)**

Uncertain but evident suggests a hormonal cause as initiating hyperplasia of the supporting stromal tissue and a glandular element in the prostate.

### **Clinical Manifestation & Diagnostic Evaluation**

Increasing potency of urination nocturia, hesitancy in starting urination increasing of force of urinary stream interruption of urinary stream, a sensation of incomplete emptying of the bladder, urine dribbles out after urination, an acute urinary retention (infection) fatigue secondary to nocturia, anorexia nausea and vomiting due to impaired renal function epigastria discomfort due to distended bladder hematuria urimia at the later stage. On rectal examination the prostate is found to be enlarged. Complete hematological investigation, x-ray and Cystoscopy examination and RFT to assess renal impairment.



## **Medical treatment**

The plan of treatment depends on the cause, the severity of obstruction and the condition of the patient (Mx also depends on age)

- Catheterization to treat an acute urinary retention.
- Sometimes a suprapubic cystostomy to give adequate drainage.
- Water and electrolyte replacement in necessary.
- Antimicrobial drugs may be necessary to treat UTI
- Surgery to remove the hyper plastic prostate tissue to provide permanent relief of the obstruction it is referred to as a prostatectomy.

## **PER OPERATIVE NURSING CARE**

- Assessment of the pts general health status.
- Adequate nutrition
- Adequate rest to have best physical condition before surgery.
- Appropriate antimicrobial drug to come back infection
- Foley catheter maybe inserted
- Reduce Anxiety

## **POST OPERATIVE NURSING CARE**

- Frequent observation for symptoms of shock & hemorrhage
- Frequent observation for infection & thrombosis
- Urologist should change dressing on the first post operative day
- Careful aseptic technique is practiced
- Rectal temperature rectal tubes and enemas are to be avoided
- Patients undergoing prostatectomy (with the exception of transurethral resection) here a high incidence of develop vein thrombosis.
- Dressing should be changed frequently for drainage and bleeding.
- Encourage fluid intake.
- Intake and out put should be recorded.
- If the pt is too old additional attention must be given skin care, frequent change of position keeping the pt safe etc..
- Following transurethral prostatic resection the catheter must drain well in addition fursomide is initiate post operative diuresis to keep the catheter potent.
- Check V/S

- Analgesics

### **Patient Education**

- Encourage to walk not to sit for long times
- keep bowel movement soft
- Should be advised not to urinate as soon as the desire to do so felt.
- Avoid heavy exercise and lift
- Spice food, alcohol, coffee etc should be avoided may cause discomfort
- Encourage to take fluid.

### **CANCER OF THE PROSTATE GLAND**

Cancer of the prostate is the second most common cause of cancer. The most prevalent cancer overall in black men with increasing number of men in the old age group greater attention will be focused on this condition .

**CAUSE** Unknown the tumor usually develops the ability to continue to grow to continue in the absence of androgens.

## **CLINICAL MANIFESTATION**

Early Ca of the prostate does not usually produce symptoms if the neoplasm is large enough to encroach on the bladder neck and cause obstruction of urine, there are signs and symptoms of obstruction namely.

- Difficulty & frequent urination
- Urinary retention and the
- Decreased size and force of urinary stream

## **Method of Diagnosis**

- Finger rectal examination; palpable if it is advanced stony hard.
- Histological examination by surgically transurethral resection open prostatectomy or
- Needle biopsy perineal or trans rectal.
- Serum acid phosphate level is frequently increased.
- Skeletal x-ray to reveal osteoblastic metastasis
- Urogram to demonstrate changes from urethral obstruction
- RFT

## **Medical treatment**

Radical Prostatectomy radiation as a palliative therapy, hormonal therapy maybe selected to suppress all androgenic stimulation to the prostate due to orchiectomy or administration of estrogen, blood transfusion analgesics strict observation. V/S, sign of anemia, shock, fluid balance etc...

## **HYDROCELE**

A hydrocele is a collection of fluid generally in the tunica vaginalis of testis. The tunica vaginalis become widely distended with fluid.

## **Cause**

Occurs in association with acute infectious disease of the epididymic infectious disease such as mumps. The cause of chronic hydrocele is unknown.

## **Medical treatment**

- Usually therapy is not required. Treatment is necessary only if the hydrocele becomes tense and compromises testicular circulation or if the scrotal mass becomes large, uncomfortable or embarrassing, withdrawing the fluid through a large needle or removing the sac of the fluid.
- Surgical incision through the wall of the scrotum down to the distended tunica vaginalis. Some times sclerosing substance is injected into the sac after aspirating fluid to cause the wall of hydrocele to become inflamed and disappear.
- Eventually post operative scrotal support is done.

## **VARICOCELE**

A varicocele is an abnormal dilatation of the vein of the spermatic cord. A varicose is associated with infertility. Subjective symptom may be produced by the enlargement of the spermatic vein. Symptomatic varicose characterized by pain, tenderness and discomfort in the inguinal region is corrected surgically by ligating the external spermatic vein at the inguinal area. As a rule, no treatment is required unless fertility is a matter of concern.

## **NURSING INTERVENTION**

An ice bag may be applied to the scrotum for the first few hours after operation to relieve edema. The patient then wears a scrotal support. Incontinent ileal urinary diversion, a segment (knock pouch) of a small intestine is surgically isolated from the intestine & serves for storage of urine.

- The ureter is implanted on the isolated segment and an opening is created connecting the "new bladder" to the abdominal wall.
- A nipple-like valve is created by intussuscepting (telescoping) the intestine to prevent leakage of urine.
- To drain the stored urine, a catheter is inserted through the nipple valve.

## **Nephrotic Syndrome:**

The nephrotic syndrome = is a clinical disorder characterized by:

- A) Marked Proteinuria
- B) Hypoalbuminemia
- C) Edema and
- D) Hypercholesterolemia

## **Causes:**

Chronic glomerulonephritis, diabetes mellitus with intercapillary glomerulosclerosis, Amyloidosis of the kidney, systemic lupus erythematosus and renal vein thromboses and others, e.g. Syphilis, etc..

### **Clinical manifestations**

- Localized and generalized edema
- Ascites
- Hydrothorax
- Proteinuria
- Hypoproteinemia
- Less urine output
- Usually pale, fatigue and anorexia.

### **Management**

#### **Medical**

- The objective of management is to preserve renal function
- Usually it is nonspecific, depends on the cause
- Bed rest
- Antimicrobial drugs for infection
- Diet – adequate protein, low sodium or should be restricted
- Prednisolone

#### **Nursing Intervention**

- Observation of edema by controlling weight
- Skin care and trauma should be avoided
- Monitoring the effectiveness of diuretics – accurate record of intake and output
- Protect the patient from infection
- Psychological support (severe edema)

### **Nephrosis**

Nephrosis = is a condition in which are degenerative changes in the kidneys without the occurrence of inflammation.

#### **Cause:**

- Usually occurs in children between 1-6 years of age.
- The cause is unknown, but suggested it may result of an immunological Process.

**Clinical Manifestations:**

- Generalized edema
- Fatigue, lassitude and pallor of the skin to compression of the peripheral blood vessels by the edematous tissue
  - ✓ Albuminuria (proteinuria)
  - ✓ Hypoalbuminemia
  - ✓ Oliguria

**Management:**

- No specific treatment
- The objective of treatment or care may be to:-
  - ✓ . Prevent and control infection, e.g. pneumonia
  - ✓ . Maintain good nutrition
  - ✓ . Control edema
  - ✓ . Keep up the morale of the patient
- Nursing Care:
  - ✓ Skin care to prevent pressure sores
  - ✓ Normal protein diet
  - ✓ Low salt diet
  - ✓ Psychological support (relatives)
  - ✓ Protect from infection
- Drugs:
  - ✓ Diuretics
  - ✓ Cortisone (Prednisolone)
- Abdominal Paracentesis may be done if the abdominal fluid cause respiratory problem

**Pyelonephritis:**

**Pyelonephritis:** is an acute or chronic infections and inflammatory process of the renal pelvis and parenchyma of one or both kidneys.

**Cause:**

- More in female children than male, in pregnant women when there is failure to empty the bladder on time.
- Different types of bacteria as a colon bacillus (E.coli) and rarely staphylococci

**Clinical manifestations:**

- Sudden onset, chills and fever, flank pain and tenderness, leukocytosis, frequent micturation with dysuria & frequency, bacteria, pus & epithelial cells, in the urine, headache, nausea & vomiting.

**Management:****Medical intervention:**

- Oral antimicrobial drugs, e.g. Sulfonamide, Ampicillin, etc.
- Fluid intake 300 ml/day
- Light diet
- Bed rest – of severe complete (hospitalization)
- Follow-up urine cultures and other discharges
- Requires surgery, e.g. Nephrotomy, nephrectomy or pyelotomy

**Nursing Intervention:**

- Accurate record of intake and output
- Protection from infection (URI)
- Encouragement of fluid intake
- Education concerning,
  - ✓ Medication,
  - ✓ Urine – culture follow-up
  - ✓ Identification of reoccurrence of infection

**Complication:**

If not treated chronic renal failure.

**Acute renal failure:**

- Acute renal failure is a sudden and almost complete loss of kidney function caused by failure of the renal circulation or by glomerular or tubular damage.
- Renal failure results when the kidneys are unable to remove the bodies metabolic wastes or perform their homeostatic function.
- The substances normally eliminated in the urine accumulate in the body fluids as a result of impaired renal excretion and lead to a disruption in homeostatic endocrine, and metabolic functions, e.g. an accumulation of nitrogenous waste products (BUN), serum creatinine without decreased urinary output, Etc.

**Cause:**

- Toxic agents : e.g. carbon tetrachloride, sulfonamides, medications like phenacetine, etc..
- Traumatic shock due to severe injury, surgical shock, myocardial infarction, Etc.
- Infectious diseases: - e.g. Septicemia due to gram negative bacteria with shock
- Damage of renal parenchyma due to acute glomerulonephritis and severe acute pyelonephritis.
- Severe water and electrolyte depletion
- Complication of pregnancy
- Obstruction of the lower urinary tract.

**Clinical Manifestations:**

- Sudden onset of dysuria with urine volume of 20-200 ml/d.
- Proteinuria and haematuria
- Anorexia, nausea & vomiting
- Lethargy
- Signs of uremia
- Progressively increased BUN
- Edema



- Low specific gravity
- renal failure is persistent bleeding tendency is increased
- The course of the disease may be divided into the oliguric, diuretic phase and recovery phase.

### **Management:**

The kidney has a remarkable ability to recover from result. Therefore, the objective of treatment of acute renal failure is to:-

- Restore the normal homeostatic environment so that repair of renal tissue
- Restore renal function

### **Medical intervention:**

- Mannitol 25 mg. with 20% of glucose I.V. solution to prevent tubular necrosis and treat shock
- Blood transfusion I.V. to treat hypotension and blood loss. Electrolytes I.V. to treat dehydration but should be strictly under supervision.
- Antimicrobial drugs to treat infection
- Diet – restriction of protein in order to limit sources of nitrogen, potassium, phosphate, etc.
- General measures:
  - oliguric Phase : The objective of therapy are to
  - Maintain normal body fluid volume and electrolyte concentration.
  - Reduce tissue catabolism to a minimum
  - Prevent infection until healing occurs
  - Bed rest: complete bed rest to protect from infection
  - Fluid: Restrict fluids to 400 ml/d for the adult, but you can put on additional fluid if the patient has diarrhea and vomiting to replace electrolytes.
  - Diet: Restriction of protein to limit sources of nitrogen, potassium phosphate, etc.  
(HO 100-200 mg/day should be given).
  - Observation: Daily records of fluid intake and output are essential: an indwelling catheter is usually required to permit accurate measurement of urine output. Weight should be recorded daily whenever possible.
  - The pulse, respirations and blood pressure are checked frequently.

## Information sheet 9- Ear, eye, nose and throat disorders

### Giving nursing care for a patient with eye disorder

#### Refractive errors

Refractive errors include: -Major

1. Myopia (Short sightedness)
2. Hyperopia or hypermetropia (Long sightedness)
3. Astigmatism (asymmetric focus)

#### Myopia or short sight

A short – sighted person has a long eyeball. The light rays therefore come to a focus in front of the retina.

**Clinical manifestation** = decreased distant vision

#### Hyperopia or long sight

- The eye has insufficient reactive power to focus light on the retina.
- The rays of light entering the eye are focused behind the retina
- Impairment of near vision

#### Astigmatism

It results from unequal curvature of the cornea, so that there is no point of focus of the light rays on the retina.

**C/F:** - blurred vision, eye discomfort

- Either hyperopia or myopia may co-exist with astigmatism

#### Presbyopia

From the age of about 45 years, the lens in the eye no longer has the ability to accommodate for near vision.

The light rays therefore fall behind the retina before coming to a focus. This is called presbyopia.

**Dx: -**

**Refractive correction: -**

Refractive errors may be corrected with

- Eye glasses (Spectacles)
  - ✓ For myopia: - Concave lens (Spherical) or 'Minus' lens.
  - ✓ For hyperopia: - Convex lens or 'Plus' lens.
  - ✓ For presbyopia: - Convex lens or 'Plus' lens.
- Hard contact lens
- Soft contact lens
- Intraocular lenses

### **Hordeolum (Stye)**

**A Stye** is an infection of superficial eye lid glands of zeis or mall.

**Cause: -** Staphylococcus auerus.

**C/F: -** Sub acute pain, redness, & swelling of a localized area of the lid that may rapture.

- Styes are localized to the lid margins.

**Mx: -**

- Warm, moist compresses for 10 to 15 minutes, three to four times a day, hastens the healing process.
- If the condition doesn't begin to resolve within 48 hours, incision & drainage maybe indicated.
- Application of topical antibiotics
- Analgesics

### **Chalazion**

**Def: -** Chalazion is a swelling of one of the meibomian glands due to blockage of its duct.

- It is chronic condition
- It is same times called internal hardeolum.

**Cause: -** Staphylococci are common causes if infected.

**C/F:** - Localized, painless swelling that develops over period of weeks.  
- Palpation usually indicates small, **painless nodule** in the eye lid.

**Mx:** -

- Warm compresses, massage & expression of the glandular secretions.
- Antibiotic therapy & corticosteroid drops
- Chloramphenicol; - apply 3-4 x/d for 7-10 day, after the eye has been steamed.

**Nursing Care:** -

- Instruct the patient to apply steam to the eye
- Instruct how to use drugs
- Instruct the pt. to clean eye lids by using warm water

### **Blepharitis**

- It can be **acute or chronic** inflammation of the eyelid margins.
- It is usually bilateral

**Cause:** -

- Staphylococcal - chronic infection
- Seborrheic - excessive secretion of lipid from meibomian glands.
- It may be associated with dandruff, poor hygiene, eczema.
- Acne rosacea

**C/M:** - Irritation of eye lids margins and red rimmed eyes are chief

- Burning
  - Itching
- } Symptoms.

**Mx:** -

- Daily meticulous cleaning of the lid margins using cotton tipped applicator, with dilute baby shampoo: 2x/d
- Warm Compresses
- Application of antibiotic ointment 2-3x/d
- Dandruff RX
- Stop using make up or change the brand used

- improve hygiene

**Complication:** - Conjunctivitis

- Trichiasis
- Entropion or ectropion of lower lid
- Corneal Ulcer.

### **Trichiasis**

It is a condition in which the eye lashes grow in words & rub on the cornea.

**Cause:** - blepharitis

- Trauma or surgery to the lids

**Rx:** - Epilation

**Complication:** - Corneal abrasions

- Corneal ulceration
- Corneal Opacity
- Vacularization of cornea

### **Entropion**

- It is turning outwards of the eye lids, usually the lower lids

**Cause:** - Scarring of the lid or conjunctiva

- Paralysis of fascia nerve

**Rx:-** Surgery

### **Ptosis**

- It is dropping of the upper eyelid

**Cause:** - congenital

- Oedema, tumor & scarring of eye lid
- Myasthenia gravis
- Paralysis of nerves supplying the upper lid

**Rx:** - Treat underlying cause

### **Conjunctivitis**

**Conjunctivitis** an inflammation of the conjunctiva

**Cause:** -

- Infections (bacteria, Virus, Chlamydial, Fungal, Parasitic)
- Immunologic (allergy)

- Irritant (Chemical, thermal, electrical)
- Associated with systemic disorder.

### **Bacterial Conjunctivitis**

- It can be acute or chronic

**Causative agents:** - Streptococcus

- Staph. aureus
- Pneumococcus

**C/M:** -

- Conjunctival injection, especially in the fornices where the blood supply is rich.
- Hyperemia/redness
- Purulent discharge
- Pain

### **Rx & Nursing Care**

- Take swab from affected eye for culture & sensitivity if severe
- Clean the eye using cooled, boiled water
- Chloramphenicol or tetracycline eye drop or paint 3x/d for 3-5days.

**Neonatal Conjunctivitis-** Severe conjunctivitis occurring in a baby less than 28 days old is notifiable disease.

**Cause:** - Gonococcus

- Streptococcus
- Chlamydia

**C/M: -**

- Severe discharge
- Red, swollen eye lids
- Chamois
- Unilateral or bilateral infection

**Treatment**

- Clean the eye
- Gentamycin eye drop tid
- Oral antibiotics

**Complication: -**

- Conjunctival Scarring
- Chronic blepharitis
- Conjunctival ulceration & perforation
- Marginal corneal ulcer.

**Viral Conjunctivitis****Cause: -**

- Measles
- Herpes Simplex
- Varicella

**Clinical manifestation: -**

- Red eye
- Chemosis, if severe
- Follicle may be present on the palpebral conjunctiva
- Keratitis
- Watery discharge & photophobia

**Treatment: -**

- Self limiting (within 7-10 days)
- Steroid Rx

## **Allergic Conjunctivitis**

**Causes:** - Hay fever, Eczema

**C/F:** -

- Severe chemosis
- Red eye
- Watering eye
- Sinusitis may present
- Burning sensation & severe itching
- Photophobia

**Rx:** - Betamethasone or hydrocortisone drop

## **Trachoma**

**Trachoma:** - is infectious disease that affects more than (Chlamydia Conjunctivitis 500 million people worldwide. It is the world's leading cause of preventable blindness & primarily affects people in Africa.

**Cause:** - Chlamydia trachomatis

**Mode of transmission:** -

- Direct Contact
- Fomites
- Insect Vector

**C/M:** -

- Mild itching & irritation is principal symptom
- Red eye
- Discharge
- Follicles & papillae on palpebral conjunctive
- Keratitis
- Chemosis of bulbar conjunctive
- Blurring of vision

**Complications:** -



- Scarring of eye lids
- Entrap ion
- Trichiasis
- Corneal trauma & ulceration

**Mx: -**

- Good personal hygiene
- Tetracycline eye oint. apply tid for 3-4weeks

LG #30	LO #8-Contribute to nursing care of the client receiving a blood transfusion
--------	--

### Instruction sheet

This learning guide is developed to provide you the necessary information regarding the following content coverage and topics:

- The rational for performing a blood transfusion
- Observations of the client undergoing blood transfusion
- Awareness of potential complications of blood transfusion
- Appropriate precautions are taken relating to bodily fluids

This guide will also assist you to attain the learning outcomes stated in the cover page. Specifically, upon completion of this learning guide, you will be able to:

- Confirm the rationale for performing a blood transfusion
- Contribute to observations of the client undergoing blood transfusion
- Work with an awareness of potential complications of blood transfusion
- Take appropriate precautions relating to bodily fluids

### Learning Instructions:

- 10** Read the specific objectives of this Learning Guide.
- 11** Follow the instructions described below.
- 12** Read the information written in the “Information Sheets”. Try to understand what are being discussed. Ask your trainer for assistance if you have hard time understanding them.
- 13** Accomplish the “Self-checks” which are placed following all information sheets.
- 14** Ask from your trainer the key to correction (key answers) or you can request your trainer to correct your work. (You are to get the key answer only after you finished answering the Self-checks).
- 15** If you earned a satisfactory evaluation proceed to “Operation sheets
- 16** Perform “the Learning activity performance test” which is placed following “Operation

sheets” ,

**17** If your performance is satisfactory proceed to the next learning guide,

**18** If your performance is unsatisfactory, see your trainer for further instructions or go back to “Operation sheets”.

## **Information sheet 1- The rationale for performing a blood transfusion**

### **1.1 Introduction**

The blood is the main transport system in the body. It carries raw materials and finished products from where they originate to where they are used and transports waste products to disposal sites.

Blood transfusion is an important part of day-to-day clinical practice. Blood and blood products provide unique and life-saving therapeutic benefits to patients. However, due to resource constraints, it is not always possible for the blood product to reach the patient at the right time. The major concern from the point of view of both user (recipient) and prescriber (clinician) is for safe, effective and quality blood to be available when required.

Blood transfusion is an essential part of modern health care. Used correctly, it can save life and improve health. However, as with any therapeutic intervention, it may result in acute or delayed complications. In addition, it carries the risk of transmission of infectious agents, such as HIV, hepatitis viruses, syphilis, etc.

Blood transfusions are most commonly done for blood components, such as red blood cells, platelets, or plasma. Before a blood transfusion, a medical provider will draw the blood. This sample will be sent to a laboratory for typing and cross-matching. Typing is when the lab determines blood type. Cross-matching is testing to determine if the blood is compatible with a donor's blood of the same type.

Transfusion of blood and products should be undertaken only to treat a condition that would lead to significant morbidity or mortality that cannot be prevented or managed effectively by other means.

The only true indication for the blood transfusion is the need to improve the delivery of O<sub>2</sub> to the tissues within a short time.

Patients with anaemia of undiagnosed cause should not be transfused until appropriate investigations have been performed.

### **1.2 Indications for blood transfusion**

- ✓ To increase the oxygen capacity of blood by giving red cells.
  - ✓ To restore the blood volume to maintain effective tissue perfusion.
  - ✓ To replace platelets, coagulation factors and other plasma proteins.
- 
- Blood may be needed in the following circumstances:
    - ✓ Blood loss:– Bleeding – Trauma
    - ✓ Inadequate production:– Diseases such as thalassemia, leukaemia
    - ✓ Excessive destruction of cells:– Disease – Mechanical
  - Get ready the emergency drugs such as vasopressors, antihistamine, steroids, and fluids
  - Prepare for CPR
  - Obtain a urine specimen and send to the laboratory
  - Save the blood container and tubing for return to the bank
  - Document the reactions and measures carried out

## **Information sheet 2- Observations of the client undergoing blood transfusion**

### **1.3 Contribute to observations of the client undergoing blood transfusion**

- Administration of blood and blood products is a common nursing activity; however, it carries with it certain risks.
- Knowledge about blood products and adherence to appropriate procedures for blood administration is critical.
- Recognition of reactions and rapid treatment is essential for the safe administration of blood products.
- The nurse is the central healthcare provider who performs the pre-administration assessment, safely infuses the product, monitors for potential adverse outcomes, and supports the patient through the entire process.
- Although accurate typing and testing of donor blood have made transfusions increasingly safer, healthcare professionals should be aware that there are still many early and late transfusion reaction risks associated with the transfusion process.
- Blood transfusions can take 1 to 4 hours. A blood transfusion involves giving you blood from a donor via an intravenous (IV) line.
- If you need blood in an emergency, though, you may receive the blood much more quickly than normal. This can be a life-saving measure if you are losing a significant amount of blood. Injuries or surgeries that cause a high amount of blood loss can become emergencies.

#### **Before the transfusion**

In cases of chronic medical conditions, the doctor will order a blood test called a complete blood count (CBC) to determine if you need a blood transfusion. It takes just a few minutes for blood to be drawn for this test.

**ABO System** Human blood is grouped according to the presence or absence of these specific antigens. The two major antigens, A and B, form the basis of the ABO system.

It is important that the recipient not have antibodies to the donor’s RBCs. If this were to occur, there could be a hypersensitivity reaction, which can vary from mild fever to anaphylaxis with severe intravascular hemolysis.

To prevent an acute hemolytic transfusion reaction (AHTR), blood for transfusion must be of a compatible ABO blood type. Patients should receive blood that matches their blood type.

Type O (negative) whole blood or RBCs may be used for any patient in an emergent situation and is known as the “universal donor.”

Persons with Type AB + (positive) can receive blood from any blood type and are considered the “universal recipient.”

Compatible Red Blood Cell Types – DONOR				
RECIPIENT	Type O	Type A	Type B	Type AB
Type AB	X	X	X	X
Type B	X		X	
Type A	X	X		
Type O	X			

**Blood typing**

Once the doctor has determined that the patient need a blood transfusion, a medical professional will draw another blood sample. The sample will be sent to a lab for testing known as blood typing and crossing. This testing can be done in just a few minutes. Knowing your blood type is important. It ensures the type of blood your doctor gives you is a match.

The patient’s identity will be checked to ensure you are given the correct blood. If you don’t already have an IV inserted, the medical professional will start an IV line. They will administer the blood through this line.

A nurse will remain with you for at least the first 15 minutes of the transfusion. This is because most reactions with blood transfusions, if they happen, occur immediately. Examples of transfusion reactions include:

### **First 15 minutes of transfusion**

- fever
- back pain
- itching
- difficulty breathing
- chills

If you have these symptoms, the transfusion will be stopped immediately.

### **One to four hours**

If the patient hasn't had a reaction, the nurse may speed up the rate of the transfusion. If the patient has a condition that affects your body's ability to maintain fluid balance, such as congestive heart failure, the transfusion may be slower. Over the course of the transfusion, the nurse or doctor will check patient's vital signs frequently. They'll check:

- blood pressure
- heart rate
- temperature



Feeling the effects of the transfusion can depend on:

- the amount of blood the transfusion started with
- patient's overall health
- why the patient need the transfusion

Ideally, the patient will start to feel better immediately after receiving the transfusion because their blood is better able to function as it should. Often, doctors will order a follow-up CBC about one hour after the transfusion to determine how the transfusion helped them.

### **How long do transfusion treatments last?**

Blood transfusions are usually intended to support patient's body until the condition subsides and their body can take over making blood again. The healthy body makes millions of new cells on a minute-by-minute basis. How long the treatment continues depends on why they need transfusions.

Standard practices should be in place to include appropriate testing, careful selection of donors, screening of donations, compatibility testing, storage of donations for clinical use, issue of blood units for either routine or emergency use, appropriate use of blood supplied or the return of units not needed after issue, and reports of transfusion reactions – all are major aspects where standard practices need to be implemented.

<b>Information sheet 3- Potential complications of blood transfusion</b>
--

### 3.1 Work with an awareness of potential complications of blood transfusion

- Complications of blood transfusion are rare but can be life-threatening.
- Most reported complications are because of transfusion of mismatched blood products and are avoidable through clinical vigilance.
- Transfusion-related acute lung injury is the most common cause of major morbidity and death after transfusion.

#### **Potential complications of blood transfusion**

- Pain at intravenous site and arm
- Loin pain
- Urticaria (hives)
- Nausea and/or vomiting
- Headache
- Flushing, chills and/or fever
- Anxiety
- Tachycardia
- Wheezing, progressing to cyanosis
- Haematuria
- Anaphylactic reaction/shock
- Cardiac arrest
- Death

Although skin provides some protection from exposure to potentially infectious substances, it is strongly recommended that health professionals use blood and body fluid precautions for further protection when they are providing health care. These precautions also help protect you from exposure to a potential infection from your health professional in the unlikely event that you come in contact with the health professional's blood.

To minimise the risk of spread of infection, all blood and body substances should be treated as potentially infectious. The techniques used in handling these substances are known as standard precautions.

### **Standard precautions**

Standard precautions are recommended in the handling of:

- blood, including dried blood
- all other body substances including saliva, urine and faeces (but excluding sweat), regardless of whether they contain visible blood
- broken skin
- mucous membranes (lining of nose, mouth and genitals).

Standard precautions are good hygiene practices relating to hand hygiene, the use of gloves and other protective clothing (as appropriate), and the safe disposal of waste.

### **Managing exposure to blood or other body substances**

If any person has contact with blood or body fluids, the following procedures should be observed:

- remove contaminated clothing
- if blood or body fluids get on the **skin**, irrespective of whether there are cuts or abrasions, wash well with soap and water
- if the **eyes** are splashed, rinse the area gently but thoroughly with water while the eyes are open
- if blood or body fluid gets in the **mouth**, spit it out and rinse the mouth with water several times, spitting the water out each time.

If a potential HIV or hepatitis B exposure occurs in the workplace, the PEP assessment should be provided through the work, health and safety procedures for the workplace.

PEP may:

- ✓ prevent the development of infection
- ✓ make the infection less severe
- ✓ reduce the risk of the infection being passed on to other people.
- PEP needs to begin as soon as possible after exposure to be effective.

### **Nurses Responsibilities for Blood Transfusion**

- Check vital signs every 5 minutes for first 15 minutes, 30 minutes, 1 hour and every hour until completion
- Observe the patient for reactions such as flushing, dyspnea, itching, hives or rash
- Maintain the prescribed flow rate as ordered

### **Nursing management regarding complications of blood transfusion, if occur-**

- Stop the transfusion immediately
- Notify the physician
- Connect the IV line with 0.9% normal saline
- Be with the client, observe the sign and symptoms and monitor the vital signs till they become stable

**Directions:** Answer all the questions listed below. Use the Answer sheet provided in the next page:

Self-Check-1	Written Test
--------------	--------------

I.Short answer

- 1.List the indications for blood transfusion
- 2.List at least five potential complications of blood transfusion

## References

1. Medical-Surgical Nursing, 10<sup>th</sup> edition, Brunner & Suddarth.pdf
2. Brunner & Suddarth's Text book of Medical-Surgical Nursing, 11<sup>th</sup> edition
2. Fundamentals of Nursing, standards & Practice, Second edition
4. HLTEN513B Implement and monitor nursing care for clients with chronic health problems: October, 2012
5. Gordon, Jacqueline M.; Lorilla, Jennifer D. and Lehman, Cheryl A., "The role of Clinical Nurse Specialist in the future of Health care in the United States" (2012).
6. Denis Hadjiliadis, MD, MHS, Paul F. Harron, Jr. Associate Professor of Medicine, Pulmonary, Allergy, and Critical Care, Perelman School of Medicine, University of Pennsylvania, Philadelphia, 2012.
7. National CRC Training Participant Manual, 2017.
8. Basic Emergency medical Technique Training Module, 2013.
9. Peter F. Edemekong; Deb L. Bomgaars; Sukesh Sukumaran; Shoshana B. Levy, 2020.
10. Rothrock JC, McEwen DR. *Alexander's Care of the Patient in Surgery*. 15th ed. St. Louis, MO: Mosby; 2007. [\[Context Link\]](#)
11. Association of periOperative Registered Nurses. *Perioperative Standards, Recommended Practices and Guidelines*. AORN Inc.: Denver, Colo.; 2008. [\[Context Link\]](#)
12. Peterson C. *AORN Perioperative Nursing Data Set*, (2nd ed.). AORN Inc.: Denver, CO; 2008. [\[Context Link\]](#)

## Key for self-Questions

**LO1: Self-check-1**

1.D                      6.C

2.A                      7.D

3.B                      8.a Prerenal ARF      b. Intrarenal ARF              c. Postrenal ARF

4.A

5.B

**LO1-Self-check-2**

1.Respect

2.Autonomy

3.Trust

**LO2-Self-check-1**

1.a.To help a new patient to adjust to hospital environment and routines.

b.To provide immediate care safety and comfort.

c.To observe sign and symptoms, and general conditions of the patient.

d.To enable the patient to use facilities, resource & personal of the hospital.

e.To alleviate fear, worry & loneliness about the hospital.

2.a.Emergency admission

    b.Routine admission

**LO2-Self-check-2**

1.Charting is written record of history, examinations tests, diagnosis, prognosis, therapy and response to therapy.

2 a.Progress in the patient's condition (cured)

b.No change in the patient's condition (Referral)

c.Against medical advice

d.Death

3. Equipment for charting and writing notes

- Report format
- Patient chart
- Pen

#### **LO4-Self-check-1**

1.A

2.C

3.A nursing care plan (NCP) is a formal process that includes correctly identifying existing needs, as well as recognizing potential needs or risks.

4. Purposes of a Nursing Care Plan are:

- ✓ Defines nurse's role
- ✓ Provides direction for individualized care of the client.
- ✓ Continuity of care
- ✓ Continuity of care
- ✓ Documentation.
- ✓ Serves as guide for assigning a specific staff to a specific client
- ✓ Serves as guide for reimbursement
- ✓ Defines client's goals

5. The seven Rights for safe medication administration are:

- ✓ The right patient
- ✓ The right medication (drug)
- ✓ The right dose
- ✓ The right route
- ✓ The right time
- ✓ The right reason
- ✓ The right documentation



### **LO5-self check-1**

1. Cardiopulmonary Resuscitation (CPR):-Is used when both breathing and beating of the heart stopped suddenly (Cardiac arrest& Respiratory arrest)

2. Methods for controlling external bleeding include:

- ✓ Direct pressure
- ✓ Elevation
- ✓ Pressure points
- ✓ Tourniquets

### **LO6:Self check-1**

1.b

2.c

3.d

4.a

5.d

### **LO8- Self check 1**

1. Indications for blood transfusion

- ✓ To increase the oxygen capacity of blood by giving red cells.
- ✓ To restore the blood volume to maintain effective tissue perfusion.
- ✓ To replace platelets, coagulation factors and other plasma proteins.

2. Potential complications for blood transfusion include:

- ✓ Pain at intravenous site and arm
- ✓ Loin pain
- ✓ Urticaria (hives)
- ✓ Nausea and/or vomiting
- ✓ Headache
- ✓ Flushing, chills and/or fever
- ✓ Anxiety
- ✓ Tachycardia
- ✓ Wheezing, progressing to cyanosis
- ✓ Haematuria
- ✓ Anaphylactic reaction/shock

- ✓ Cardiac arrest
- ✓ Death

### The trainers who developed the learning guide

No	Name	Qualification	Educational background	Region	PHONE CELL	E-mail
1	Feysal Mohammed	A	Nurse	Somali	0913505944	Feysalm28@gmail.com
2	Nigatu weyesa	A	Nurse	Benishang	0920315171	nigatuwey@gmail.com
3	Farhan Abubeker	A	MPH in RH	Harari	0915742083	Feru_ab@yahoo.com
4	Tesgera Begize	A	Nurse	Benishang	0945747265	Tesgera125@gmail.com
5	Bekuma Tadesse	A	Nurse	Oromiya	0913427926	bekumatadesse@gmail.co
6	Shu'ayb ahmed	B	Nurse	Somali	0915727482	Shucayba5@gmail.com

