LECTURE NOTES

For Nursing Students

Basic Clinical Nursing Skills

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In collaboration with the Ethiopia Public Health Training Initiative, The Carter Center,
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PREFACE

Nursing is core part in health service delivery system in which health promotion, disease prevention; curative and rehabilitative health strategies are applied. The clinical nursing skills for the nurses are of paramount important not only to provide comprehensive care but also enhance clinical competence. The purpose of preparing this lecture note is to equip nurses with basic clinical nursing skills, which will enable them to dispatch their responsibility as well as to develop uniformity among Ethiopian Professional Nurse Training Higher Institutions.

The lecture note series is designed to have two parts: part-I is composed of most basic clinical skills, where as part two will be covering most advances clinical skills as well as fundamental concepts related to the skills. It is well known that no nursing service can be provided with out basic clinical nursing skills. For nurse to provide health service at different settings; hospital, health center, health post and at the community level including home based care for chronically sick patients, the course is very essential. It is also hoped that other primary and middle level health professional training institution will utilize the lecture notes to rational exercise the professional skills.

The lecture note is therefore organized in logical manner that students can learn from simpler to the complex. It is divided in to units and chapters. Important abbreviations and key terminologies

have been included in order to facilitate teaching learning processes. On top of that learning objectives are clearly stated to indicate the required outcomes. Glossary is prepared at the end to give explanation for terminologies indicated as learning stimulants at beginning of each chapter following the learning objectives. Trial is made to give some scientific explanation for procedure and some relevant study questions are prepared to each chapter to aid students understand of the subject. To enhance systematic approach in conducting nursing care the nursing process is also indicated for most procedures.

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ABBREVATIONS & SYMBOLS

ABG	Arterial Blood Gas
Ab	Antibody
ABCDE	Airway, breathing, circulation, disability, expose and examine
A.C.	Before meal (ante cibum)
ACTH	Adreno cortico trophic hormone
AD.	As desired
ADL	Activities of daily living
AIDS	Acquire immeno deficiency syndrome
AI	Adequate intake
AM.	Morning
AMALG	Amalgam filling
AMA	Against medical advice
A and P	Auscultation and percussion
APC	Aspirin, Phenacetine & caffeine
AP	Apical pulse or antero-posterior
AQ	Aqueous
A-R	Apical radial pulse
AROM	Active range of motion; artificial rapture of membrane
Ax	Axillary
BID	Twice a day (bis in die)

B.M	Bowel movement
B.M.R.	Basal metabolic rate
B.P	Blood pressure
BPM	Beat perminuli
B.R.P.	Bathroom privilege
BUN	Blood urea nitrogen
^{o}C	Centigrade
C.B. C	Complete blood count
CC	Cubic centimeter
C.N. S.	Central nervous system
Co_2	Carbon dioxide
C.S. F.	Cerebro- spinal fluid
CXR	Chest X-ray
D and C	Dilatation and Curettage
D/NS	Dextrose in normal saline
DPT	Diphtheria, pertusis, tetanus
D/W	Dextrose in water
Dx	Diagnosis
EEG	Electro encephalogram
E.E.N.T.	Eye, ear, nose, throat
ECG	Electrocardiogram
^{o}F	Fahrenheit
F.B.S.	Fasting blood sugar
F.H.B.	Fetal heartbeat
G.I.	Gastro intestinal
G or Gm	Gram

gr.	Grain
gt.	Drop (gutte)
gtt.	Drops
G.U.	Genito urinary
GYN.	Gynecology
HCL	Hydrochloric acid
Hb	Hemoglobin
HS	At bed- time (hours of sleep)
H_2o	Water
I.V.	Intravenous
I.V.P	Intravenous pyelogram
KI.	Potassium iodide
L. P	Lumbar puncture
NaCl	Sodium Chloride
NOCTE	At night
N.P.O.	Nothing by mouth (nothing by os)
O.P.D.	Out Patient Department
O.R.	Operating room
PM	After noon
PRN	As needed, when necessary
Pt.	Patient
Q.	Every
Q.D.	Every Day
Q.H.	Every Hour
Q.I.D.	Four times a day
Q.N.	Every night

Q.O.D.	Every other day
R.B.C.	Red blood count or red blood cell
Rh.	Rhesus factor
Rx	Prescription, take
Sol.	Solution
SOS	If necessary
STAT	Immediately -at once
S.C	Subcutaneous
T. I.D	Three times a day
T.P.R.	Temperature, pulse, respiration
Tsp	Teaspoon, tablespoon
U.R.	Upper right
WBC	White blood cells
Wt.	Weight
U.R.Q.	Upper right quadrant
U.L.Q.	Upper lower quadrant
UTI	Urinary tract Infection

UNIT ONE

CHAPTER 1

INTRODUCTION

Learning Objectives:

After completing this unit, the learners will be able to:

- State the modern definition of nursing
- Outline the historical background of nursing world wide and in Ethiopia
- Identify the contribution of significant individuals in nursing
- Describe the nursing process
- Describe critical thinking as an instrument for provision of quality care

Nursing

Definition:

"It is the diagnosis and treatment of human responses to actual or potential health problems" (ANA 1980).

It is assisting the individual, sick or well in the performance of those activities contributing to health or its recovery (to peaceful death) that he will perform unaided, if he had the necessary strength, will or knowledge and to do this in such a way as to help him gain independence as rapidly as possible (Virginia Henderson 1960).

Nursing is the art and science that involves working with individual, families, and communities to promote wellness of body, mind, and spirit. It is a dynamic, therapeutic and educational process that serves to meet the health needs of the society, including its most vulnerable members.

Historical Background of Nursing

Nursing has a history as long as that of human kind. Human beings have always faced the challenge of fostering health and caring for the ill and dependent. Those who were especially skilled in this area stood out and, in some instances, passed their skills along to others. Uprichard (1973) described the early history of nursing using three images: the folk image, the religious image, and the renaissance image.

The Folk Image of Nursing:

The Nurse as Mother

The early development of nursing was rarely documented, so we must speculate about its character from what we know of early civilizations. The nurse was generally a member of the family or, if not, then a member of the community who demonstrated a special skill in caring for others. Nursing in this perspective was seen largely as a feminine role an extension of mothering. Indeed, the word nursing itself may have been derived from the same root as the words nourish and nurture. This view of nursing was prevalent in the earliest historical records and is still present in primitive cultures.

The Religious Image of Nursing:

The Nurse as God's Worker

In the Bible, a woman named ***Phoebe*** is identified as the first ***deaconess***, a word meaning ***servant*** or ***helper***. Deaconess cared for widows, orphans, and the sick. ***Olympias,*** a woman of Constantinople, set up a hospital to care for the sick. In Rome, ***Marcella*** established a monastery for those in need of care. ***Fabiola***, who was converted to Christianity by Marcella, established hospitals for the sick poor. In the middle Ages, the traditional role of the religious groups in caring for the ill was continued by various orders of ***monks*** and ***nuns***. When the crusade attempted to regain Jerusalem from Muslim control, the ***Knights Hospitalers***, and order of religious workers who cared for the injured and fought to protect them, marched with the armies. During this time, unfortunately, the knowledge of hygiene and sanitation gained by Greek, Roman, Egyptian, and other ancient civilizations was forgotten. There was no growth or development in knowledge regarding care of the sick.

Throughout the **Middle Ages** and into the **Reformation**, religious orders ran almost all of the hospitals and provided most of the nursing care in Europe. With the advent of the Reformation and the presence of Protestant religious groups, the nature of these orders changed. Women might join for a limited period of time, rather than devoting the entire lifetime to service. They were again referred to as deaconess, the term used in the early church. For example, a church order of deaconesses was organized by ***Pastor Theodor Fleidner*** in Kaiserswerth, Germany called the ***Sisters of Mercy*** of the Church of England. Another order established St. John's House, an Anglican Hospital in London. The Protestant Nursing groups were comprised totally of women, and only one nursing order made up of men, the ***Brothers Hospitalers*** of St. John, remained in the Catholic Church. The Muslim religion has a similar tradition of service to others in the name of God. ***Rofiada al Islamiah***, one of the wives of Mohammand who cared for the sick and injured, is considered the mother of nursing in the Mideastern Muslim countries (Meleis, 1985).

The Renaissance Image of Nursing:

The Nurse as Servant

The Renaissance saw the decline of monastic orders and the rise in individualism and materialism. There was a radical change from the image of the selfless nurse that had developed in the early Christian period and the Middle Ages. Care of the ill was delegated to servants and those unable to find any other means of support. The hospitals of this time were plagued by pestilence and filled with

death; those who worked in them were seen as corrupt and unsavory.

The Emergence of Modern Nursing

To some extent, the three early images of the nurse were held simultaneously for hundreds of years. Then, in the 19th century, one woman changed the course of nursing: ***Florence Nightingale***. Although born to wealth and a family well placed in Victorian English Society, Florence Nightingale had a firm belief in Christian ideals that made h1er disdainful of a life of luxury. She believed her true calling was to minister to the sick. As an intelligent and well-educated woman, she recognized that optimum care of the sick required education. She persevered against family and social opposition and initiated personal study and research into sanitation and health. She studied with ***Pastor Fleidner*** of 33, was to reorganize the care for the sick at a hospital established for "Gentlewomen in Distressed Circumstances."

Nightingale's success in her first post led Britain's secretary of war to recruit her for a far more arduous reorganization. Britain was then engaged in a major war in the ***Crimea***; reports were coming back that more men died of wounds in the hospitals than on the battlefield. Funds were raised and nurses recruited for Florence Nightingale's Crimean campaign. When she arrived at the front, Nightingale found that conditions in the military hospitals were abominable. The absence of sewers and laundry facilities, the lack of supplies, the poor food, and the disorganized medical services

contributed to a death rate of more than 50% among the wounded. Nightingale insisted on retaining control of all of her supplies, funds, and personnel. Her efforts and those of her staff reduced the death rate among the wounded to less than 3%. She eventually completely reformed the military's approach to the health care of the British soldier.

In 1860, she created a school of nursing, which was the model for most nursing education in England. The school was organized around three components: 1) a trained matron with undisputed authority over all members of the staff, 2) a planned course of theoretical and practical training, and 3) a home attached to the hospital in which carefully selected students were placed in the care of "sisters" responsible for their moral and spiritual training. (The English term **"sisters"** used for secular nurses reflects nursing's religious history.) Nightingale established educational standards for the students – she concerned herself not just with health care needs but with human needs.

Her school prepared nurses for hospital care (where they were called **"ward sisters"**) and for supervisory and teaching positions. Nightingale also set up a program for preparing **"district"** nurses, the **public health/visiting nurses** of England. She wrote that these district nurses needed additional education because they would be working more independently than the hospital staff members.

Nightingale's strong statements about the role of nurses and their need for lifelong education are still quoted widely today. Perhaps

she, more than anyone else, can be credited with establishing nursing as a profession.

In the early ages, much of the practice of medicine was integrated with religious practices. Before the development of modern nursing, women of nomadic tribes performed nursing duties, such as helping the very young, the old, and the sick, care-dwelling mothers practiced the nursing of their time.

As human needs expanded, nursing development broadened; its interest and functions through the social climates created by religious ideologies, economic development, industrial revolutions, wars, crusades, and education. In this way modern nursing was born.

The intellectual revolution of the 18th and 19th centuries led to a scientific revolution. The dynamic change in economic and political situations also influenced every corner of human development including nursing. It was during the time of Florence Nightingale (1820-1910) that modern nursing developed. She greatly modified the tradition of nursing that existed before her era. She also contributed to the definition of nursing “to put the patient in best possible way for nature to act." Since her time modern nursing development has rapidly occurred in many parts of the world.

History of Nursing in Ethiopia

Even though Ethiopia is one of the oldest countries in the world, introduction of modern medicine was very late. Health care of communities and families was by Hakim (wogesha or traditional healers).

Around 1866 missionaries came to Eritrea, (one of the former provinces of Ethiopia) and started to provide medical care for very few members of the society. In 1908 Minlik II hospital was established in the capital of Ethiopia. The hospital was equipped and staffed by Russians.

Later hospital building was continued which raised the need to train health auxiliaries and nurses. In 1949 the Ethiopian Red Cross, School of Nursing was established at Hailesellasie I hospital in Addis Ababa. The training was given for three years. In 1954 HailesellasieI Public Health College was established in Gondar to train health officer, community health nurses and sanitarians to address the health problem of most of the rural population. In line with this, the Centralized school of Nursing formerly under Ministry of health and recently under Addis Ababa University Medical Faculty and Nekemit School of nursing are among the senior nurse's training institutions.

During the regimen of 'Dergue', the former bedside and community health nursing training was changed to comprehensive nursing. An additional higher health professional training institution was also established in Jimma(1983) to train health professionals using educational philosophy of community based and team approach.

After the overthrown of the Dergue, the transitional government of Ethiopia developed a health policy that emphasizes health promotion, diseases prevention, and curative and rehabilitative health service with priority to the rural societies and major emphases were given to backwarded and areas affected highly by manmade calamities. Additional public health professional training institutions were opened in Alamaya University and Dilla College of Teacher Education and Health Sciences (1996). As the result of the policy more health professionals were trained.

Following further expansion of higher learning, Mekele University has started medical education and the former diploma offering university have upgraded to degree program in which nursing education is a part. In this line Hawassa University, College of Health Sciences also opened new medical education to the former existing health sciences programs. The Federal Ministry of Defense, established a University College under which the college of health sciences offering training for health professionals including nursing. The outputs of these training institutions are providing services all over the country not only to improve the health status of our society but also to ensure the attainment of millennium health development goals.

NURSING PROCESS and CRITICAL THINKING

Nursing Process:

Definition: Nursing Process is a tool or method for organizing and delivering care or a deliberate intellectual activity where by the practice of nursing is approached in an orderly systematic manner. It is a systematic problem solving approach to client care. It is a series of planned steps and actions directed toward meeting the need and solving problems of people and their significant others; it is systematic, scientific problem solving in action (Sorensen and Luckman, 1986)

Purpose of Nursing Process:

1. To identify clients health care needs
2. To establish nursing care plan so as to meet those needs
3. To complete the nursing intervention designed to meet the needs
4. To provide individualized care

Linda Hall first introduces the term nursing process in 1965.

Step of the Nursing Process

The nursing process has five steps:

1. Assessment – the systematic collection of data to determine the patient's health status and to identify any actual or potential

health problems. In nursing assessment the best sources of information about the client are the client and the family. Health professionals, previous client records and significant others also act as information sources. Data collected about a client generally fall into one of the two categories: objective or subjective

Objective data include all the measurable and observable pieces of information about the client and his or her overall state of health. The term objective means that only precise, accurate measurements or clear descriptions are used.

Subjective data consists the client's opinions, feelings about what is happening. Only the client can tell you that he/she is afraid or has pain. Some times the client can communicate through body language: gesture, facial expressions and body posture. To obtain subjective data you need sharp interviewing, listening, and observation skills.

Methods of data collection

Observation is an assessment tool that relies on the use of the five senses (sight, touch, hearing, smell and taste) to discover information about client.

Health interview- the health interview is a way of soliciting information from the client. This interview may also be called a nursing history.

Physical examination

(Analysis of data is included as part of the assessment. For those who wish to emphasize its importance analysis may be identified as a separate step of the nursing process.)

2. Diagnosis – identification of the following two types of patient problems:

   a) Nursing diagnosis – actual or potential health problems that can be managed by independent nursing interventions.

      Purposes of the Nursing Diagnosis- the nursing diagnosis serves the following purposes:

      - Identifies nursing priorities
      - Directs nursing interventions to meet the client's high priority needs
      - Provides a common language and forms a basis for communication and understanding between nursing professionals and health care team.
      - Guides the formulation of expected outcomes for quality assurance requirements of third party payer.
      - Provides a basis for evaluation to determine if nursing care was beneficial to the client and cost effective.
      - Is of help when making staff assignment.

The diagnostic statement

The client may present with more than one problem. Therefore, the nursing diagnosis may be made up of multiple *diagnostic statements.* Each diagnostic statement has two or three parts depending on the healthcare facility. The three-part statement consists of the following components:

- Problem
- Etiology
- Signs and symptoms, a two-part diagnostic statement consists of the problem, and signs and symptoms.

Problem

The problem portion of a statement describes- clearly and concisely- a health problem a client is having. Use one of the NANDA-approved nursing diagnostic labels to state the problem

Etiology

The etiology part of the diagnostic statement is the cause the problem. Etiology may be physiologic, psychological, sociologic, spiritual, or environmental.

Sign and symptoms- the third part of the diagnostic statement summarizes data. You may need to include several signs and symptoms. For instance, the client with pneumonia had cough with thick sputum, abnormal breath sounds, increased respiration, and difficulty breathing.

Writing the Diagnostic Statement

The diagnostic statement connects problem, etiology, and signs and symptoms. The first two parts of the statement are linked by" related to," some times abbreviated **R/T.** The last two parts are linked by "as evidenced by," some times abbreviated **AEB**.

E.G. *Ineffective Airway Clearance related to physiologic effects of pneumonia as evidenced by increased sputum, coughing, abnormal breath sounds, tachypnea, and dyspnea.*

b) Collaborative problems – certain physiologic complications that nurse monitor to detect onset or changes in status. Nurses manage collaborative problems using physician – prescribed and nursing prescribed interventions to minimize the complications of the events.

3. Planning – development of goals and a plan of care designed to assist the patient in resolving the diagnosed problems. Setting priorities, establishing expected outcomes, and selecting nursing interventions result in plan of nursing care.

Setting priorities

Nursing diagnoses are ranked in order of importance. Survival needs or imminent life threatening situations takes the highest priority. For example, the needs for air, water and food are survival needs. Nursing diagnostic categories that reflect these high-priorities needs include Ineffective Airway Clearance and deficient fluid volume.

Establishing Expected Outcomes

An expected outcome is a measurable client behavior that indicates whether the person has achieved the expected benefit of nursing care. It may also be called a *goal* or *objective.* An expected outcome has the following characters tics:

- Client oriented
- Specific
- Reasonable
- Measurable

Selecting Nursing Intervention

Nursing intervention is also called nursing orders or nursing actions, are activities that will most likely produce the desired outcomes (short-term or long-term). To achieve this outcome, one should select nursing interventions such as the following examples:

- Offering fluids frequently
- Positioning frequently
- Teaching deep breathing exercise
- Monitoring vital signs
- Administering oxygen, etc. accordingly.

4. Implementation – actualization of the plan of care through nursing interventions.
5. Evaluation – determination of the patient's responses to the nursing intervention and the extent to which the goals have been achieved.

N.B. Dividing the nursing process into five distinct components or steps serves to emphasize the essential nursing actions that must be taken to resolve patient's nursing diagnoses and manage any collaborative problems or complications.

Critical thinking:

It is defined as an intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and or evaluating information gathered from, or generated by observation, experience, reflection, reasoning or communication, as a guide to belief and action. Critical thinking involves problem solving and decision making process, but it is a more complex process. Critical thinking competencies are the cognitive processes a nurse in clinical situations include diagnostic reasoning clinical inferences, and clinical decision-making. The nurse process is considered the specific critical thinking competency in nursing. Critical thinking skill assists the nurse to look at all aspects of a situation and then at a conclusion. When critical thinking is employed in clinical situations one should expect the how to examine ideas, beliefs, principles, assumptions, conclusions, statements and inferences before coming to a conclusion and make a decision

Study Questions:

1. Define nursing using modern definition.
2. List nurse professionals who significantly contributed to professional development.
3. State the historical trends of nursing development.
4. Mention steps in nursing process.
5. State two common ways of collecting data about client.
6. Describe critical thinking.

UNIT TWO

SAFETY IN HEALTH CARE FACILITIES

CHAPTER TWO

INFECTION CONTROL/ UNIVERSAL PRECAUTION

Learning Objectives:

At the end of this chapter the learner will be able to:

- Describe infection prevention in health care setups
- List chain of infection
- Identify between medical asepsis and surgical asepsis
- Discuss the purpose, use and components of standard precautions.
- Maintain both medical and surgical asepsis
- Describe how to setup a client's room for isolation, including appropriate barrier techniques.
- Identify hoe to follow specific airborne, droplet and contact precautions.

New Terminology

- Airborne precaution
- Contact precaution
- Droplet precaution
- Isolation
- protective isolation
- standard precaution
- transmission-based precaution

Nursing Process

Assessment

- Identify appropriate times for hand washing
- Identify type of protective clothing required for barrier nursing.
- Identify epidemiology of the disease to determine how to prevent infection from spreading.
- Identify equipment needed to prevent spread of organisms
- Assess method of terminal cleaning and disposing equipment.
- Assess method of hand washing that is most appropriate for assigned task.
- Identify clients at risk for infection
- Assess availability of equipment for frequent hand washing.
- Evaluate health status of the nurse
- Check agency policy for hand washing protocol
- Assess need for use of unsterile gloves
- Assess nurses and clients for latex allergies
- Assess need for laterx-free equipment and/or environment.

Planning/Objective

- To prevent the spread of endogenous and exogenous flora to other client.

- To reduce potential for transforming organisms from the hospital environment to the clients from acquiring nosocomial infections.
- To deliver client care with pathogen-free hands.
- To prevent pathogenic microorganisms spreading from client to client, environment or health care personnel to client.
- To prevent health care workers from contamination.

Implementation

- Preparation for isolation
- Donning and removing isolation attire
- Using a mask
- Assessing vital signs
- Removing items from isolation room
- Utilizing double-bagging for isolation
- Removing a specimen from isolation room
- Transporting isolation client outside the room
- Removing soiled large equipment from isolation room
- Hand washing (Medical asepsis)
- For using Waterless Antiseptic Agents
- Cleaning Washable Articles
- Donning (putting on) and Removing clean Gloves
- Managing Latex Allergies

Evaluation/Expected Outcomes

- Isolation environment is maintained to prevent contamination of surrounding area.
- Personnel working with isolation clients remain free of infection.
- Infection is prevented from spreading from person to person, person to environment and vice versa.
- Cross-contamination is prevented from patient to health personnel, client to client from staff to patient.
- Health care workers are protected from infection
- Infection is prevented from spreading from person to person, person to environment and vice versa.
- Cross-contamination is prevented from patient to health personnel, client to client from staff to patient.
- Health care workers are protected from infection

Infection Control/Universal Precaution

Nurses are involved in providing a biologically safe environment and promoting health. Microorganisms exist everywhere in the environment; in water, soil and body surfaces such as skin, intestinal tract, and other areas open to the outside.

Normal Body Defense

Individuals normally have defenses that protect the body from infection. These defenses can be categorized as non-specific and specific.

Specific Defenses

Specific defenses (immune): are directed against identifiable bacteria, viruses, fungi, or other infectious agents. Specific defenses of the body involve the immune system, which responds to foreign protein in the body (E.g. bacteria or transplanted tissues) or, in some cases even the body's own proteins.

Immunity is the specific resistance of the body to infection (pathogens or their toxins), There are two major types of immunity: active and passive. Through active immunity, the host produces its own antibodies in response to natural antigens (e.g. infection) or artificial antigens (e.g. vaccines) with passive immunity, the host receives natural (e.g. from a nursing mother) or artificial (e.g. from an injection of immune serum) antibodies produced by another source.

Non-specific defenses protect the person against all microorganisms, regardless of prior exposure. Non-specific defenses include anatomic and physiologic barriers. In fact skin and mucus membranes are body's first line of defense against microorganisms.

Inflammation is a local and non-specific defense response of the tissues to injury or infection. It is an adaptive mechanism that destroys or dilutes the injurious agent, prevents further spread injury, and promotes the repair of damage tissue. Inflammation is characterized by the following classic signs and symptoms of (Virchow, 1821-1902):

(a) Pain (dolor), (b) Swelling (tumor), (c) Redness (rubor), (d) Heat (calor), and (e) Impaired function of the part (fanctio laesa), if the injury is severe. Often words with “it is” describe an inflammatory process.

An infection is an invasion of the body tissue by microorganisms and their proliferation there. Such a micro organism is called infections agent.

Pathogencity is the ability to produce disease; thus a pathogen is a microorganism that causes disease. A “true” pathogen causes disease or infection in a healthy individual. An opportunistic pathogen causes disease only in a susceptible individual. Etiology is the study of causes; the etiology of an infectious process is the identification of the invading microorganisms. Infectious diseases are the major cause of illness and death in Ethiopia.

Chain of Infection

There are six links in the chain of infection:

1. The etiologic agent, or micro organism:
2. The reservoir, the place where the organism naturally resides.
3. Portal of exist from reservoir
4. Method of Transmission
5. Portal of entry in to the host
6. Susceptibility of the host

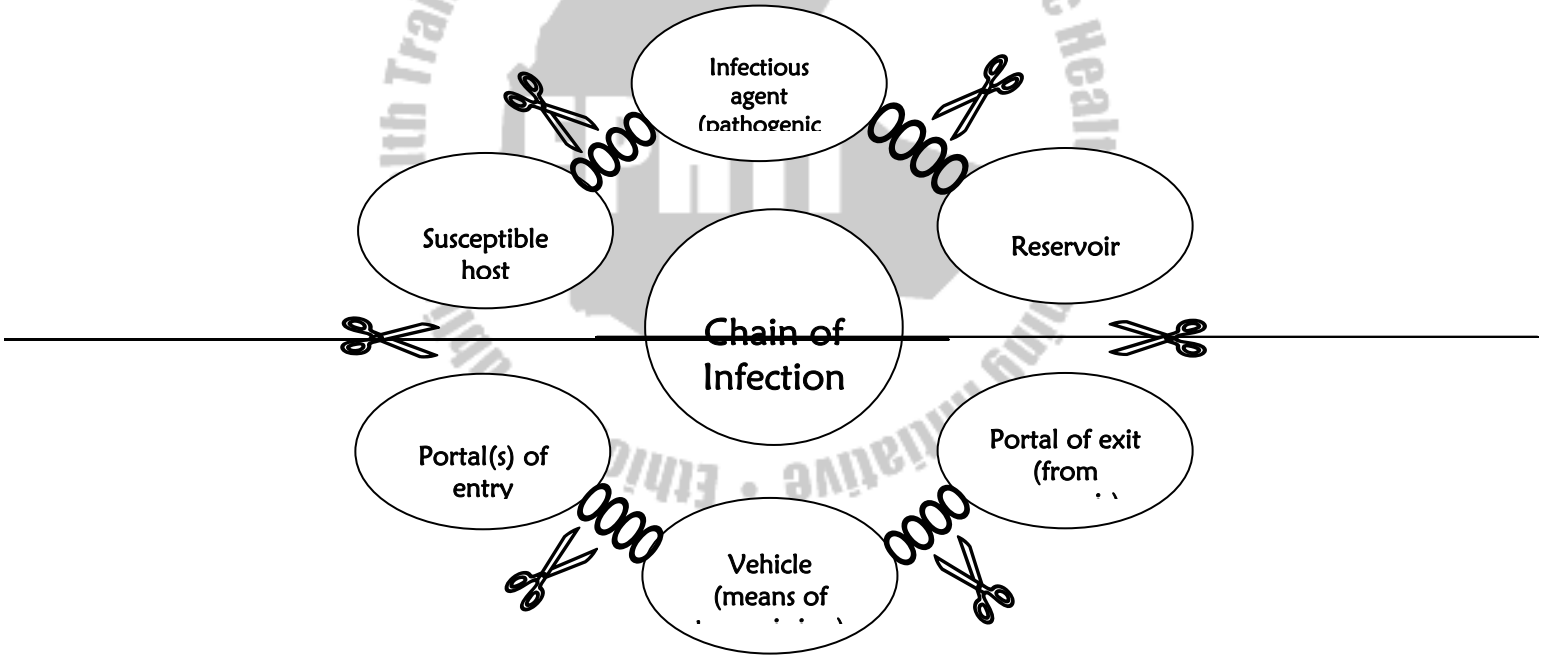


Figure 1. Chain of infection and ways to break transmission of infection.

Conditions Predisposing to Infection

Certain conditions and invasive techniques predispose clients to infection because the integrity of the skin is broken or the illness itself establishes a climate favorable for the infectious process to occur. Among the most common are surgical wounds, changes in the antibacterial immune system, or alterations to the body.

Nosocomial Infection

Nosocomial infections are infections that are acquired while the client is in the hospital, infections that were not present or incubating at the time of admission.

Standard Precautions

Standard precaution is also called universal precautions. These were instituted as a result of the human immunodeficiency virus (HIV) epidemic. Blood and body fluid precautions were practiced on all clients regardless of their potential infectious state.

In 1987, body substance isolation (BSI) was proposed. The intent of this isolation system was to isolate all moist and potentially infectious body substances (blood, feces, urine, sputum, saliva, wound drainage and other body fluids) from all clients, regardless of their infectious status, primarily through the use of gloves.

Standard precaution blends the major features of universal precautions (blood and body fluids precautions) and body substance isolation into a single set of precautions to be used for the care of all

clients in hospitals, regardless of their diagnosis or presumed infection status. The new standard precautions apply to blood, all body fluids, secretions, and excretions, whether or not they contain visible blood; non-intact skin; and mucus membrane.

Fundamental Principles: Certain fundamental principles should be applied to all clients. These include hand washing, use of gloves, proper placement of clients in hospital to prevent spread of microorganisms to others or to the client, and appropriate use of isolation equipment to prevent the spread of microorganisms to health care workers and other clients.

Basic Medical Asepsis

Hand washing (Medical Asepsis)

Purpose

- To prevent the spread of infection
- To increase psychological comfort

Equipment

- Soap for routine hand washing
- Orange wood stick for cleaning nails, if available
- Running warm water, paper towel, trash basket

Procedure

1. Stand in front of but away from sink to avoid touching of uniform to a sink.
2. Ensure that paper towel is hanging down from dispenser.
3. Turn on water using foot pedal or faucet (using elbow of hand) so that flow is adequate, but not splashing.
4. Adjust temperature to warm. **Rationale**: cold does not facilitate sudsing and cleaning; hot is damaging to skin.
5. Wet hands under running water, wet hands facilitate distribution of soap over entire skin surface.
6. Place a small amount, one to two teaspoons (5-10mL) of liquid soap on hands. Thoroughly distribute overhands. Soap should come from a dispenser, possible; this prevents spread of microorganism.
7. Rub vigorously, using a firm, circular motion, while keeping your fingers pointed down, lower than wrists. Star with each finger, then between fingers, then palm and back of hand to create friction on all surfaces.
8. Wash your hands for at least 10-15 seconds. Duration of washing is important to produce mechanical action and allow antimicrobial products time to achieve desired effect.
9. Clean under your fingernails with an orangewood stick. (This should be done at least at start of day and if hands are heavily contaminated).

10. Rinse your hands under running water, keeping fingers pointed down ward in order to prevent contamination of arms.
11. Resoap your hands, rewash, and rerinse if heavily contaminated.
12. Dry hands thoroughly with a paper towel, while keeping hands positioned with fingers pointing up. Moist hands tend to gather more microorganisms from the environment.
13. Turn off water faucet with dry paper towel, if not using foot pedal to avoid contaminating the hands.
14. Restart procedure at step 5 if your hands touch the sink any time between steps 5 and 13.

Donning and Removing Gloves

Equipment

- Gloves (both clean and sterile)
- Trash receptacle

Procedure

1. Wash your hands to remove microorganism and avoid contamination.
2. Remove glove from glove receptacles

3. Hold glove at wrist edge and slip finger into opening. Pull glove up to wrist.
4. Place gloved hand under wrist edge of second glove and slip fingers in to opening.
5. Remove glove by pulling off, touching only out side of glove at cuff, so that glove turns inside out.
6. Place rolled-up glove in palm of second hand.
7. Remove second glove by slipping one finger under glove edge and pulling down and off so that glove turns inside out. Both gloves are removed as a unit.
8. Dispose of gloves in proper container, not at bedside.
9. Wash your hands.

Standard Precaution

Nursing Process

Assessment

- Assess for skin integrity
- Assess for presence of drainage from lesions or body cavity.
- Assess for ability to deal with oral secretions.
- Assess for compliance to hygiene measure (i.e., covering mouth when coughing, ability to control body fluid).
- Assess ability to carry out activities of daily living (ADL).

- Assess extent of barrier techniques needed (i.e., gloves, gown, mask, protective eye wear).
- Assess need for special equipment (i.e., hazardous west bags, plastic bags for specimens).

Planning

- To prevent clients (especially compromised clients) from acquiring nosolomial infections.
- To prevent the spread of micro organism to health professionals.
- To reduce potential for transmission of micro organisms.
- To protect hospital personnel and others from contamination.
- To provide appropriate equipment and techniques for preventives measures.

Implementation/Procedures

Donning protective gear utilizing standard precautions.

Exiting a client's room utilizing standard precautions.

Evaluation/Expected outcomes

- Clients remain infection free.
- Transmission of micro organism is controlled.

- Health care workers protected from micro organism.
- Appropriate nursing interventions are carried out for the client.

Donning Protective Gear Utilizing Standard Precautions

Equipment

- Disposable gloves
- Gown
- Mask
- Apron
- Cap
- Protective eye wear (gogle)

Procedure

1. Wash hands using soap and dry.
2. Put on gown by placing one arm at a time though sleeves wrap gown around body so it cover clothing completely.
3. Bring waist ties from back to front of gown or turn back according to hospital policy. This ensures that entire clothing is covered by the gown, preventing accidental contamination.
4. Tie gown at neck or adher velcro strap to gown

5. Don mask. Rationale: Masks are worn when there is an anticipated contact with respiratory droplet secretiveness.
6. Don protective eye wear such as face shield. Face shields will protect the nurse from splashing of blood or body fluids while caring for clients.
7. Done disposable gloves.

Standard Precaution Guidelines

- Wash hands thoroughly after removing gloves and before and after all client contact
- Wear gloves when there is direct contact with blood, body fluids, secretions, excretions, and contaminated items. This include neonate before first bath, wash as soon as possible if an anticipated contact with this body substances occurs.
- Protect clothing with gowns or plastic aprons if there is a possibility of being splashed or direct contact with contaminated material.
- Wear masks, goggles, or face shield to avoid being splashed including during suctioning, irrigations, and deliveries.
- Do not break or recap needles, discard them intact in to puncture resistant containers except for ABG (arterial blood gas).

- Place all contaminated articles and trash in leak proof bags. Check hospital policy regarding double bagging.
- Clean spills quickly with a 1:10 solution of bleach or according to facility policy.
- Place clients at risk of contaminating the environment in a private room with separate bathroom facilities.
- Transport infected clients using appropriate barriers,
- Dispose waste using three baskets system

Surgical Asepsis (sterile technique)

Definition: Practices, which will maintain area free from microorganisms, as by surgical scrub, or sterile technique.

Surgical asepsis is used to maintain sterilize. Use of effective sterile technique means that no organisms are carried to the client. Microorganisms are destroyed before they can enter the body.

Sterile technique is used when changing dressings, administering parentral (other than the digestive tract) medications, and performing surgical and other procedures such as urinary catheterization. With surgical asepsis, first articles are sterilized, and then their contact with any unsterile articles is prevented. When a sterile article touches an unsterile article, it becomes contaminated. It is no longer sterile.

Disinfection and sterilization

Disinfection: is a process that results in the destruction of most pathogens, but not necessarily their spots. Common methods of disinfection include the use of alcohol wipes, a hexachlorophene or chlorohexidine gluconate soap scrub, or povidone-iodine scrub to kill microorganisms on the skin.

Stronger disinfectants include phenol and mercury bichoride, which are too strong to be used on living tissue. Boiling can be used to disinfect in animate objects. However, it does not destroy all microorganisms or spores.

Sterilization:

It is the process of exposing articles to steam heat under pressure or the chemical disinfectants long enough to kill all microorganisms and spores.

Exposure to steam at 18 pounds of pressure at a temperature of 125^{o}_{c} for 15 minutes will kill even the toughest organisms. A pressure steam sterilizer is called an autoclave.

Some chemicals also can be used to sterilize an object. However, chemical disinfectants powerful enough to destroy germs or extreme temperature cannot be used on certain articles, such as plastic.

Sharp cutting instruments usually sterilized by dry heat, or chemicals. To day, however, most sharps such as scalpels, and suture removal scissors- are disposable. Needles used for injections are always discarded. Other methods of sterilization include radiation and gas sterilization with ethylene oxide.

Items to be use to maintain sterility technique

Hair covering:

In sterile environments a cap or hood is worn to cover the hair. Remember that no hair can show. If the hair is long, a special type of hood will be worn.

Surgical Mask

In strict sterile situations such as in operation room (OR) or with protective isolation, the mask covers the mouth and nose. The purpose of mask is to form a barrier to stop the transmission of pathogens. In the OR or during other sterile procedure, the mask prevents harmful microorganisms in your respiratory tract from spreading to the client. When the client has an infection, the mask protects you from his/ her pathogens.

Sterile gown

Sterile gown is commonly worn in the OR, with protective isolation and some times in the delivery room. The hands touch only the part of sterile gown that will touch the body after the gown is in place. Thus, touch only the inside of the gown. Some one else ties the strings. The back of the gown is considered contaminated, even though it was sterile when put on. Any part of the gown below waist level and above nipple level is also considered contaminated. Be careful when wearing a sterile gown not to touch any thing that is unsterile.

Sterile Gloves

For some procedures sterile gloves are worn. Remember that once gloves are put on, touching any thing unsterile contaminates them. Therefore, make all preparations before putting on gloves.

Procedures for putting on sterile gloves:

Steps:

1. Wash the hands to limit the spread of microorganisms
2. Open the outer glove package, on a clean, dry, flat surface at waist level or higher
3. If there is an inner package, open it in the same way, keeping the sterile gloves on the inside surface with cuffs towards you.
4. Use one hand to grasp the inside upper surface of the glove's cuff for the opposite hand. Lift the glove up and clear it of the wrapper.
5. Insert the opposite hand in to the glove, placing the thumb and finger in to the proper openings. Pull the gloves in to place, touching only the inside of the glove at cuff. Leave the cuff in place.
6. Slip the fingers of the sterile gloved hand under (inside) the cuff of the remaining glove while keeping the thumb pointed outward.
7.
    a. Insert the ungloved hand in to the glove

b. Pull the second glove on; touching only then outside of the sterile glove with the other sterile gloved hand and keeping the fingers inside the cuff.

c. Adjust gloves and snap cuffs in to place. Avoid touching the inside glove and wrist area

8. Keep the sterile gloved hands above waist level. Make sure not to touch the cloths. Keep hands folded when not performing a procedure. Both actions help to prevent accidental contamination.

Isolation

Isolation is defined as separation from others, separation of people with infectious disease or susceptible to acquire disease from others.

Isolation technique is a practice that designed to prevent the transmission of communicable diseases.

Types of isolation

Historically, two primary types of isolation systems were used in health care:

1. Category -specific isolation
2. Disease- specific isolation

Currently these isolation classifications are mostly replaced by standard precaution and transmission based precaution.

How ever, still some facilities follow such system.

Category-specific isolation, specific categories of isolation (eg. Respiratory, contact, enteric, strict or wound) are identified, using color-coded cards. This form of isolation is based on the client's diagnosis. The cards are posted outside the client's room and state that visitors must check with nurses before entering.

Disease –specific isolation, uses a single all-purpose sign. Nurse selects the items on the card that are appropriate for the specific disease that is causing isolation.

Preparing for Isolation

Purpose

To prevent spread of microorganisms

To control infectious diseases

Equipment

Specific equipment depends on isolation precaution system used.

- Soap and running water.
- Isolation cart containing masks, gowns, gloves, plastic bags isolation tape.
- Linen hamper and trash can, when needed.
- Paper towel
- Door card indicating precautions

Procedure

1. Check orders for isolation
2. Obtain isolation cart from central supply, if needed.
3. Check that all necessary equipment to carry out the isolation order is available.
4. Place isolation card on the client's door.
5. Ensure that linen hamper and trash cans are available, if needed.
6. Explain purpose of isolation to client and family.
7. Instruct family in procedures required.
8. Wash hands with antimicrobial soap* before and after entering isolation room.

   * Types of antimicrobial soap or agent depend on infectious agent and client condition.

Donning and Removing Isolation Attire

Equipment

- Gown
- Clean gloves

Procedure

For donning attire

1. Wash and dry hands
2. Take gown from isolation cart or cupboard. Put on a new gown each time you enter an isolation room.
3. Hold gown so that opening is in back when you are wearing the gown.
4. Put gown on by placing one arm at a time through sleeves, put gown-up and over your shoulder
5. Wrap gown around your back, tying strings at your neck.
6. Wrap gown around your waist, making sure your back is completely covered. Tie string around your waist.
7. Done eye shield and/or mask, if indicated. Mask is required if there is a risk of splashing fluids.
8. Don clean gloves and pull gloves over gown wristlets.

For Removing Attire

1. Unite gown waist strings
2. Remove gloves and dispose of then in garbage bag.
3. Next, untie neck strings, bringing them around your shoulders, so that gown is partially off your shoulders.
4. Using your dominant hand and grasping clean part of wristlet, put sleeve wristlet over your non-dominant hand. Use your

non-dominant hand to up pull sleeve wristlet over your dominant hand.

5. Grasp outside of gown through sleeves at shoulders. Pull gown down over your arms.
6. Hold both gown shoulders in one hand, carefully draw your other hand out of gown, turning arm of gown inside out. Repeat this procedure with your other arm.
7. Hold gown away from your body. Fold gown up inside out.
8. Discard gown in appropriate place
9. Remove eye shield and/or mask and place in receptacle.
10. Wash your hands.

Using a Mask

Equipment

Clean mask

Procedure

1. Obtain mask from box
2. Position mask to cover your nose and mouth
3. Bend nose bar so that it conforms over bridges of your nose
4. If you are using a mask with string ties, tie top strings on top of your head to prevent slipping. If you are using a con-shaped mask, tie top strings over your ears.

5. Tie bottom strings around your neck to secure mask over your mouth. There should be no gaps between the mask and your face.
6. Important; change mask every 30 minutes or sooner if it becomes damp as effectiveness is greatly reduced after 30 minutes or if mask is moist.
7. Wash your hands before removing mask.
8. To remove mask, untie lower strings first, or slip elastic band off without touching mask.
9. Discard mask in a trash container
10. Wash your hands

Removing Items from Isolation Room

Equipment

- Large red isolation bags
- Specimen container
- Plastic bag with biohazard level
- Laundry bag
- Red plastic container in room
- Cleaning articles

Procedure

1. Place laboratory specimen in plastic bag. Afix biohazard label to plastic bag.
2. Dispose of all sharps in appropriate red plastic container in room.
3. Place all linen in linen bag
4. Place reusable equipment such as procedure trays in plastic bags.
5. Dispose of all garbage in plastic bags
6. Double bag all material from isolation room. Follow procedure for utilizing double-bagging for isolation.

   All materials removed from an isolation room is potentially contaminate. This will prevent spread of micro organisms.
7. Replace all bags, such as linen bag and garbage, in appropriate container in room.
8. Make client's room clean as necessary, using germicidal solution.
9. Leave the client's room today

Using Double-Bagging for Isolation

Equipment

2 isolation bags

Items to be removed from room

Gloves

Procedure

1. Follow dress protocol for entering isolation room, or, if you are already in the isolation room, continue with step 2.
2. Close isolation bag when it is one-half to three-fourths full. Close bag inside the isolation room.
3. Double-bag for safety if outside of bag is contaminated, if the bag could be easily penetrated, or if contaminated material in the bag is heavy and could break bag.
4. Set-up a new bag for continued use inside room. Bag is usually red with the word “Biohazard” written on outside of bag.
5. Place bag from inside room in to a bag held open by a second health care worker outside room if double bagging is required. Second health care worker makes a cuff with the top of the bag and places hands under cuff. This prevents hands from becoming contaminated.
6. Place bag in to second bag with out contaminating outside of bag. Secure top of bag by typing a knot in top of bag.

7. Take bag to designated area where biohazard material is collected; usually “dirty” utility room.
8. Remove gloves and wash hands

N.B. Out side of base is contaminated

Base could easily be penetrated

Contaminated material is heavy and could break bas.

Transporting Isolated Client outside the Room

Equipment

- Transport Vehicle
- Bath blanket
- Mask for client if needed

Procedure

1. Explain procedure to patient
2. If client is being transported from a respiratory isolation room, instruct him or her to wear a mask for the entire time out of isolation. This prevents the spread of airborne microbes.
3. Cover the transport vehicle with a bath blanket if there is a chance of soiling when transporting a client who has a draining wound or diarrhea.

4. Help client to transport vehicle. Cover client with a bath blanket.
5. Tell receiving department what type of isolation client needs and what type of precaution hospital personnel should follow.
6. Remove bath blanket, and handle as contaminated linen when client returns to room.
7. Instruct all hospital personnel to wash their hands before they leave the area.
8. Wipe down transportation vehicle with antimicrobial solution if soiled.

Protocol for Leaving Isolation Room

Untie gown at wrist

Take off gloves

Untie gown at neck

Pull gown off and place in laundry hamper

Take off goggles or face shield

Take off mask

Wash hands

Guide lines for Disposing of Contaminated Equipment

- Disposable gloves: place in isolation bag separate from burnable trash and direct to appropriate hospital area for disposal
- Glass equipment: Bag separately from metal equipment and return to CSR (Central Sterilization Room).
- Metal equipment: Bag all equipment together, label and return to CSR
- Rubber and plastic items: Bag items separately and return to CSR for gas sterilization.
- Dishes: Requires no special precautions unless contaminated with infected material; then bag, label and return to Kitchen.
- Plastic or paper dishes: Dispose of these items in burnable trash.
- Soiled linens: place in laundry bag, and send to separate area of laundry room from special care. If possible place linens hot-water-soluble bag. This method is safes for handling as bag may be placed directly into washing machine. (Double-bagging is usually required because these bags are easily punctured or torn. They also dissolve when wet.)
- Food and liquids: Dispose of these items by putting them in toilet – flush thoroughly.

- Needles and syringes: Do not recap needles; place in puncture proof (resistant) container.
- Sphygmomanometer and stethoscope: Require no special precaution unless they are contaminated. If contaminated, disinfect using the appropriate cleaning protocol based on the infective agent.

Thermometers: Dispose of electronic probes cover with burnable trash. If probe or machine is contaminated, clean with appropriate disinfectant or infective agent. If reasonable thermometers are used, disinfect with appropriate solution.

Study questions

- Describe infection prevention in health care setups
- List chain of infection
- Identify between medical asepsis and surgical asepsis
- Discuss the purpose, use and components of standard precautions.
- Maintain both medical and surgical asepsis
- Describe how to setup a client's room for isolation, including appropriate barrier techniques.
- Identify hoe to follow specific airborne, droplet and contact precautions.

CHAPTER THREE

CARE OF PATIENT UNIT

Learning Objective

At completion of this unit the learner will be able to:

- State the general instruction for nursing procedures.
- Define patient and patient unit.
- Take care of patient unit and equipment in health care facilities

General Instructions for all Nursing Procedures

1. Wash your hands before and after any procedure.
2. Explain procedure to patient before you start.
3. Close doors and windows before you start some procedures like bed bath and back care.
4. Do not expose the patient unnecessarily.
5. Whenever possible give privacy to all patients according to the procedure.
6. Assemble necessary equipment before starting the procedure.
7. After completion of a procedure, observe the patient reaction to the procedure, take care of all used equipment and return to their proper place.
8. Record the procedure at the end.

I. THE PATIENT UNIT

Definition:

Patient: A *Latin* word meaning to suffer or to bear.

- Is a person who is waiting for or undergoing medical/nursing treatment and care.

***Patient Care Unit*:** is the space where the patient is accommodated in hospital or patient home whereto receive care. There may also be closet space or drawer.

The patient unit in the hospital is of three types:

1. Private room – is a room in which only one patient be admitted
2. Semi private room – is a patient unit which can accommodate two patients
3. Ward- is a room, which can receive three or more patients. Consists of a hospital bed, bed side stand, over bed table, chair, overhead light, suction and oxygen, electrical outlets, sphygmomanometer, a nurse's call light, waste container and bed side table and others as needed and available.

In the home, the client unit is the primary area where the client receives care. It may be bedroom, or the main living area.

A. *Hospital Bed*

- Gatch bed: a manual bed which requires the use of hand racks or foot pedals to manipulate the bed into

desired positions i.e. to elevate the head or the foot of the bed

⇒ Most commonly found in Ethiopia hospitals

⇒ Are less expensive and free of safety hazard

⇒ Handles should be positioned under the bed when not in use

C. Side rails

- It should be attached to both sides of the bed
  - Full rails – run the length of the bed
  - Half rails _ run only half the length of the bed and commonly attached to the pediatrics bed.

D. *Bed Side Table/Cabinet*

- Is a small cabinet that generally consists of a drawer and a cupboard area with shelves
- Used to store the utensils needed for clients care. Includes the washbasin (bath basin, emesis (kidney) basin, bed pan and urinal
- Has a towel rack on either sides or along the back
- Is best for storing personal items that are desired near by or that will be used frequently

E.g. soap, shampoo, lotion etc

E. *Over Bed Table*

- The height is adjustable

- Can be positioned and consists of a rectangular, flat surface supported by a side bar attached to a wide base on wheels
- Along side or over the bed or over a chair
- Used for holding the tray during meals, or care items when completing personal hygiene

F. ***The Chair***

- Most basic care units have at least one chair located near the bedside
- For the use of the client, a visitor, or a care provider

G. ***Overhead Light (examination light)***

- Is usually placed at the head of the bed, attached to either the wall or the ceiling
- A movable lamp may also be used
- Useful for the client for reading or doing close work
- Important for the nurse during assessment

H. ***Suction and Oxygen Outlets***

- Suction is a vacuum created in a tube that is used to pull (evacuate) fluids from the body E.g. to clear respiratory mucus or fluids
- Oxygen is one of the gases frequently used for health care today. Oxygen is derived through a tube.

I. *Electrical Outlets*

- Almost always available in the wall at the head of the bed

J. *Sphygmomanometer*

- The blood pressure assessment tool, has two types:
  1. An aneroid
  2. Mercury, which is frequently used during nursing assessment.

K. Call Light

- Used for client's to maintain constant contact with care providers

II. Care of Patient Unit

- Nursing staffs are not responsible for actual cleaning of dust and other dirty materials from hospital. However, it is the staff nurses' duty to supervise the cleaner who perform this job.

A. General Rules for Cleaning

- Dry dusting of the room is not advisable.
- Dusting should be done by sweeping only.
- Use a damp duster for collecting dust.
- Dust with clear duster.

- Collect dust at one place to avoid flying from place to place.
- Dusting should be done without disturbing or removing the patients from bed.
- Dusting should be done from top to bottom i.e. from upward to downward direction.
- While dusting, take care not to spoil the beds or walls or other fixtures in the room or hospital ward.
- While dusting, wounds or dressing should not be opened by other staff.
- There should be a different time for dusting daily.

B. Care of Hospital and Health Care Unite Equipments

1. General Instructions for Care of Hospital Equipment

- Use articles only for the purpose for which they are intended.
- Keep articles clean and in good condition. Use the proper cleaning method.
- Protect mattresses with rubber sheets.
- Use protective pillowcases on pillows.
- Do not boil articles, especially rubber articles and instruments longer than the correct time.
- Do not sterilize rubber goods and glass articles together - wrap glass in gauze when sterilizing it by boiling.

- Protect table tops when using hot utensils or any solution that may leave stain or destroy the table top.
- Report promptly any damaged or missing equipment.

2. *Care of Equipment in General*

- Rinse used equipment in cold water. Sock materials in recommended antiseptic solutions. Remove any sticky material. Hot water coagulates the protein of organic material and tends to make it adhere.
- Wash well in hot soapy water. Use an abrasive, such as a stiff-bristled brush, to clean equipment.
- Rinse well under running water.
- Dry the article.
- Clean the gloves, brush and clean the sink.

3. *Care of Linen and Removal of Stains*

- Clean linen should be folded properly and be kept neatly in the linen cupboard.
- Dirty linen should be put in the dirty linen bag (hamper) and never be placed on the floor.
- Torn linen should be mended or sent to the sewing room.
- Linen with blood should be soaked in cold water to which a small amount of hydrogen peroxide is added if available.

- Linen stained with urine and feces is first rinsed in cold water and then washed with soap.
- Iodine stained linen- apply ammonia, rinse and then wash with cold water.
- Ink stained linen – first soak in cold water or milk for at least for 24 hrs then rub a paste of salt and lemon juice on the stain and allow the article to lie in the sun.
- Tea or coffee stains – wash in cold water and then pour boiling water on the stain.
- To remove vitamin B complex stains dissolve in water or sprit.
- Mucus stains – soak in salty water.
- Rust - soak in salt and lemon juice and then bleach in sun.

4. *Care of Pick Up Forceps and Jars*

Pickup forceps: is an instrument that allows one to pick up sterile equipment.

Sterile equipment: material, which is free of all forms of microorganism.

Pick up forceps should be kept inside the jar in which 2/3 of the jar should be filled with antiseptic solution

- Wash pick up forceps and jars and sterilize daily
- Fill jar with disinfectant solution daily such as detol or preferably carbolic solution

- Care should be taken not to contaminate tip of the forceps
- Always hold tip downward
- If tip of forceps is contaminated accidentally, it should be sterilized before placing it back in the jar to avoid contamination.

5. *Rubber Bags*

   Example: hot water bottles, ice bags should be drained and dried

   They should be inflated with air and closed to prevent the sides from sticking together

6. *Rubber Tubing*
   - Should be washed with warm, soapy water
   - The inside should be flushed and rinsed well

Study questions:

1. State some of the important general instructions for nursing procedures.
2. List items commonly found in patient unit.

UNIT THREE

BASIC CLIENT CARE

CHAPTER FOUR

ADMISSION, TRANSFER AND DISCHARGE OF PATIENTS

Learning Objectives:

At the end of this chapter students will be able to:

- Demonstrate how to orient a new client to the health care facility.
- Discuss concepts related to caring for the client's clothing and valuable items on admission.
- State some of the nursing consideration related to admission of a client.
- Demonstrate the ability to transfer a client from one unit to another safely and effectively.
- Identify nursing considerations related to a client's discharge from the health care facility.
- Explain teaching that should occur at the time of a client discharge.

A. Admission

Admission is a process of receiving a new patient to an individual unit (ward) of the hospital. (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 alleviate the patient's fear and worry about the hospitalization.
- To facilitate recovery of patient from his/her problems

Nurse's Responsibilities during Admission of a Patient to Hospital

1. Check for orders of admission.
2. Check about financial issue, payment scheme (free or paying)
3. Assess the patient's immediate need and take action to meet them. These needs can be physical (e.g. acute pain) or emotional distress, (upset)
4. Make introduction and orient the patient
    - Greet the patient
    - Introduce self to the patient and the family
    - Explain what will occur during the admission process (admission routines) such as admission bath, put on hospital gowns etc.

- Orient patient to individual unit: Bed, bathroom, call light, supplies and belonging; and how these items work for patient use.
- Orient patient to the entire unit: location of nurses office, lounge etc.
- Explain anything you expect a patient to do in detail. (This helps the patients participate in their care).
- Introduce other staff and roommates.

4. Perform baseline assessment

General assessment

a. Observation and physical examination such as:

- Vital signs; temperature pulse, respiration and blood pressure.
- Intake and output
- Measure the weight of the patient
- Height is measured (if required)

b. Interview patient and take nursing history to determine the patient conditions.

5. Take care of the patient's personal property

- Items that are not needed can be sent home with family members
- Other important items can be kept at bedside or should be put in safe place by cabling with patient's name.

6. Documentation

- Record all parts of the admission process
- Other recording include
  - ⇐ Notification to dietary departments
  - ⇐ Starting kardex card and medication records
  - ⇐ If there is specific form to the facility, complete it.

N.B. Additional measures can be carried out according to the patient problems (diagnoses).

B. Transfer of the patient to another unit

Transfer of the patient to another unit is done for several reasons.

Procedure

- ❖ Explain the transfer to the client and the family
- ❖ Assemble all the client's personal belongings, charts, x-films and lab reports. Double check for all other cloths and materials.
- ❖ Determine how the client is moved
- ❖ Provide for client safety. Take measures to accommodate IV bottles, drains and catheters. Protect the client from draft, and cover the client with a blanket for warmth and privacy.
- ❖ Collect all the client medications; IV bags tube feedings, and so forth. Check the cardex or medication administration record for accuracy.
- ❖ Review the client's health records and check for completeness.

- ❖ Record the transfer in a transfer note. Give the time, the unit to which the transfer occurs, types of transportation (wheelchair, stretcher), and the cleint's physical and psychological condition
- ❖ Make sure that the receiving unit is ready. Usually a short verbal report is given to the reciving department nurse.

C. Discharging a Patient

Indications for discharge

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

Nurse's Responsibility during Discharging a Patient

1. Check for orders that a patient need to be discharged
2. Plan for continuing care of the patient
   - Referral as necessary
   - Give information for a person involved in the patient care.
   - Contact family or significant others, if needed.
   - Facilitate transportation with responsible unit
3. Teaching the patient about
   - What to expect about disease outcome
   - Medications (Treatments)
   - Activity
   - Diet

- Need for continued health supervision, and others as needed

4. Do final assessment of physical and emotional status of the patient and the ability to continue own care.
5. Check and return all patients' personal property (bath items in patient unit and those kept in safe area).
6. Help the patient or family to deal with business office for customary financial matters and in obtaining supplies.
7. Keep records
   - o Write discharge note
   - o Keep special forms for facility

Discharge summaries usually include:

- Description of client's condition at discharge
- Treatment (e.g. Wound care, Current medication)
- Diet
- Activity level
- Restrictions

Referral is a condition in which a client/patient is sent to a higher health care system for better diagnostic and therapeutic actions.

- Any active health problems
- Current medication
- Current treatments that are to be continued
- Eating and sleeping habits

- Self-care abilities
- Support networks
- Life-style patterns
- Religious preferences

Discharging a patient against medical advice (AMA)

1. When the patient wants to leave an agency without the permission of the physician/nurse in charge – an authorized.
2. Ascertain why the person wants to leave the agency
3. Notify the physician/ nurse in charge of the client's decision
4. Offer the patient the appropriate form to complete
5. If the client refuses to sign the form, document the fact on the form and have another health professional witness this
6. Provide the patient with the original of the signed form and place a copy in the record
7. When the patient leaves the agency, notify the physician, nurse in charge, and agency administration as appropriate
8. Assist the patient to leave as if this were a usual discharge from the agency (the agency is still responsible while the patient is on premises)

Study Questions:

1. Mention concepts related to caring for clients belongings on admission.
2. State some of the nursing consideration related to admission of a client.
3. Exercise how to transfer a client from one unit to another safely and effectively.
4. Identify nursing considerations related to discharge of a client from health care facility
5. Explain teaching that should occur at time of a client discharge.

CHAPTER FIVE

VITAL SIGNS

Learning Objectives

At the end of the unit the learner will be able to:

- Describe the procedures used to assess the vital signs: temperature, pulse, respiration, and blood pressure.
- Identify factors that can influence each vital sign.
- Identify equipment routinely used to assess vital signs.
- Identify rationales for using different routes for assessing temperature.
- Identify the location of commonly assessed pulse sites.
- Take vital signs and interpret the finding.
- Document the vital signs.

II. Vital Signs (Cardinal Signs)

Vital signs reflect the body's physiologic status and provide information critical to evaluating homeostatic balance. The term "vital" is used because the information gathered is the clearest indicator of overall health status.

Vital sign Includes: T (temperature), PR (Pulse Rate), RR (Respiratory Rate), and BP (Blood Pressure)

Key Terminology

- apical pulse
- apex
- apnea
- axilla
- bradycardia
- bradypnea
- carotid pulse
- cheyne-stokes respiration
- cyanosis
- diastole
- dyspnea
- eupnea
- femoral pulse
- fever
- hypertension
- hypotension
- Korotokoff'
- tympanic
- oral
- orthopnea
- palpation
- pedal pulse
- popliteal pulse
- pulse
- pulse pressure
- radial pulse
- rectal
- sphygmomanometer
- stetoscope
- systolic
- tachycardia
- temperature
- thermometer

Acronyms

BP	PR	PO	^{o}c
RR	CVS	B	^{o}F
T	O	BPM	

Purposes:

- To obtain base line data about the patient condition
- To aid in diagnosing patient condition (diagnostic purpose)
- For therapeutic purpose so that to intervene accordingly

Equipment

- Vital sign tray
- Stethoscope
- Sphygmomanometer
- Thermometer (glasses, electronic and tympanic)
- Second hand watch
- Red and blue pen
- Pencil;
- Vital sign sheet
- Cotton swab in bowel
- Disposable gloves if available
- Dirty receiver kidney dish

Times to Assess Vital Signs

1. On admission – to obtain baseline date
2. When a client has a change in health status or reports symptoms such as chest pain or fainting
3. According to a nursing or medical order

4. Before and after the administration of certain medications that could affect RR or BP
   (Respiratory and CVS (Cardio Vascular System))
5. Before and after surgery or an invasive diagnostic procedures
6. Before and after any nursing intervention that could affect the vital signs. E.g. Ambulation
7. According to hospital /other health institution policy.

I Temperature –Body temperature is the measurement of heat inside a person's body (core temperature); it is the balance between heat produced and heat lost.

Normal body temperature using oral (O; or per os, PO) measurement remains as appropriately 37^0 celsius or 98.6 ^{0} F.

There are Two Kinds of Body Temperature

1. Core Temperature

- Is the Temperature of the deep tissues of the body, such as the cranium, thorax, abdominal cavity, and pelvic cavity
- Remains relatively constant
- Is the Temperature that we measure with thermometer

2. Surface Temperature:

- The temperature of the skin, the subcutaneous tissue and fat

Alterations in Body Temperature

Normal body temperature is 37^0 C or 98.6 ^{0}F (Average) the range is 36-38 ^{0}c (96.8 – 100 ^{0}F)

Pyrexia: a body temperature above the normal ranges 38 ^{0}c – 41^0 c (100.4 – 105.8 F)

Hyper pyrexia: a very high fever, such as 41^0 C > 42 ^{0}c leads to death.

A client who has fever is referred as febrile; the one who has not is afebrile.

Hypothermia: – body temperature between 34 ^{0}c – 35 ^{0}c, < 34 ^{0}c is death

Common Types of Fevers

1. **Intermittent fever:** the body temperature alternates at regular intervals between periods of fever and periods of normal or subnormal temperature.

2. **Remittent fever**: a wide range of temperature fluctuation (more than 2 ^{0}c) occurs over the 24 hr period, all of which are above normal

3. **Relapsing fever**: short febrile periods of a few days are interspersed with periods of 1 or 2 days of normal temperature.

4. **Constant fever:** the body temperature fluctuates minimally but always remains above normal

Factors Affecting Body Temperature

1. Age

- Children's temperature continue to be more labile than those of adults until puberty
- Elderly people, particularly those > 75 are at risk of hypothermia
- Normal body temperature of the newborn if taken orally is 37 ^{0}C.

2. Diurnal variations (circadian rhythms)
   - Body temperature varies through out the day
   - The point of highest body temperature is usually reached between 8:00 p.m. and midnight and lowest point is reached during sleep between 4:00 and 6:00 a.m.

3. Exercise
   - Hard or strenuous exercise can increase body temperature to as high as 38.3 – 40 c – measured rectally

4. Hormones
   - In women progesterone secretion at the time of ovulation raises body temperature by about 0.3 – 0.6^{o}c above basal temperature.

5. Stress

- Stimulation of skin can increases the production of epinephrine and nor epinephrine – which increases metabolic activity and heat production.

6. Environment
   - Extremes in temperature can affect a person's temperature regulatory systems.

Measuring Body Temperature

Sites to Measure Temperature

Most common are:

- Oral
- Rectal
- Axillary
- Tympanic

Thermometer: is an instrument used to measure body temperature

Types

1. Oral thermometer
   - Has long slender tips
2. Rectal thermometer
   - Short, rounded tips
3. Axillary
   - Long and slender tip
4. Tympanic

In other way it is also divided as mercury, digital and electronic types. In developed countries, mercury type thermometers are no more use in hospital setup but in our context still very important.

1. Rectal Temperature:

Readings are considered to be more accurate, most reliable, is > 0.65^0 c ($1\ ^0$F) higher than the oral temperature.

Procedure

- Explain the procedure to the patient
- Wash hands and assemble necessary equipment and bring to the patient bedside.
- Position the person laterally;
- Apply lubricant 2.5 cm above the bulb;
- Insert the thermometer 1.5 – 4 cm into the anus. For an infant 2.5cm, for a child 3.7 cm – for an adults 4 cm
- Measured for 2-3 minutes
- Remove the thermometer and read the finding
- Clean the thermometer with tissue paper
- A rectal thermometer record does not respond to changes in arterial temperature as quickly as an oral thermometer

Contraindications

- Rectal or perineal surgery;
- Fecal impaction – the depth of the thermometer insertion may be insufficient;

- Rectal infection;
- Neonates –can cause rectal perforation and ulceration;

2. Oral

Procedure

- Explain the procedure to the patient
- Wash hands and assemble necessary equipment and bring to the patient bedside.
- Position the person comfortably and request the patient to open the mouth;
- Hold the thermometer firmly with the thumb and fore finger; shake it with strong wrist movements until the mercury line falls to at least 35 ^{o}c.
- Place the bulb of the thermometer well under the client's tongue. Instruct the client to close the lips (not the teeth) around the bulb. Ensure that the bulb rests well under the tongue, where it will be in contact with blood vessels close to the surface.
- Remove the thermometer after 3 to 5 minutes, according to the agency guidelines.
- Remove the thermometer, wipe it using it once a firm twisting motion
- Hold the thermometer at eye level. Read to the nearest tenth

- Dispose the tissue. Wash the thermometer in lukewarm, soapy water. Dry and replace the thermometer in a container at bedside. Wash your hands.
- Record temperature on paper or flow sheet. Report an abnormal reading to the appropriate person.

Contraindication

- Child below 7 yrs
- If the patient is delirious, mentally ill
- Unconscious
- Uncooperative or in severe pain
- Surgery of the mouth
- Nasal obstruction
- If patient has nasal or gastric tubs in place

4. Axillary

Procedure

- Wash hands
- Make sure that the client's axilla is dry, If it is moist, pat it dry gently before inserting the thermometer.
- After placing the bulb of the thermometer in to the axilla, bring the client's arm down against the body as tightly as possible, with the forearm resting across chest.

- Hold the glass thermometer in place for 8 to 10 minutes. Hold the electronic thermometer in place until the reading registers directly
- Remove and read the thermometer. Dispose of the equipment properly. Wash hands
- Record the reading

N.B. The axillary method is safest and most noninvasive.

Tympanic Temperature

The tympanic temperature is placed snugly in to the client's outer ear canal. It records temperature in 1 to 2 seconds. Many pediatric and intensive care units use this type of thermometer because it records a temperature so rapidly.

Procedure

- Wash the hands
- Explain the procedure to the client to ensure cooperation and understanding
- Hold the probe in the dominant hand. Use the client's same ear as your hand (e.g. use the client's right ear when you use your right hand).
- Select the desired mode of temperature. Use the rectal equivalent for children under 3 years of age Wait for "ready" message to display.
- With your nondominant hand, grasp the adult's external ear at the midpoint. Pull the external ear up and back. For a

child of 6 years or younger, use your nondominant hand to pull the ear down and back.

- Slowly advance the probe in to the client's ear with a back and forth motion until it seals the ear canal.
- Point the probe's tip in an imaginary line from the client's sideburns to his or her opposite eyebrow.
- As soon as the instrument is in correct position, press the button to activate the thermometer.
- Keep the probe in place until the thermometer makes a sound or flashes a light.
- Read the temperature and discard the probe cover. Replace the thermometer and wash your hands.
- Record the temperature on the client's record.

II. Pulse

It is a wave of blood created by contraction of the left ventricle of the heart. i.e. the pulse reflects the heart beat or is the same as the rate of ventricular contractions of the heart – in a healthy person.

In some types of cardiovascular diseases heartbeat and pulse rate differs. E.G. Client's heart produces very weak or small pulses that are not detectable in a peripheral pulse far from the heart

Peripheral Pulse: is a pulse located in the periphery of the body e.g. in the foot, and or neck

***Apical Pulse (central pulse)*:** it is located at the apex of the heart

The PR is expressed in beats/ minute (BPM)

Pulse Deficit- It is a difference that exists between the apical and radial pulse

Factors Affecting Pulse Rates

1. ***Age:*** as age increase the PR gradually decreases. New born to 1 month – 130 BPM 80-180 (range) Adult 80 BPM (beat per minute) – 60 – 100 BPM (beat per minute)
2. ***Sex:*** after puberty the average males PR is slightly lower than female
3. ***Exercise:*** PR increase with exercise
4. ***Fever:*** increases PR in response to the lowered B/P that results from peripheral vasodilatation – increased metabolic rate
5. ***Medications:*** digitalis preparation decreases PR, Epinephrine – increases PR
6. ***Heat:*** increase PR as a compensatory mechanism
7. ***Stress:*** increases the sympathetic nerve stimulation – increases the rate and force of heart beat
8. ***Position changes****:* when a patient assumes a sitting or standing position blood usually pools in dependent vessels of the venous system. Pooling results in a transient decrease in the venous blood return to heart and subsequent decrease in BP increases heart rate.

Pulse Sites

Temporal: is superior (above) and lateral to (away from the midline of) the eye

1. **Carotid:** at the side of the neck below tube of the ear (where the carotid artery runs between the trachea and the sternoclidiomastoid muscle)
2. **Temporal:** the pulse is taken at temporal bone area.
3. **Apical:** at the apex of the heart: routinely used for infant and children < 3 yrs

In adults – Left midclavicular line under the 4th, 5th, 6th intercostals space

Children < 4 yrs of the Lt. mid clavicular line

4. **Brachial:** at the inner aspect of the biceps muscle of the arm or medially in the antecubital space (elbow crease)
5. **Radial:** on the thumb side of the inner aspect of the wrist – readily available and routinely used
6. **Femoral:** along the inguinal ligament. Used or infants and children
7. **Popiliteal:** behind the knee. By flexing the knee slightly
8. **Posterior tibial:** on the medial surface of the ankle
9. **Pedal (Dorslais Pedis):** palpated by feeling the dorsum (upper surface) of the foot on an imaginary line drawn from the middle of the ankle to the surface between the big and 2nd toes

Method

Pulse: is commonly assessed by palpation (feeling) or auscultation (hearing)

The middle 3 fingertips are used with moderate pressure for palpation of all pulses except apical; the most distal parts are more sensitive,

Assess the pulse for

- Rate
- Rhythm
- Volume
- Elasticity of the arterial wall

Assess the Pulse for

Fig.2 Measuring radial puulse

Pulse Rate

- Normal 60-100 b/min (80/min)
- Tachycardia – excessively fast heart rate (>100/min)
- Bradycardia < 60/min

Pulse Rhythm

- The pattern and interval between the beats, random, irregular beats – dysrythymia

Pulse Volume: the force of blood with each beat

- A normal pulse can be felt with moderate pressure of the fingers and can be obliterated with greater pressure.
- Full or bounding pulse forceful or full blood volume obliterated with difficulty
- Weak, feeble or thready readily obliterated with pressure from the finger tips

  Elasticity of arterial wall
- A healthy, normal artery feels, straight, smooth, soft and pliable, easily bent after breaking
- Reflects the status of the clients vascular system

  If the pulse is regular, measure (count) for 30 seconds and multiply by 2

  If it is irregular count for 1 full minute

Procedure for measuring radial pulse (the most common)

- ❖ Wash hands
- ❖ Explain the procedure to the client
- ❖ Position the client's fore arm comfortably with the wrist extended and the palm down
- ❖ Place the tips of your first, second, and third fingers over the client's radial artery on the inside of the wrist on the thumb side.

- ❖ Press gently against the client's radial artery to the point where pulsation can be felt distinctly
- ❖ Using a watch, count the pulse beats for 30 seconds and multiply by two to get the rate per minute
- ❖ Count the pulse for full minute if it is abnormal in any way or take an apical pulse
- ❖ Record the rate (BPM) on paper or the flow sheet. Report any irregular findings to appropriate person
- ❖ Wash your hands

III Respiration

Respiration is the act of breathing (includes intake of o_2 removal of co_2)

Ventilation is another word, which refer to the movement of air in and out of the lungs.

Hyperventilation: very deep, rapid respiration

Hypoventilation: very shallow respiration

Two Types of Breathing

1. Costal (thoracic)
   - Involves the external muscles and other accessory muscles (sternoclodio mastoid)
   - Observed by the movement of the chest up ward and down ward. Commonly used for adults

2. Diaphragmatic (abdominal)
   - Involves the contraction and relaxation of the diaphragm, observed by the movement of abdomen. Commonly used for children.

Assessment

- The client should be at rest
- Assessed by watching the movement of the chest or abdomen.
- Rate, rhythm, depth and special characteristics of respiration are assessed

A. ***Rate****:* is described in rate per minute (RPM)

Healthy adult RR = 15- 20/ min. is measured for full minute, if regular for 30 seconds. As the age decreases the respiratory rate increases.

1. Eupnea- normal breathing rate and depth
2. Bradypnea- slow respiration
3. Tachypnea - fast breathing
5. Apnea - temporary cessation of breathing

B. ***Rhythm****:* is the regularity of expiration and inspiration
Normal breathing is automatic & effortless.

C. ***Depth****:* described as normal, deep or shallow.
Deep: a large volume of air inhaled & exhaled, inflates most of the lungs.
Shallow: exchange of a small volume of air minimal use of lung tissue.

IV Blood Pressure: Blood pressure is the pressure exerted by blood against the wall of blood vessels. It includes arterial, venous and capillary pressures.

Arterial BP: it is a measure of a pressure exerted by the blood as it flows through the arteries. Arterial blood pressure (BP) = cardiac output (CO) x total peripheral resistance (TPR).

There are two types of blood pressure.

1. **Systolic pressure**: is the pressure of the blood as a result of contraction of the ventricle
   (is the pressure of the blood at the height of the blood wave);
2. **Diastolic blood pressure**: is the pressure when the ventricles are at rest.
3. **Pulse pressure**: is the difference between the systolic and diastolic pressure
   Blood pressure is measured in **mm Hg** and recorded as fraction. A number of conditions are reflected by changes in blood pressure.
   - An increase in blood pressure is called hypertension; a decrease is called hypotension.

Conditions Affecting Blood Pressure

Fever	Increase

Stress	"
Arteriosclerosis	"
Obesity	"
Hemorrhage	Decrease
Low hematocrit	"
External heat	"
Exposure to cold	Increase

Sites for Measuring Blood Pressure

1. Upper arm using brachial artery (commonest)
2. Thigh around popliteal artery
3. Fore -arm using radial artery
4. Leg using posterior tibial or dorsal pedis

Methods of Measuring Blood Pressure

Blood pressure can be assessed ***directly*** or ***indirectly***

1. Direct (invasive monitoring) measurement involves the insertion of catheter in to the brachial, radial, or femoral artery. The physician inserts the catheter and the nurse monitors the pressure reading. With use of correct placement, it is highly accurate.

1. Indirect (non invasive methods)
   A. The auscultatory
   B. The palpatory, and

The auscultatory method is the commonest method used in health activities.

When taking blood pressure using stethoscope, the nurse identifies five phases in series of sounds called Korotkoff's sound.

Phase 1: The pressure level at which the 1st joint clear tapping sound is heard, these sounds gradually become more intense. To ensure that they are not extraneous sounds, the nurse should identify at least two consecutive tapping sounds.

Phase 2: The period during deflation when the sound has a swishing quality

Phase 3: The period during which the sounds are crisper and more intense

Phase 4: The time when the sounds become muffled and have a soft blowing quality

Phase 5: The pressure level when the sounds disappear

Procedure

Assessing Blood pressure

Purpose

- To obtain base line measure of arterial blood pressure for subsequent evaluation
- To determine the clients homodynamic status
- To identify and monitor changes in blood pressure resulting from a disease process and medical therapy.

EQUEPMENT

- Stethoscope
- Blood pressure cuff of the appropriate size
- Sphygmomanometer

Procedure

1. Prepare and position the patient appropriately
   - Make sure that the client has not smoked or ingested caffeine, with in 30 minutes prior to measurement.
   - Position the patient in sitting position, unless otherwise specified. The arm should be slightly flexed with the palm of the hand facing up and the fore arm supported at heart level
   - Expose the upper arm

2. Wrap the deflated cuff evenly around the upper arm.
   - Apply the center of the bladder directly over the medial aspect of the arm. The bladder inside the cuff must be directly over the artery to be compressed if the reading to be accurate.
   - For adult, place the lower border of the cuff approximately 2 cm above antecubital space.

3. For initial examination, perform preliminary palipatory determination of systolic pressure

- Palpate the brachial artery with the finger tips
- Close the valve on the pump by turning the knob clockwise.
- Pump up the cuff until you no longer feel the brachial pulse
- Note the pressure on sphygmomanometer at which the pulse is no longer felt
- Release the pressure completely in the cuff, and wait 1 to 2 minutes before making further measurement

4. Position the stethoscope appropriately
   - Insert the ear attachments of the stethoscope in your ears so that they tilt slightly fore ward.
   - Place the diaphragm of the stethoscope over the brachial pulse; hold the diaphragm with the thumb and index finger.

5. Auscultate the client's blood pressure
   - Pump up the cuff until the sphygmomanometer registers about 30 mm Hg above the point where the brachial pulse disappeared.
   - Release the valve on the cuff carefully so that the pressure decreases at the rate 2-3 mmHg per second.
   - As the pressure falls, identify the manometer reading at each of the five phases
   - Deflate the cuff rapidly and completely

- Repeat the above step once or twice as necessary to confirm the accuracy of the reading.

6. Remove the cuff from the client's arm

7. For initial determination, repeat the procedure on the client's other arm, there should be a difference of no more than 5 to 10 mmHg between the arms. The arm found to have the higher pressure, should be used for subsequent examinations

8. Document and report pertinent assessment data, report any significant change in client's blood pressure to the nurse in charge. Also report these finding:
   A. Systolic blood pressure (of adult) above 140 mmHg.
   B. Diastolic blood pressure (of an adult) above 90 mmHg
   C. Systolic blood pressure of (an adult) below 100mmHg

Study questions

1. Explain vital sings and list what it includes.
2. Identify important times to assess vital signs.
3. Mention some of the factors affecting body temperature.
4. What does pulse deficit mean?
5. Define arterial blood pressure.
6. Explain the two methods of assessing blood pressure.

CHAPTER SIX

SPECIMEN COLLECTION

Learning Objectives:

At the end of this chapter, students will be able to:

- Identify at least three reasons for laboratory examination of urine.
- Demonstrate correct collection of the following urine specimens: midstream, 24-hours, fractional, and indwelling urine catheter.
- Explain at least one reason for collecting specimen like sputum, blood or stool.
- Demonstrate correct collection of a stool specimen.
- Demonstrate correct collection of a sputum specimen.

Key Terminology:

Hemoglobine
Hematocrite
Leukocyte
Occult
Stroke
Urinalysis

Specimen Collection

Specimen collection refers to collecting various specimens (samples), such as, stool, urine, blood and other body fluids or tissues, from the patient for diagnostic or therapeutic purposes.

Various types of specimen collected from the patient in the clinical settings, either in out patient departments (OPD) or in-patient units, for diagnostic and therapeutic purposes. These includes, stool, urine, blood and other body fluid or tissue specimens.

General Considerations for Specimen Collection

When collecting specimen, wear gloves to protect self from contact with body fluids.

1. Get request for specimen collection and identify the types of specimen being collected and the patient from which the specimen collected.
2. Give adequate explanation to the patient about the purpose, type of specimen being collected and the method used.

3. Assemble and organize all the necessary materials for the specimen collection.
4. Get the appropriate specimen container and it should be clearly labeled have tight cover to seal the content and placed in the plastic bag or racks, so that it protects the laboratory technician from contamination while handling it.
   - The patient's identification such as, name, age, card number, the ward and bed number (if in-patient).
   - The types of specimen and method used (if needed).
   - The time and date of the specimen collected.

6. Put the collected specimen into its container without contaminating outer parts of the container and its cover.

All the specimens should be sent promptly to the laboratory, so that the temperature and time changes do not alter the content.

A. Collecting Stool Specimen

Purpose

- For laboratory diagnosis, such as microscopic examination, culture and sensitivity tests.

Equipments required

- Clean bedpan or commode
- Wooden spatula or applicator
- Specimen container
- Tissue paper

- Laboratory requests
- Disposable glove, for patients confined in bed
- Bed protecting materials
- Screen

Procedure

i) For ambulatory patient

Give adequate instruction to the patient to

- Defecate in clean bedpan or commode (toilet)
- Avoid contaminating the specimen by urine, menstrual period or used tissue papers, because these may affect the laboratory analysis.
- Void before collecting the specimen
- Transfer the sample (specimen) to the container using spatula or applicator

ii) For patients confined in bed

1. Prepare the patient's unit
   - Provide privacy by drawing screen, closing windows and doors (To provide privacy)

2. Prepare the patient
   - Put on gloves
   - Position the patient
   - Place bed protecting materials under the patient's hips

- Assist the patient and place the bed pan under the patient's buttocks (follow the steps under "Giving and removing bedpan")
- Give patient privacy by leaving alone, but not far
- Instruct the patient about how to notify you when finished defecation.
- Remove the bedpan and keep on safe place by covering it
- Recomfort the patient

3. Obtain stool sample
   - Take the used bedpan to utility room/toilet container using spatula or applicator without contaminating the outside of the container.
   - The amount of stool specimen to be taken depends on the purpose, but usually takes.
     - 3.5 gm sample from formed stool
     - 15.30 ml sample from liquid stool
   - Visible mucus, pus or blood should be included into sample stool specimen taken.

4. Care of equipments and the specimen collected.
   - Handle and label the specimen correctly
   - Send the specimen to the laboratory immediately, unless there is an order for its handling. Because fresh specimen provides the most accurate results.

- Dispose the bedpan's content and give proper care of all equipments used.

5. Documentation and report

B. Collecting Urine Specimen

Types of urine specimen collection

1. Clean voided urine specimen
   (Also called clean catch or midstream urine specimen)
2. Sterile urine specimen
3. Timed urine specimen
   - It is two types
     Short period → 1-2 hours
     Long period → 24 hours

Purpose

- For diagnostic purposes
  - Routine laboratory analysis and culture and sensitivity tests

Equipments Required

- Disposable gloves
- Specimen container
- Laboratory requisition form (Completely filled)

- Water and soap or cotton balls and antiseptic solutions (swabs).

For patients confined

- Urine receptacles (i.e. bedpan or urinals)
- Bed protecting materials
- Screen (if required)

Procedure

i) <u>For ambulatory patients</u>

Give adequate instruction to the patient about

- The purpose and method of taking specimen
- Assist the patient to move to the toilet

ii) <u>For patient confined in bed</u>

1. Prepare the patient unit providing privacy
2. Prepare the patient

- Put on gloves
- Place bed protecting materials under patient's hips
- Assist the patient to position in bed and in positioning the receptacles
- Assist the patient or clean the vulva or penis thoroughly using soap and water or antiseptic swabs (Follow the steps of giving and receiving bed pan/urinal and cleaning the genitalia)

3. Obtain urine specimen

- Ask patient to void
- Let the initial part of the voiding passed into the receptacle (bed pan or urinal) then pass the next part (the midstream) into the specimen container.
- Hold the vulva or penis apart from the specimen container while the patient voids to decrease urine contamination.
- Don't allow the container to touch body parts
- Collect about 30-60 ml midstream urine
- Handle the outside parts of the container and put on the cover tightly on specimen container
- Clean the outside parts of the container with cotton if spillage occurs
- Remove the glove

4. Recomfort the patient
5. Care of the specimen and the equipment

- Handle and label the container correctly
- Send the urine specimen to the laboratory immediately together with the completed laboratory requested forms
- Empty the receptacles content properly
- Give appropriate care for the used equipments

6. Document pertinent data and report, such as

- Specimen collected, amount, time and date.
- Consistency of the urine
- Patients experience during voiding

Collecting a Sterile Urine Specimen

Sterile urine specimen collected using a catheter in aseptic techniques (The whole discussion for this procedure presented on the catheterization part)

Collecting a Timed Urine Specimen

Purpose

- For some tests of renal functions and urine compositions, such as:- measuring the level of or hormones, such as adrenocortico steroid hormone creatinine clearance or protein quantitation tests.

Equipments Required

- Urine specimen collecting materials (usually obtained from the laboratory and kept in the patient's bathroom.)
- Format for recording the time, date started and end, and the amount of urine collected on each patient's voiding during the specified period for collection.

Procedure

1. Patient preparation
    - Adequate explanation to the patient about the purpose of the test, when it begins and what to do with the urine
    - Place alert signs about the specimen collection at the patient's bedside or bathroom.

- Label the specimen container to include date and time of each voiding as well as patient's identification data
- Containers may be numbered sequentially (e.g. 1st, 2nd, 3rd etc) in case of 24-hours urine collection.

2. Collecting the urine
   - Usually it begin in the morning
   - Before you begin the timing, the patient should void and do not use this urine (It is the urine that has been in the bladder some time)
   - Then all urine voided during the specified time (e.g. the next 24 hours) is collected in the container
   - At the end of the time (e.g. 24 hours period) the patient should void the last specimen, which is added to the rest.
   - Ensure that urine is free of feces

C. Collecting sputum specimen

Sputum is the mucus secretion from the lungs, bronchi and trachea, but it is different from saliva. The best time for sputum specimen collection is in the mornings up on the patient's awaking (that have been accumulated during the night). If the patient fails to cough out, the nurse can obtain sputum specimen by aspirating pharyngeal secretion using suction.

Purpose

Sputum specimen usually collected for:

- Culture and sensitivity test (i.e. to identify the microorganisms and sensitive drugs for it)
- Cytological examination
- Acid fast bacillus (AFB) tests
- Assess the effectiveness of the therapy

Equipments Required

- Disposable gloves
- Specimen container
- Laboratory requisition form
- Mouth care (wash) tray

Procedure

1. Patient preparation
   - Before collecting sputum specimen, teach pt about the difference between sputum and saliva, how to cough deeply to raise sputum.
   - Position the patient, usually sitting up position and splinting may help. Also postural drainage can be used.
   - Give oral care, to avoid sputum contamination with microorganisms of the mouth. Avoid using tooth past because it alter the result.

2. Obtain sputum specimen

- Put on gloves, to avoid contact with sputum particularly it hemoptysis (blood in sputum) present.
- Ask pt to cough deeply to raise up sputum
- Take usually about 15-30 ml sputum
- Ask pt to spit out the sputum into the specimen container
- Make sure it doesn't contaminate the outer part of the container. If contaminated clean (wash) with disinfectant
- Cover the cape tightly on the container

3. Recomfort the patient
   - Give oral care following sputum collection (To remove any unpleasant taste)

4. Care of the specimen and the equipments used
   - Label the specimen container
   - Arrange or send the specimen promptly and immediately to laboratory.
   - Give proper care of equipments used

5. Document the amount, color, consistency of sputum, (thick, watery, tenacious) and presence of blood in the sputum.

D. Collecting Blood Specimen

The hospital laboratory technicians obtain most routine blood specimens. Venous blood is drown for most tests, but arterial blood is drawn for blood gas measurements. However, in some setting nurses draw venous blood.

Purpose

Specimen of venous blood are taken for complete blood count, which includes

- Hemoglobin and hemotocrit measurements
- Erythrocytes (RBC) count
- Leukocytes (WBC) count
- Differential counts

Equipment

- Sterile gloves
- Tourniquet
- Antiseptic swabs
- Dry cotton (gauze)
- Needle and syringe
- Specimen container with the required diluting or preservative agents, for example: anticoagulant.
- Identification/ labeling: name, age address, etc.
- Laboratory requisition forms

Procedure

1. Patient preparation

- Instruct the pt what to expect and for fasting (if required)
- Position the pt comfortably

2. Select and prepare the vein sites to be punctured
   - Put on gloves
   - Select the vein to be punctured. Usually the large superficial veins used such as, brachial and median cubital veins.
   - Place the veins in dependent positions
   - Apply tourniquet firmly 15-20 cm about the selected sites. It must be tight enough to obstruct vein blood flow, but not to occlude arterial blood flow.
   - If the vein is not sufficiently to dilate massage (stroke) the vein from the distal towards the site or encourage the pt to clench and unclench repeatedly.
   - Clean the punctured site using antiseptic swabs

3. Obtain specimen of the venous to blood
   - Adjust the syringe and needles
   - Clean/disinfect the area with alcohol swab, dry with sterile cotton swab
   - Puncture the vein sites
   - Release the tourniquet when you are sure in the vein
   - Withdraw the required amount of venous blood specimen

- Withdraw the needle and hold the sites with dry cotton (to apply pressure)
- Put the blood into the specimen container
- Made sure not to contaminate outer part of the container and not to distract the blood cells while putting it into the container

4. Recomfort the patient

5. Care of the specimen and the equipment
   - Label the container
   - Shake gently (if indicated to mix)
   - Send immediately to laboratory, accompanying the request
   - Give care of used equipments

6. Documentation and reporting

Observations and Recording of Signs and Symptoms of the Patient

1. Objective Symptoms (signs):
   - Are symptoms, which could be seen by the health personnel?

E.g. swelling, redness, rash, body discharges (defecation, diaphoresis, emesis,)

2. Subjective Symptoms:

- Are symptoms, which are felt by the patient

E.g. decrease of appetite, dizziness, deafness, burning sensation, nausea, etc

3. **Chart**

Definition: it is a written record of history, examination, tests, diagnosis, and prognosis response to therapy

Purpose of Patients Chart

a. For diagnosis or treatment of a patient while in the hospital (find after discharge) if patient returns for treatment in the future time
b. For maintaining accurate data on matters demanded by courts
c. For providing material for research
d. For serving an information in the education of health personnel (medical students, interns, nurses, dietitians, etc)
e. For securing needed vital statistics
f. For promoting public health

General Rules for Charting

- Spelling

  Make certain you spell correctly

- Accuracy

  Records must be correct in all ways, be honest
- Completeness

  No omission, avoid unnecessary words or statement
- Exactness

  Do not use a word you are not sure of
- Objective information

  Record what you see avoid saying (condition better)
- Legibility

  Print/write plainly and distinctively as possible
- Neatness

  No wrinkles, proper speaking of items

  Place all abbreviation, and at end of statement
- Composition / arrangement

  Chart carefully consult if in doubt avoid using of chemical formulas
- Sentences need to be complete and clear, avoid repetition
- Don't overwrite
- Don't leave empty spaces in between
- Time of charting

  Specific time and date
- Color of ink

  Black or blue (red for transfusion, days of surgery)

It should be recorded on the graphic sheet

All orders should be written and signed. Verbal or telephone orders should be taken only in emergency verbal orders should be written in the order sheet and signed on the next visit.

Orders of Assembling Patients Chart

a. History sheet
b. Personal and social data
c. Order sheet
d. Doctor's progress notes
e. Nurses notes
f. Vital sign sheet (graphics)
g. Intake and output recording sheet
h. Laboratory and other diagnostic reports

- Patients or relatives and friends of patients are not allowed to read the chart when necessary but can have access if allowed by patient.

4. Intake and out put

a. Intake: all fluids that is taken in to the body through the mouth, NG tube or parentrally
b. Output: all fluid that is excreted or put out of the body through the mouth. N/G tube, urethra, drainage tube or other route (GI-diarrhea, vomiting).

Purpose:

- To replace fluid losses

- To provide maintenance requirements
- To check for retention of body fluid

Fluid balance sheet

- 24 hrs the intake out put should be compared and the balance is recorded
  - Positive balance if intake >output

Negative balance if out put >intake

Study Questions

1. Explain at least three reasons for laboratory examination of urine.
2. Explain at least one reason for collecting specimens like sputum, blood or stool.
3. Mention purposes for sputum specimen collection.
4. Describe the process how to draw venous blood for laboratory investigation.
5. How can you obtain sterile urine specimen?
6. Differentiate between signs and symptoms.

CHAPTER SEVEN

BED MAKING

Learning Objectives

At the end of this unit, the learner able to:

- Describe different types of bed making.
  State the purposes of bed making in health care facilities.
- Develop understanding about general instruction of bed making
- Develop a skill to make different types of bed.
- Explain the purposes of side rails.
- List necessary equipment for bed making.
- Arrange bed-making equipment in order of their use.

Key terminology

Bed cradle	occupied bed	traction
Closed bed	open bed	unoccupied bed
Mitered corner	postoperative bed	

In most instances beds are made after the client receives certain care and when beds are unoccupied. Unoccupied bed can be both open and closed.

Closed bed: is a smooth, comfortable and clean bed, which is prepared for a new patient

- In closed bed: the top sheet, blanket and bed spread are drawn up to the top of the bed and under the pillows.

Open bed: is one which is made for an ambulatory patient are made in the same way but the top covers of an open bed are folded back to make it easier of a client to get in.

Occupied bed: is a bed prepared for a weak patient who is unable to get out of bed.

Purpose:

1. To provide comfort and to facilitate movement of the patient
2. To conserve patient's energy and maintain current health status

Anesthetic bed: is a bed prepared for a patient recovering from anesthesia

⇒ ***Purpose***: to facilitate easy transfer of the patient from stretcher to bed

Amputation bed*:* a regular bed with a bed cradle and sand bags

⇒ ***Purpose***: to leave the amputated part easy for observation

Fracture bed: a bed board under normal bed and cradle

⇒ ***Purpose:*** to provide a flat, unyielding surface to support a fracture part

Cardiac bed: is one prepared for a patient with heart problem

⇒ ***Purpose***: to ease difficulty in breathing

General Instructions

1. Put bed coverings in order of use
2. Wash hands thoroughly after handling a patient's bed linen
   Linens and equipment soiled which secretions and excretions harbor micro-organisms that can be transmitted directly or by hand's uniforms
3. Hold soiled linen away from uniform
4. Linen for one client is never (even momentarily) placed on another client's bed

5. Soiled linen is placed directly in a portable linen hamper or a pillow case before it is gathered for disposal
6. Soiled linen is never shaken in the air because shaking can disseminate secretions and excretions and the microorganisms they contain
7. When stripping and making a bed, conserve time and energy by stripping and making up one side as completely as possible before working on the other side
8. To avoid unnecessary trips to the linen supply area, gather all needed linen before starting to strip bed
9. Make a vertical or horizontal toe pleat in the sheet to provide additional room for the clients feet.

   Vertical - make a fold in the sheet 5-10 cm 1 to the foot

   Horizontal – make a fold in the sheet 5-10 cm across the bed near the foot
10. While tucking bedding under the mattress the palm of the hand should face down to protect your nails.

Order of Bed Covers

1. Mattress cover
2. Bottom sheet
3. Rubber sheet
4. Cotton (cloth) draw sheet
5. Top sheet
6. Blanket
7. Pillow case

8. Bed spread

Note

- *Pillow should not be used for babies*
- *The mattress should be turned as often as necessary to prevent sagging, which will cause discomfort to the patient.*

A. Closed Bed

- It is a smooth, comfortable, and clean bed that is prepared for a new patient

Essential Equipment:

- Two large sheets
- Rubber draw sheet
- Draw sheet
- Blankets
- Pillow cases
- Bed spread

Procedure:

- Wash hands and collect necessary materials
- Place the materials to be used on the chair. Turn mattress and arrange evenly on the bed
- Place bottom sheet with correct side up, center of sheet on center of bed and then at the head of the bed

- Tuck sheet under mattress at the head of bed and miter the corner
- Remain on one side of bed until you have completed making the bed on that side
- Tuck sheet on the sides and foot of bed, mitering the corners
- Tuck sheets smoothly under the mattress, there should be no wrinkles
- Place rubber draw at the center of the bed and tuck smoothly and tightly
- Place cotton draw sheet on top of rubber draw sheet and tuck. The rubber draw sheet should be covered completely
- Place top sheet with wrong side up, center fold of sheet on center of bed and wide hem at head of bed
- Tuck sheet of foot of bed, mitering the corner
- Place blankets with center of blanket on center of bed, tuck at the foot of beds and miter the corner
- Fold top sheet over blanket
- Place bed spread with right side up and tuck it
- Miter the corners at the foot of the bed
- Go to other side of bed and tuck in bottom sheet, draw sheet, mitering corners and smoothening out all wrinkles, put pillow case on pillow and place on bed
- See that bed is neat and smooth
- Leave bed in place and furniture in order
- Wash hands

B. Occupied Bed

Purpose: to provide comfort, cleanliness and facilitate position of the patients

Essential equipment:

- Two large sheets
- Draw sheet
- Pillow case
- Pajamas or gown, if necessary

Procedure:

- If a full bath is not given at this time, the patient's back should be washed and cared for
- Wash hands and collect equipment
- Explain procedure to the patient
- Carry all equipment to the bed and arrange in the order it is to be used
- Make sure the windows and doors are closed
- Make the bed flat, if possible
- Loosen all bedding from the mattress, beginning at head of the bed, and place dirty pillow cases on the chair for receiving dirty linen
- Have patient flex knees, or help patient do so. With one hand over the patient's shoulder and the shoulder hand over the patient's knees, turn the patient towards you

- Never turn a helpless patient away from you, as this may cause him/her to fall out bed
- When you have made the patient comfortable and secure as near to the edge of the bed as possible, to go the other side carrying your equipment with you
- Loosen the bedding on that side
- Fold, the bed spread half way down from the head
- Fold the bedding neatly up over patient
- Roll dirty bottom sheet close to patient
- Put on clean bottom sheet on used top sheet center, fold at center of bed, rolling the top half close to the patient, tucking top and bottom ends tightly and mitering the corner
- Put on rubber sheet and draw sheet if needed
- Turn patient towards you on to the clean sheets and make comfortable on the edge of bed
- Go to the opposite side of bed. Taking basin and wash cloths with you, give patient back care
- Remove dirty sheet gently and place in dirty pillow case, but not on the floor
- Remove dirty bottom sheet and unroll clean linen
- Tuck in tightly at ends and miter corners
- Turn patient and make position comfortable
- Back rub should be given before the patient is turned on his /her back
- Place clean sheet over top sheet and ask the patient to hold it if she/he is conscious

- Go to foot of bed and pull the dirty top sheet out
- Replace the blanket and bed spread
- Miter the corners
- Tuck in along sides for low beds
- Leave sides hanging on high beds
- Turn the top of the bed spread under the blanket
- Turn top sheet back over the blanket and bed spread
- Change pillowcase, lift patient's head to replace pillow. Loosen top bedding over patient's toes and chest
- Be sure the patient is comfortable
- Clean bedside table
- Remove dirty linen, leaving room in order

  Wash hands

Bed Making

Making a post operative bed

- The entire bed need clean linen.
- Make the bottom of bed as you normally would. The post operative the bottom of bed as you normally would. The post operative bed usually requires a draw sheet under the client's hips. Usually another draw sheet is placed under the client's heard.
- In some cases, top liners are simply tan-folded to the foot of the bed. In others, a full post operative bed is made.

To do this, put the top linens over the foundation, but do not tuck them in. Fold down the top as you would do in an occupied bed. Then fold the bottom of the linens up so that the fold is even with the bottom of the mattress. Do not tuck the linen in. Fanfold the top linens to the side so that they lay opposite from where you will place the client's stretcher. Alternatively, you may fanfold the linens to the foot of the bed. Leave a tab on top for easy grasping.

- Have two or more pillows available, but do not put them on the bed. Rational: A pillow may be contraindicated for a client, usually the physician or charge nurse will determine when it is safe for the client to have one.
- Be sure all furniture is out of the way.
- Be sure the call light is available, but keep it on the bed side stand until the client is in bed. The call light cord is kept out of the way, to facilitate the transfer of the client to bed.
- Know what surgical procedure your client has had before you determine what special equipment is needed. For the client's convenience and safety, make the following items available: tissue, an emesis basin, a blood pressure cuff and stethoscope, a "frequent vital signs" flow sheet an in take and output record, and an intravenous (IV) stand. Other items can be added according to the client specific requirements.
- Report to your charge nurse when you have completed the postoperative bed and assembled the necessary equipment.

N.B. Procedures for other beds like cardiac bed are similar except the following points.

- ❖ For cardiac patient the bed need extra materials such as over bed table and additional pillows
- ❖ Hard board is needed under the mattress for fracture bed.

Study questions

1. How many types of bed making do you know?
2. What is the function of bed the cradle?
3. Which types of bed are usually prepared for newly admitted patients?
4. What is the difference between open and closed bed?
5. Define occupied bed.

CHAPTER EIGHT

PERSONAL HYGIENE AND SKIN CARE

Learning Objectives:

At the end of this chapter the learners will be able to:

- State the purposes of giving mouth care
- Demonstrate the skill of assisting a client with oral care
- Demonstrate for cleansing and caring for dentures
- Demonstrate caring for client's fingernails, and toes nails, addressing reasons for attention of each other.
- List reasons for routine hair care
- Describe and demonstrate giving a backrub, hand and foot massage, and foot soak
- Demonstrate how to assist a client with cleansing bath.

Key terminology

Halitosis

Nits

Pediculosis

Perineal care

A. Mouth Care

Purpose

- To remove food particles from around and between the teeth
- To remove dental plaque to prevent dental caries
- To increase appetite
- To enhance the client's feelings of well-being
- To prevent sores and infections of the oral tissue
- To prevent bad odor or halitosis

Equipments

- Toothbrush (use the person's private item. If patient has none use of cotton tipped applicator and plain water)
- Tooth paste (use the person's private item. If patient has none of use cotton tipped applicator and plain water)
- Cup of water
- Emesis basin
- Towel
- Denture bowel (if required)
- Cotton tipped applicator, padded applicator
- Vaseline if necessary

Procedure

1. Prepare the pt:
    - Explain the procedure

- Assist the patient to a sitting position in bed (if the health condition permits). If not assist the patient to side lying with the head on pillows.
- Place the towel under the pt's chin.
- If pt confined in bed, place the basin under the pt's chin

2. Brush the teeth
   - Moisten the tooth with water and spread small amount of tooth paste on it
   - Brush the teeth following the appropriate technique. Brushing technique
   - Hold the brush against the teeth with the bristles at up degree angle.
   - Use a small vibrating circular motion with the bristle at the junction of the teeth and gums use the some action on the front and the back of the teeth.
   - Use back and forth motion over the biting surface of the teeth.
   - Brush the tongue last

1. Give pt water to rinse the mouth and let him/her to spit the water into the basin.
   - Assist patient in wiping the mouth
2. Recomfort the pt
   - Remove the basin
   - Remove the towel
   - Assist the patient in wiping the mouth

- Reposition the patient and adjust the bed to leave patient comfortably

3. Give proper care to the equipments
4. Document assessment of teeth, tongue, gums and oral mucosa. Report any abnormal findings.

Mouth Wash Solutions

1. Normal solution: a solution of common salt with water in proportion of 4 gm/500 cc of water
2. Hydrogen peroxide – 5-20 cc (in water)
3. KMNO4 – in crystal form

   4cc or KMNO4 solution in a glass of water (1:700) or one small crystal in a glass of water
4. Soda-bicarbonate solution: 4 gm. of soda in pint of water
5. Thymal solution: ¼ - ½ TSF of thymal in one cup of water (100-150 cc of water)
6. Lemon juice: 2TSF lemon juice in a cup of water - an improvised method for mouth wash
7. Hexedine

Flossing

It removes resides particles between the teeth

Technique

1. Wrap one end of the floss around the 3rd finger of each hand

2. To floss the upper teeth. Use the thumb and index finger to stretch the floss. Move the floss up and down between the teeth from the tops of the crowns to the gum
3. To floss the lower teeth, use your index fingers to stretch the floss

Note: *If the patient has denture, remove them before starting and wash them with brush*

Mouth care for unconscious patient

- Position
  - Side lying with the head of the bed lowered, the saliva automatically runs out by gravity rather than being aspirated by the lungs or if patient's head can not be lowered, turn it to one side: the fluid will readily run out of the mouth, where it can be suctioned
  - Rinse the patient's mouth by drawing about 10 ml of water or mouth wash in to the syringe and injecting it gently in to each side of the mouth
  - If injected with force, some of it may flow down the clients throat and be aspirated into the lung
  - All the rinse solution should return; if not suction the fluid to prevent aspiration

Giving and Receiving Bedpans and Urinals

- Bedpan is a material used to receive urine and feces in females and feces in male

- Urinal -is used to receive urine
  - Are of two types male and female

Types of Bedpan

1. The high back, or regular pan (standard pan)
2. A fracture, the slipper or low back pan

Advantage

⇒ Has a thinner rim than as standard bed pan

⇒ Is designed to be easily placed under a person's buttocks

Disadvantage

⇒ Easier to spill the contents of the fracture pan

⇒ Are useful for people who are

a. Paralyzed or who cannot be turned safely (e.g. Spinal injury)
b. Confined in a body or long leg cost
c. Immobilized by some types of fracture
d. Very thin or emaciated

3. The pediatric bedpan
   - Are small sized
   - Usually made of a plastic

B. Bath (Bathing and Skin Care)

It is a bath or wash given to a patient in the bed who is unable to care for himself/herself.

1. **Cleansing bath:** Is given chiefly for cleansing or hygiene purposes and includes:
   - Complete bed bath: the nurse washes the entire body of a dependent patient in bed
   - Self-help bed bath: clients confined to bed are able to bath themselves with help from the nurse for washing the back and perhaps the face
   - Partial bath (abbreviated bath): only the parts of the client's body that might cause discomfort or odor, if neglected are washed the face, hands, axilla, perineum and back (the nurse can assist by washing the back) omitted are the arms, chest, and abdomen.
   - Tub bath: preferred to bed baths because it is easier to wash and rinse in a tub. Also used for therapeutic baths
   - Shower: many ambulatory clients are able to use shower
   - The water should feel comfortably warm for the client
   - People vary in their sensitivity to heat generally it should be 43-46 ^{o}c (110-115^{o}f)
   - The water for a bed bath should be changed at least once

Before bathing a patient, determine

a. The type of bath the client needs

b. What assistance the client needs

c. Other care the client is receiving – to prevent undue fatigue

d. The bed linen required

Note: *when bathing a client with infection, the caregiver should wear gloves in the presence of body fluids or open lesion.*

Principles

- Close doors and windows: air current increases loss of heat from the body by convection
- Provide privacy – hygiene is a personal matter & the patient will be more comfortable
- The client will be more comfortable after voiding and voiding before cleansing the perineum is advisable
- Place the bed in the high position: avoids undue strain on the nurses back
- Assist the client to move near you – facilitates access which avoids undue reaching and straining
- Make a bath mitt with the washcloth. It retains water and heat better than a cloth loosely held
- Clean the eye from the inner canthus to the outer using separate corners of the wash cloth – prevents transmitting micro organisms, prevents secretions from entering the nasolacrmal duct
- Firm strokes from distal to proximal parts of the extremities increases venous blood return

Purpose:

- To remove transient moist, body secretions and excretions, and dead skin cell
- To stimulate circulation
- To produce a sense of well being
- To promote relaxation, comfort and cleanliness
- To prevent or eliminate unpleasant body odors
- To give an opportunity for the nurse to assess ill clients
- To prevent pressure sores

Two categories of baths given to clients

- Cleansing
- Therapeutic

A. **Bed Bath**

Equipment

- Trolley
- Bed protecting materials such as rubber sheet and towels
- Bath blanket (or use top linen)
- Two bath towels
- Wash cloth
- Clean pajamas or gown
- Additional bed linens
- Hamper for soiled cloths

- Basin with warm water (43-46^{0}c for adult and 38-40^{0}c for children)
- Soap on a soap dish
- Hygienic supplies, such as, lotion, powder or deodorants (if required)
- Screen
- Disposable gloves
- Lotion thermometer (if available)

Procedures

1. Prepare the patient unit
   - Close windows and doors, use screen to provide privacy.

2. Prepare the patient and the bed
   - Place the bed in high position to reduce undue strain on the nurse's back
   - Remove pt's gown and pajamas
   - Assist pt to move toward you so it facilitates access to reach pt without undue straining. Position the pt in supine, semi -Fowler's or Fowler's depending on the pt's condition.

Check the temperature of the water using lotion thermometer /back of the hand.

3. Make a bath with the washcloth, so it retains water and heat than a cloth loosely held

4. Washing body parts

- Expose only the parts of the patient's body being washed avoid unnecessary exposing.
- Wash, rinse and dry each body parts thoroughly using washing towels and paying particular attention to skin folds.
- Suggested order for washing body parts; Face, ear, neck
  - ⇒ Arms and hands further away from the nurse
  - ⇒ Chest
  - ⇒ Arms and hands nearest to the nurse
  - ⇒ Buttocks and genital area
  - ⇒ Change the water after it gets dirty
  - ⇒ If possible assist patient to wash own face, hands, feet and genital area by placing the basin on bed.

Assist the patient with grooming

- Apply powder lotion or deodorants (of pt uses)
- Help patient to care for hair, mouth and nails.

5. Recomfort the patient

- Change linen if soiled
- Arrange the bed
- Put pt in comfortable position
- Remove the screen

i. Give proper care of materials used for bathing

- Document and report pertinent data
- Observation of the skin condition
- General appearance or reaction of the pt
- Type of bath give

Report any abnormal findings to the nurse in charge

B. Therapeutic Baths

- Are usually ordered by a physician/ nurse in charge.
- Are given for physical effects, such as sooth irritated skin or to treat an area (perineum)
- Medications may be placed in the water
- Is generally taken in a tub 1/3 or ½ full, about 114 liters (930'gal)
- The client remains in the bath for a desired time, often 20-30 min
- If the clients back, chest and arms are to be treated, immerse in the solution
- The bath temperature is generally included in the order, 37.7-46^{o}c (100-115 ^{o}F) for adults and 40-50 ^{o}c (105 ^{o}F) for infants

Bath Solutions

1. Saline: 4 ml (1Tsp) NaCl to 500 ml (1 pt) water

- Has a cooling effect
- Cleans

- Decrease skin irritation

2. Sodium: 4 ml (1Tsp) NCHCO3 to 500 ml (1 pt) water, bicarbonate or 120-360 ml 120 liters
- Has a cooling effect
- Relieves skin irritation

3. Potassium permanganate ($Kmno_4$): available in tablets, which are crushed, dissolved in a little water, and added to the bath
- Cleans and disinfects
- Treats infected skin areas
4. Oatmeal (Aveeino) and cornstarch can also be used

Tub Bath

Typically, bathtubs are low in height to ease the process of getting in and out of the tub. Guide rails are essential. Be sure to assist the client as necessary.

Equipment

- Bath blanket
- Bath mat
- Bath towel
- Soap
- Clean gown or pajama

- Clean bed linen
- Bath thermometer if available
- Disinfectant for cleansing the tub

Procedure

- ❖ Check the bath room temperature, which should be warmer than the normal room temperature.
- ❖ Make sure that the tub is clean. Scour it carefully with disinfectant. Unless using long handled swab, wear the glove when cleansing the tub.
- ❖ Rinse the tub well
- ❖ Place a chair near the tub, with a bath blanket opened over it.
- ❖ Place towel, wash cloth, and soap where the client reach them easily
- ❖ Fill the tub about halfway (less for children)
- ❖ Check the water with bath thermometer, if available or with the sensitive part of the skin. Water temperature should be warm to very warm, but never over 40.6 ^{o}C.
- ❖ Place a bath mat in the front of the tub
- ❖ Bring the client to the bathroom. Help the person to remove closing and, if necessary, to get in to tub. Show the client how to use the handrails.
- ❖ Explain to the client how to use the bath room call signals
- ❖ Check frequently, if the client need assistance

- ❖ Don't leave a child or a client who is unsure, unsteady, self injurious alone.
- ❖ When the client has finished bathing, help the client out of tub and to dry. After dressing assist the client back to the room
- ❖ Inform the cleaner to carefully clean the tub after the bath
- ❖ Dispose of the glove and wash your hands
- ❖ Document the procedure, describing any unusual client reactions

Back Care (massage): includes the area from the back and shoulder to the lower buttocks

Purpose

- To relieve muscle tension
- To promote physical and mental relaxation
- To improve muscle and skin functioning
- To relieve insomnia
- To relax patient
- To provide a relieve from pain
- To prevent pressure sores (decubitus)
- To enhance circulation

Equipment

Basin of warm water

Washcloth

Towel

Soap

Skin care lotion

Procedure

1. Prepare the pt and pt's unit
    - Provide privacy by using screen or closing windows and doors.
    - Assist pt to move close to your working side
    - Position patient prone (lie on abdomen) if possible. If not because of the pt's condition, use side lying position with the pt facing away from you.
    - Expose the back of the pt.
    - Spread towel close to pt's back to protect foundation of the bed.
    - Wash the back with warm water and soap using wash towel, rinse and dry it (if it is not given with bath)

2. Massaging the back
    - Pour small amount of lotion (oil) on your palm and rub your palms together to warm the lotion (oil) before massaging.
    - Massage the back using appropriate technique

Technique for Backbub (massage)

- Rub towards the neck line using long, firm, smooth strokes

- Pause at the neckline, using your fingers to massage the side of the neck.
- With a kneading motion, rub out along the shoulders continue the kneading motion and move down on each side of the trunk with both hands until you are again at the sacral area.
- Then, placing your hands side by side with the palms down, rub in figure of 8 patterns over the buttock and sacral area.
- Massaging back using appropriate techniques (Light pressure to smooth, heavy pressure to stumulate).
- Next, again using the kneading motion, move up the sides (about the vertebra) through the intrascapular space towards the shoulder.
- Ask the pt if there is any area that he/she would especially like to be rubbed.
- Complete the back rub using long, firm strokes up and sown the back. (shoulder to sacrum and back to shoulder).

3. Recomfort the pt.
   - Mop extra oil/lotion from the pt's back using towel.
   - Apply powder / alcohol to dry further moisture from the back, if the skin is moist in its nature
   - Dress up the pt's pajama and replace the top cover.
   - Reposition the pt.

- Leave the pt comfortably

4. Give proper care of equipments

5. Document the procedure, your observations and pt's reactions
   - Report any abnormal observations on the skin of the back (such as signs of pressure sore) to the nurse and physician in charge of the pt.

Three Types of Massage Strokes

1. Effleurage: stroking the body
2. Light, circular friction and straight, dup, firm, strokes
3. Petrissape: kneading and making large quick pinches of the skin, tissue, and muscle
   - Clean the back first
   - Warm the massage lotion or oil before use by pouring over your hands: cold lotion may startle the client and increase discomfort

     1. Effleurage the entire back: has a relaxing sedative effect if slow movement and light pressure are used

     2. Petrissape first up the vertebral column and them over the entire back: is stimulating if done quickly with firm p

- Assess: signs of relaxation and /or decreased pain (relaxed breathing, decreased muscles tension, drowsiness, and peaceful affect)
  - ⇒ Verbalizations of freedom from pain and tension
  - ⇒ Areas or redness, broken skin, bruises, or other sings of skin breakdown

Note

- *The duration of a massage ranges from 5-20 minutes*
- *Remember the location of bony prominence to avoid direct pressure over this areas*
- *Frequent positioning is preferable to back massage as massaging the back could possibly lead to subcutaneous tissue degeneration.*

NB. Backrub requires special skills as it might cause subcutaneous tissue degeneration; mainly in elderly.

C. Offering and Removing Bed Pan

- If the individual is weak or helpless, two peoples are needed to place and remove bed pans
- If a person needs the bed pan for a longer time periodically remove and replace the pan to ease pressure and prevent tissue damage
- Metal bed pans should be warmed before use by:
  - o Running warm water inside the rim of the pan or over the pan
  - o Covering with cloth

- Semi-Fowler's position relieves strain on the client's back and permits a more normal position for elimination

  Improper placement of the bedpan can cause skin abrasion to the sacral area and spillage

  - Place a regular bed pan under the buttocks with the narrow end towards the foot of the bed and the buttocks resting on the smooth, rounded rim
  - Place a slipper (fracture) pan with the flat, low end under the client's buttocks
  - Covering the bed pan after use reduces offensive odors and the clients embarrassment

If the client is unable to achieve regular defecation help by attending to:

1. The provision of privacy
2. Timing – do not ignore the urge to defecate
   - A patient should be encouraged to defecate when the urge to defecate is recognized
   - The patient and the nurse can discuss when mass peristalsis normally occurs and provide time for defecation (the same time each day)
3. Nutrition and fluids

For a constipated client: increase daily fluid intake, drink hot liquids and fruit juices etc

For the client with diarrhea – encourage oral intake of foods and fluids

For the client who has flatulence: limit carbonated beverages; avoid gas-forming foods

4. Exercise
    - Regular exercise helps clients develop a regular defecation pattern and normal feces
5. Positioning
    - Sitting position is preferred

Measures to assist the person to void include:

- Running water in the sink so that the client can hear it
- Warming the bed pan before use
- Pouring warm water over the perineum slowly
- Having the person assume a comfortable position by raising the head of the bed (men often prefer to stand)
- Providing sufficient analgesia for pain
- Having the person blow through a straw into a glass of water – relaxes the urinary sphincter

Perineal Care (Perineal – Genital Care)

Perineal Area:

- Is located between the thighs and extends from the symphysis pubis of the pelvic bone (anterior) to the anus (posterior).
- Contains sensitive anatomic structures related to sexuality, elimination and reproduction

D. Perineal Care (Hygiene)

- Is cleaning of the external genitalia and surrounding area
- Always done in conjunction with general bathing

Patients in special needs of perineal care

- Post partum and surgical patients (surgery of the perineal area)
- Non surgical patients who unable to care for themselves
- Patients with catheter (particularly indwelling catheter)

***Other indications for perineal care are*:**

1. Genito- urinary inflammation
2. Incontinence of urine and feces
3. Excessive secretions or concentrated urine, causing skin irritation or excoriation

Purpose

- To remove normal perineal secretions and odors
- To prevent infection (e.g. when an indwelling catheter is in place)
- To promote the patient's comfort
- To facilitate wound healing process

Equipments

- Bath towel
- Cotton balls and gauze squares
- Pitcher with worm water or/and prescribed solution in container
- Gloves
- Bed pan
- Bed protecting materials
- Perineal pad or dressing (if needed)

Procedure

1. Patient preparation
   - Give adequate explanation
   - Provide privacy
   - Fold the top bedding and pajamas (given to expose perineal area and drape using the top linen.)
   - Position pt lying on back with knees flexed and spread apart.
   - Place bed protecting materials under the pt's hip
   - Place the bedpan under pt's buttock.

2. Cleaning the genital area
   - Put on gloves

For Female

- Remove dressing or pad used
- Inspect the perineal area for inflammation excoriation, swelling or any discharge.

a. In case of post partum or surgical patient

- Clean by cotton swabs, first the labia majora then the skin folds between the majora and minora by retracting the majora using gauze squares, clean from anterior to posterior direction using separate swab for each stroke. (This directions lessens the possibility of urinary tract contamination)

b. In case of non-surgical patients

- Wash or clean the genital area with soapy water using the different quarters of the washcloth in the same manner.

Female Perineum

- Is made up of the vulva (external genitalia), including the mons pubis, prepuce, clitoris, urethral and vaginal orifices, and labia majora and minora
- The skin of the vaginal orifice is normally moist
- The secretion has a slight odor due to the cells and normal vaginal florae
- The clitoris consists of erectile tissues and many nerves fibers. It is very sensitive to touch.

Care

- Convenient for a woman to be on a bed pan to clean and rinse the vulva and perineum
- Secretion collects on the inner surface of the labia
- Use on hand to gently retract the labia
- Use a separate section of wash cloth for each wipe in a downward motion (from urethra to back perineum)
- Then clean the rectal area

Note

- *Following genital or rectal surgery, sterile supplies may be required for cleaning the operative site, E.g. Sterile cotton balls*
- *The operative site and perineal area may be washed with an antiseptic solution – apply by squirting them on the perineum from a squeeze bottle*

Male Perineum

- The penis contains pathways for urination and ejaculation through the urethral orifice (meatus)
- At the end of the penis is the glans covered by a skin flap (fore skin or prepuce)
- The urethral orifice is located in the center of the penis and opens at the tip

- The shaft of the penis consists of erectile tissue bound by the foreskin's dense fibrous tissue

Care

- Hold the shaft of the penis firmly with one hand and the wash cloth with the other – to prevent erection – embarrassment
- Use a circular motion, cleaning from the center to the periphery
- Use a separate section of the wash cloth

Position

- Lying in bed with knee flexed to clean the perineal part and side lying cleaning the perineal area

N.B The urethral orifice is the cleanest area and the anal orifice is the dirtiest area – always stroke from front to back to wash from 'clean' to 'dirty' parts

Note: *Entry of organisms into the urethral orifice can cause UTI*

Hair Care

Hair care usually done after the bath and as daily hygienic activities in a daily base. Hair care includes combing (brushing of hair), washing/shampooing of hair and pediculosis treatment.

Combing/Brushing of Hair

A patient hair should be combed and brushed daily most patients do this themselves if the required materials provided and others may need nurse's help (assistance)

Purpose

- Stimulates the blood circulation to the scalp
- Distribute hair oils evenly and provide a healthy sheem
- Increase the patient's sense of well-being.

Equipments

- Comb (which is large with open and long toothed)
- Hand mirror
- Towel
- Lubricant/oils (if required)

Procedure

1. Prepare the patient
   - Position the patient in either sitting or semi-fowler's or flat, if the pt is weak to seat or unconscious.
   - Place the towel over the patient's shoulder, if in sitting position or over the pillow if pt is in semi-fowler or lying position.
   - Remove any pins and ribbons

2. Comb the hair by dividing the hair

- Hold a section of hair 2-3 inches from the end and comb the end until it is free from tangles. Move towards the scalp by combing in the same manner to remove tangles.
- Continue fluffing the hair outward and upward until all the hairs combed.
- Arrange the hair as neatly and simply as possible according to the patient's preference of style.

3. Recomfort the pt
   - Remove the towel
   - Put patient in comfortable position

4. Care of equipment
5. Documentation

E. Shampooing/Washing the Hair of Patient Confined to Bed

Purpose

- Stimulate blood circulation to the scalp through massaging
- Clean the patients hair so it increase a sense of well-being to the pt
- To treat hair disorders like dandruft

Equipments

- Comb and brush
- Shampoo/soap in a dish

- Shampoo basin
- Plastic sheet
- Two wash towels
- Cotton balls
- Water in basin and pitcher
- Receptacle (bucket) to receive the used water
- Lubricants/oil as required

Procedure

1. Prepare the patient
   - Assist patient to move to the working side of the bed
   - Remove any hair accessories (e.g. pins, ribbons etc)
   - Brush and comb the hair to remove tangles

2. Arrange the equipments
   - Place the plastic sheet under patient's head and shoulder
   - Remove the pillows from under the pt's head and place it under pt's shoulder (to hyper extend the neck)
   - Tuck the towel under the pt's shoulder and neck
   - Place (arrange) the shampoo basin under the pt's head with one end extending to the receptacle for used water.
   - If there is no shampoo basin, use the plastic sheet, which is under pt's shoulder and head, make a funnel type fold and extend it to the receptacle.

- Place the receptacle on chair/table on the working side of the bed.

3. Protect the patient's eyes and ears
   - Place damp washcloths over the pt's eyes to protect from soapy water.
   - Place cotton balls in the patient's ears to prevent water collecting in the ear canals.

4. Shampooing/washing the hair
   - Wet the hair thoroughly with water
   - Apply shampoo (soap) to the scalp.
   - Massage all over the scalp symmetrically using your fingertips
   - Rinse the hair with plane water to remove the shampoo/soap
   - Remove damp washcloth from pt eyes and cotton balls from ears.

5. Dry the patient's hair
   - Squeeze the hair with your hands to remove as much water as possible
   - Rub pt's hair with towel
   - Use hair drier (if available)

6. Ensure pt's comfort
    - Remove plastic sheet shampoo basin
    - Assist pt for comfortable position
    - Assist pt in grooming
7. Care of equipment
8. Documentation and reporting

Pediculosis Treatment

Definition

Pediculosis: infestation with lice

Purpose

- To prevent transmission of some arthropod born diseases
- To make patient comfortable

Equipment

Lindane

1% permethrine cream rinse

Clean linen

Fine-tooth “nit” comb

Disinfectant for comb

Clean gloves

Towel

Lice:

- Are small, grayish white, parasitic insects that infest mammals
- Are of three common kinds:

- Pediculose capitis: is found on the scalp and tends to stay hidden in the hairs
- Pediculose pubis: stay in pubic hair
- Pediculose corporis: tends to cling to clothing, suck blood from the person and lay their eggs the clothing suspect their presence in the cloth and the body:
  a. The person habitually scratches
  b. There are scratches on the skin, and
  c. There are hemorrhagic spots in the skin where the lice have sucked blood

Head and body lice lay their eggs on the hairs then eggs look like oval particles, similar to dandruff, clinging to the hair.

Treatment of Pediculosis

Pediculosis Capitus

1. DDT (Dichloro Diphenyl Trichloro Ethane) one part to nine parts of talcum powder
   - Can destroy the lice in about 2 hrs
   - The effect lasts for 6 days if not washed
   - Does not destroy nit or eggs
   - Also available in liquid forms
2. Kerosene Oil mixed with equal parts of sweet oil
   - Destroys both adult lice and eggs of nits
   - From aesthetic point of view, kerosene causes foul smell and create discomfort to patient and the attendant

Guidelines for Applying Pediculicides

Hair:

- Apply pediculicide shampoo to dry hair until hair is thoroughly saturated and work shampoo in to a lather
- Allow product to remain on hair for stated period (varies with products)
- Pin hair and allow to dry
- Use a fine toothed comb to remove death lice and nits (comb should not be shared by other family members)
- Repeat it in 8-10 days to remove any hatched nits
- Apply pediculious lotion (or cream) to affected areas
- Bath after 12 hrs and put on clean clothes

7. Oil of Sassafras
   - Is a kind of scented bark oil
   - Only destroy lice not nits
   - For complete elimination, the oil should be massaged again after 10 days when the nits hatch
   - Is used daily for a week with equal parts of Luke warm H_2O then it should be repeated after a week

8. Gammaxine (Gamma Bengenhexa Chloride)
   - Emphasize the need for treatment of sexual partner
   - After complete bathing wash linen available as a cream, lotion, and a shampoo

- 1.5% solution of Gammaxine effective to kill the adult lice in one application
- Does not kill nits
- Should be repeated to kill the newly hatched nits, for complete elimination
- The lotion is applied over scalp after a clean soapy wash of hair
- After 12-24 hrs the scalp is washed with soap to remove the lotion
- Avoid contact with lice
- Can also be used for pubic and body lice

F. Feeding a Helpless Patient

During illness, trauma or wound healing, the body needs more nutrients than usual. However, many peoples, because of weakness, immobility and/or one or both upper extremities are unable to feed themselves all or parts of the meal. Therefore, the nurse must be knowledgeable, sensitive and skillful in carrying out feeding procedures.

Purpose

- To be sure the pt receives adequate nutrition
- To promote the pt well-beings

Procedure

1. Prepare pt units

- Remove all unsightly equipments; remove solid linens and arranging bedside tables.
- Control unpleasant odors in the room by refreshing the room. Odor free environment makes eating more pleasant and aids digestion.

2. Prepare the patients
   - Offers bedpan and urinals. To comfort pt and avoid interruption by elimination needs.
   - Assist pt to wash hands, face and oral care
   - Position patient comfortably
     ⇒ Mid or high Fowler's position
   - Protect the bed using suitable protective cover
3. Prepare the food tray
   - Identify the types of diet ordered.
   - Assess any special conditions in which the pt delayed or omitted (e.g. Lab, radiologic examination or surgery)
   - Assess any cultural or religious limitations, specific likes or dislikes.
   - Obtain any special utensils that you planned to use

4. Feed the patient
   - Place the food tray in such a way that the patient can see the food.
   - Position yourself at pt's eye level, if at all possible

⇒ Digestion is better when pt is not emotionally upset.

- Never hurry a pt's eating. This can make pt uncomfortable and fearful of taking up your time.
- Allow pt to determine when enough has been eaten, as way of providing choices.

5. Comfort patient
   - Assist hand washing and oral care
   - Offer bedpan and commodes, of indicated
   - Comfort patient, provide quite environment so that the pt may relax after meal, which also promote good digestion.
6. Care of equipment
7. Document feeding and any assessment

G. Morning, Afternoon, and Evening Care

- Morning, afternoon, and evening care are used to describe the type of hygienic care given at different times of the day

Early Morning Care

- Is provided to clients as they awaken in the morning
- In a hospital it is provided by nurses on the night shift
- Helps clients ready themselves for breakfast or for early diagnostic tests

Consists of:

- Providing a urinal or bed pan if client is confined to bed
- Washing the face and hands and
- Giving oral care

Late Morning Care

- Is provided after clients have breakfast

Includes:

- The provision of a urinal or bed pan
- A bath or shower
- Perineal care
- Back massage and
- Oral, nail and hair care
- Making clients bed

Afternoon Care

- When clients return from physiotherapy or diagnostic tests
- Includes:
  - Providing bed pan or urinal
  - Washing the hands and face
  - Assisting with oral care refresh clients

Evening Care

- Is provided to clients before they retire for the night

- Involves:
  - Providing for elimination needs
  - Washing hands
  - Giving oral care
  - Back massage care as required

Study questions:

1. Explain the purpose of bed bath, mouth care, and perineal care.
2. Describe therapeutic bath.
3. State the three types of massage strokes used in back care.
4. Which position is appropriate to give perineal care in both sexes?

CHAPTER NINE

COLD AND HEAT APPLICATION

Learning Objectives:

At the end of this chapter the learners will be able to:

- State purpose of applying heat to the body; of applying cold to the body.
- Explain specific precaution when applying heat, or cold
- Demonstrate the administration of leg soak and sitiz bath

Key Terminology

Hypothermia blanket

Sitiz bath

Tepid sponge bath

Care of Patient with Fever

This includes sponging of the skin with alcohol or cool water for reducing temperature

Solution: Tepid (luck – warm) water

Alcohol

- Part of alcohol to 3 parts of Luke warm H2O remove patient's gown
- Take the patient temperature, sponge the body using the wash cloth alternately, sponge each part 2-3 min. changing the was cloth
- Heat loss is by conduction or vaporization
- Check pulse frequently and report any change

Local Application of Heat and Cold

Heat and cold are applied to the body for local and systemic effects

Heat Application

Purpose

1. To relieve pain and muscles spasm – by relaxing muscles
   - Increase blood flow to the area

2. To relieve swelling (facilitate wound healing)
   - To relieve inflammation and congestion

Heat

- Increases the action of phagocytic cells that ingest moisture and other foreign material
- Increases the removal of waste products or infection metabolic process

3. To relieve chilling and give comfort

Heat can be applied in both dry and moist forms

Dry Heat :- is applied locally, for heat conduction

- By means of a hot water bottle

Moist heat – can be provided, through conduction

- By compression or sitz bath

Cold Application

Purpose

- To relieve pain: cold decrease prostaglandin's, which intensify the sensitivity of pain receptors, and other substances at the site of injury by inhibiting the inflammatory processes
- To reduce swelling and inflammation: by decreasing the blood flow to the area (vasoconstriction effect)
- Reduce raised body temperature due to fever

  Cold can be applied in moist (cold compress 18-27 c) and dry form (ice pack (bag) <15 oc)

  Systemic effects of cold – extensive cold application can increase blood pressure

  Systemic effects of Hot – produce a drop in blood pressure – excessive peripheral vasodilatation

Tepid Sponging

Definition: sponging of the skin with alcohol or cool water.

Purpose: to lower body temperature (fever)

Tepid (Lukewarm) water + alcohol

3 parts water: 1 part alcohol

The temperature of the water is 32 c (below body temperature) 27-37 – alcohol evaporates at a low temperature and therefore removes body heat rapidly

- Less frequently used – because alcohol causes skin drying
- Heat loss is by conduction and vaporization
- Determine the patients' temperature, PR and RR frequently every (Q) 15 min
- Sponge each area (part) for 2-3 min changing the wash cloth
- The sponge bath should take about 30 minutes
- Reassess v/s at the end
- Discontinue the bath if the clients becomes pale or cyanotic or shivers, or if the PR becomes rapid or irregular

Temperature of hot water bottle (bag) 52 $^{o}_{c}$ for normal adults,40.5 – 46 ^{o}c– for debilitated (unconscious patients).

40.5-46 ^{o}c for children < 2 yrs;

Fill the bag about 2/3 full;

Expel the remaining air and secure the top;

Maximum effect occurs in 20-30 min;

The application is repeated Q2 – 3 hrs to relieve swelling compress – a moist gauze or cloth immersed in (hot or cold) water and applied over an area.

Local Application of Cold and Heat

Application of Cold

- Has systemic and local effect
- Can be applied to the body in two ways
  1. Moist
  2. Dry

Purpose: (Indication)

- To reduce body to during high fever and hyper pyrexia or sun stroke
- To relieve local pain
- To reduce subcutaneous bleeding e.g. in sprain and contusion
- To control bleeding e.g. epistaxis
- To relieve headache
- To provide comfort to a patient in extreme hot weather if desired

1. <u>Moist Cold</u>

- Cold compress
- A cloth (padded gauze) is immersed in cold water and applied in area where we get large superficial vessels E.g. axilla and groin
- Change the cloth when it becomes warm
- Applied for 15-20 min

2. Dry Cold (Ice Bag)

- Ice kept in a bag
- Covered with cloth and applied on an area
- Temperature $<15^0$ C

Application of Heat

Purpose

- To relieve stasis of blood
- To increase absorption of inflammatory products
- To relieve stiffness of muscle and muscle pain
- To relieve pain and swelling of a localized inflammation boil or carbuncle – sometimes increases edema, increases capillary permeability
- To increase blood circulation
- To promote suppuration
- To relieve distention and congestion
- To provide warmth to the body

Methods

1. Dry Heat

- Using hot water bottle (bags)
- After contact of the body with moisture of water vapors temperature >46 ^oC
- 52 ^oC for normal adults

- 40.5 – 46°C for debilitated or unconscious patient's and child < 2 yrs
- 2/3 of the bag should be filled with water
- Expel the remaining air and secure the top
- Dry the bag and hold it upside down to test for leakage
- Wrap it in a towel or cover and place it on the body part
- Maximum effect occurs in 20-30 min
- Remove after 30-45 minutes

2. Moist Heat

1. Hot compress: a wash cloth immersed in hot water of temperature 40-46°c and change the site of washcloth frequently

   Complication

   - Paralysis
   - Numbness
   - Loss of sensation – fear of burn

2. Sitz bath

Sitz Bath (hit bath)

It is used to sock the client's pelvic area

- A clients sits in a special tub or a bowel
- The area from the mid things to the iliac crests or umbilicus - increases circulation to the perineum (when the legs are also immersed blood circulation to the perineum or pelvic area decrease)

- Temperature of water – 40-43 ^{o}c (105-110 ^{o} F) – unless the patient is unable to tolerate the temperature

Purpose:

- To relieve pain in post operative rectal condition
- Smoothen irritated skin (perineum)
- Facilitates wound healing (after episiotomy)
- To release the bladder in case of urinary retention

If it is going to be given in the tub – fill ½ the tube with water and add the ordered medication

In a bowel – fill 2/3 of it with water – add the ordered medication and dilute

The medication to Rx the perineum in KMNO4 sol. 250 mg KMNO4 in 500 ml of water

The duration of the bath is generally 15-20 minutes (20-25) depending on the client's health.

Help the client to dry.

NB. Great care has to be taken to prevent heat/cold burns when applying heat or cold especially to elderly.

Study questions:

1. Mention the two purposes of the heat application.
2. Describe the mechanism of action of heat application to effect its purposes.
3. What is tepid sponge?
4. What is the common medicine used in sitiz bath?
5. What is the average duration of time the patient is soaked in sitiz bath?

CHAPTER TEN

BODY MECHANICS AND MOBILITY

Learning Objectives:

At the end of this chapter the learner will be able to:

- State the principle underlying proper body mechanics and relate a nursing consideration.
- State the purposes of range of motion exercise.
- Identify principles related to safe movement of clients in and out of bed.
- Demonstrate the ability to move a partially mobile client safely from bed to chair and back.
- Demonstrate the ability to teach each of the crutch walking gaits to a client.
- Mention different positions used for various examination and treatment.

Key Terminology

Body alignment
Dorsal lithotomy
Prone

Base of support	Foot drop
Protective device	
Body mechanics	Fowler's position
Recumbent	
Center of gravity	Gait
Rotation	
Contracture	Gaitbelt
Transfer belt	
Centrolateral	Line of gravity
Sim's position	
Dangling	Paralysis
Supnation	

Acronyms

AROM

PROM

ROM

***Body Mechanics*:** is the effort; coordinated, and safe use of the body to produce motion and maintain balance during activity.

Proper Body Mechanics

Use of safest and most efficient methods of moving and lifting is called body mechanics. This means applying mechanical principles of movements to the human body.

Basic Principles of Body Mechanics

The laws of physics govern all movements. From these laws we derive the general principles of body mechanics.

Basic Principles

1. It is easier to pull, push, or roll an object than to lift it. The movement should be smooth and continuous, rather than jerky.
2. Often less energy or force is required to keep an object moving than it is to start and stop it.
3. It takes less effort to lift an object if the nurse works as close to it as possible. Use the strong leg and arm muscles as much as possible. Use back muscles, which are not as strong, as little as possible. Avoid reaching.
4. The nurse rocks backward or forward on the feet and with his or her body as a force for pulling or pushing.

   Principles under lying proper body mechanics involve three major factors: center of gravity, base of support, and line of gravity.

Center of Gravity

The person's center of gravity located in the pelvic area. This means that approximately half the body weight is distributed above this

area, half below it, when thinking of the body divided horizontally. In addition, half the body weight is to each side, when thinking the body divided vertically. When lifting an object, bend at knees and hips, and keep the back straight. By doing so, the center of gravity remains over the feet, giving extra stability. It is thus easier to maintain balance.

Base of Support

A person's feet provide the base of support. The wider the base of support, the more stable the object with in limits. The feet are spread side wise when lifting, to give side-to side stability. One foot is placed slightly in front of the other for back-to-front stability. The weight is distributed evenly between both feet. The knees are flexed slightly to absorb jolts. The feet are moved to turn the object being moved.

Line of Gravity

Draw an imaginary vertical (up and down) line through the top of the head, the center of gravity, and the base of support. This becomes the line of gravity, or the gravity plane. This is the direction of gravitational pull (from the top of the head to the feet). For highest efficiency, this line should be straight from the top of the head to the base of support, with equal weight on each side. Therefore, if a person stands with the back straight and the head erect, the line of gravity will be approximately through the center of the body, and proper body mechanics will be in place.

Body Alignment

When lifting, walking, or per forming any activity, proper body alignment is essential to maintain balance. When a person's body is in correct alignment, all the muscles work together for the safest and most efficient movement, without muscle strain. Stretching the body as tall as possible produces proper alignment. This can be accomplished through proper posture. When standing, the weight is slightly forward and is supported on the out side part of the feet. Again the head is erect, the back is straight, and the abdomen is in (remember that the client in bed should be in approximately the same position as if he/she were standing).

Positioning the client

Encouraging clients to move in bed, get out of bed, or walk serves several positive purposes. Prolonged immobility can cause a number of disorders, among which are pressure ulcer, constipation, and muscle weakness, pneumonia and joint deformities. By assisting clients to maintain or regain mobility, you promote self-care practices and help to prevent deformities.

Moving and Positioning Clients

Moving and positioning promote comfort, restore body function, prevent deformities, relieving pressure, prevent muscle strain, and stimulate proper respiration and circulation.

Purpose:

- To increase muscle strength and social mobility
- To prevent some potential problems of immobility
- To stimulate circulation

- To increase the patient sense of independence and self-esteem
- To assist a patient who is unable to move by himself
- To prevent fatigue and injury
- To maintain good body alignment

Practice Guideline

- Maintain functional client body alignment. (Alignment is similar whether client is standing or in bed.)
- Maintain client safety.
- Reassure the client to promote comfort and cooperation.
- Properly handle the client's body to prevent pain or injury.
- Follow proper body mechanics.
- Obtain assistance, if needed, to move heavy or immobile clients.
- Follow specific physician orders.
- Do not use special devices (e.g. splints, traction unless ordered)

Turning the Patient to a Side-lying Position

Supplies and Equipment

- Pillows
- Side rails
- Cotton blanket or towels, rolled for support

Procedure/Steps

1. Wash your hands

2. Explain the procedure to the client
3. Adjust the bed to a comfortable height
4. Lower the client's head to as flat a position as he or she can tolerate, and lower the side rail.
5. Move the client to the far side of the bed. Raise the side rail.
6. Ask the client to reach for the side rail
7. Assume a broad stance, tensing your abdominal and gluteal muscles. Roll the client toward you.
8. Position the client's legs comfortably.
   (a) Flex his or her lower knee and hip slightly.
   (b) Bring his or her upper leg for ward and place a pillow between legs.
9. Adjust the client's arms
   (a) Shift his or her lower shoulder to ward you slightly
   (b) Support his or her upper arm on a pillow
10. Wedge a pillow behind the client's back. Use rolled blankets or towels as needed for support.
11. Lower the bed, elevate the head of the bed as the client can tolerate, and raise the side rail.
12. Wash your hands.

Joint Mobility and Range of Motion

Every body joint has a specific but limited opening and closing motion that is called its range of motion (ROM). The limit of the joint's range is between the points of resistance at which the joint will neither open nor close any further. Generally all people have a similar ROM for their major joints.

Passive Range of Motion

If a client is unable to move, the nurse helps by performing passive range of motion (PROM) exercise.

Performing Passive ROM Exercises /Steps

1. Wash hands
2. Explain the procedure to the client
3. Adjust the bed to a comfortable height. Select one side of the bed to begin PROM exercises.
4. Uncover only the limb to be exercised.
5. Support all joints during exercise activity.
6. Use slow, gentle movements when performing exercises. Repeat each exercise three times. Stop if the client complains of pain or discomfort.
7. Begin exercise with the client's neck and work down ward.
8. Flex, extend and rotate the client's neck. Support his or her head with your hands.
9. Exercise the client's shoulder and elbow

a. Support the client's elbow with one hand and grasp the client's wrist with your other hand.
b. Raise the client's arm from the side to above the head.
c. Perform internal rotation by moving the client's arm across his or her chest.
d. Externally rotate the client's shoulder by moving the arm away from the client.
e. Flex and extend the client's elbow.

10. Perform all exercises on the client's wrist and fingers
    a. Flex and extend the wrist.
    b. Abduct and adduct the wrist.
    c. Rotate and pronate the wrist.
    d. Flex and extend the client's fingers.
    e. Abduct and aduct the fingers.
    f. Rotate the thumb.
11. Exercise the client's hip and leg.
    a. Flex and extend the hip and knee while supporting the leg.
    b. Abduct and adduct the hip by moving the client's straightened leg toward you and then back to median position.
    c. Perform internal and external rotation of the hip joint by turning the leg inward and then outward.
12. Perform exercises on ankle and foot
    a. Dorsiflex and plantar flex the foot

b. Abduct and adduct the toes

c. Evert and invert the foot

13. Move to the other side of the bed and repeat exercise.

14. Position and cover the client. Return the bed to low position.

15. Wash your hands.

16. Document completion of PROM exercise.

Controlling Postural Hypotension

- Sleep with the head of the bed elevated (8-12 inches). This makes the person's position change on rising less severe.
- Avoid sudden changes of position. Arise from bed in three steps:
  - ⇒ Sit on the side of the bed with legs dangling for 1 minute
  - ⇒ Stand with core holding on to the edge or the bed or another non mobile object for 1 minute
  - ⇒ Sit up in the bed for one minute

Gradual change in position stimulates renin, kidney enzyme that has a role in regulating BP and which prevents a dramatic drop in BP

- Balance is maintained with minimal effort when the base of support is enlarged in the direction in which the movement will occur

- Contracting muscles before moving an object lessens the energy required to move it
- The synchronized use of as many large muscles groups as possible during an activity increases overall strength and prevents muscle fatigue and injury
- The closer the line of gravity to the center of the base of support, the greater the stability
- The greater the friction against the surface beneath an object the greater the force required moving the object. (Pulling creates less friction than pushing)
- The heavier the object, the greater the force needed to move the object
- Moving an object along a level surface required less energy than moving an object up an inclined surface or lifting it against gravity
- Continuous muscle exertion can result in muscle stretch and injury

Body Positioning

Positioning client in various positions is done for diagnostic and therapeutic purposes. Some of the reasons include promoting comfort, restoring body function, preventing deformities, relieving pressure, preventing muscle strain, restoring proper respiration and circulation and giving nursing treatment.

Guideline for Positioning the Client

Positioning the Client for Comfort

- Maintain functional client body alignment. (Alignment is similar whether the client is standing or in bed.)
- Maintain client safety.
- Reassure the client to promote comfort and cooperation.
- Properly handle the client's body to prevent pain or injury.
- Follow proper body mechanics.
- Obtain assistance, if needed to move heavy or immobile clients.
- Follow specific orders.
- Do not use special devices (e.g. Splints, traction) unless ordered client positioning for examination and treatment.

Client Positioning for Examination and Treatment

1. Horizontal Recumbent Position

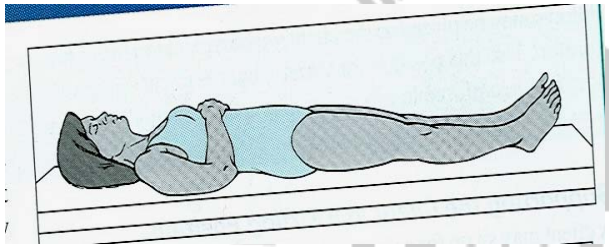


Figure 3 Horizontal Recumbent position

This position is required for most of the physical examinations. The client lies on the back with the legs extended. The arms are placed, folded on the chest, or along side the body. One small pillow may be used. Cover the client with bath blanket for privacy.
Caution: This position may be uncomfortable for a person with a back problem

Figure 4 Dorsal recumbent position

2. Dorsal recumbent position -used for variety of examinations and procedures. The client lies on the back, with the knees flexed and the soles of the feet flat on the bed. Cover the client with a sheet or a bath blanket folded once across the chest. The second sheet should be cross wise over the client thighs and legs. Wrap the lower ends of this sheet around the client's legs and feet. Fold the sheet so the genital area is easily exposed. Keep the client covered as much as possible

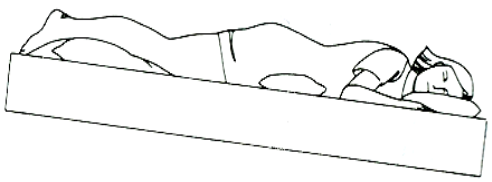


Figure 5 Prone position

3. Prone Position: - is used to examine the spine and back. The client lies on the abdomen with head turned to the side for comfort. The arms are held above the head or along side the body. Cover the client with a bath blanket for privacy. Caution: Unconscious clients, pregnant women, clients with abdominal incisions, and clients with breathing difficulties cannot lie in this position.

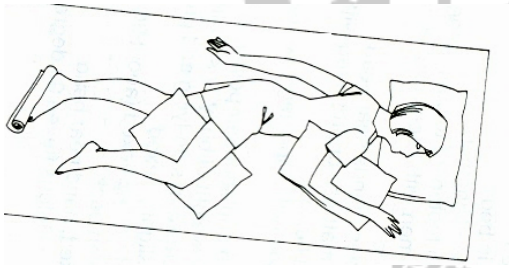


Figure 6 Sim's position

4. Sims' Position: - This position is used for rectal examination. The client rests on the left side, usually with a small pillow under the head. The right knee is flexed against the abdomen, the left knee is flexed slightly, the left arm is behind the body, and the right arm is in a comfortable position. Cover the client with a bath blanket. Caution: The client with leg injuries or arthritis often cannot assume this position

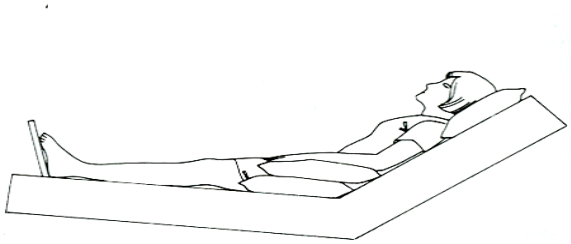


Figure 7 Fowler's position

5. Fowler's Position: - this position is used to promote drainage or to make breathing easier. Adjust the head rest to the desired height, and raise the bed section (Gatch bed) under the client's knees. Place a rolled pillow between the client's feet and use the foot of the bed as a brace, if desired. Caution: Observe for signs of dizziness or faintness when you raise the head of the bed.

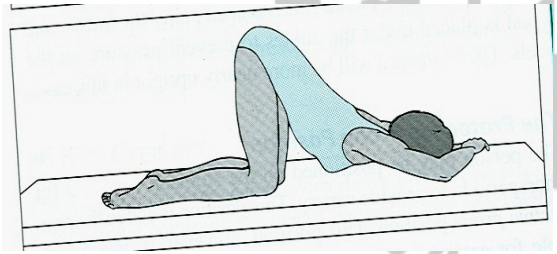


Figure 8 Knee –Chest position

6. Knee-chest Position: - is used for rectal and vaginal examinations and as treatment to bring the uterus into normal position. The client is on the knees with the chest resting on the bed and the elbow rested on the bed, or with the arms above the head, the client's head is turned to the side. The thighs are straight up and down, and the lower legs are flat on the bed. Caution: The client may become dizzy or faint and fall. Do not leave the client alone.

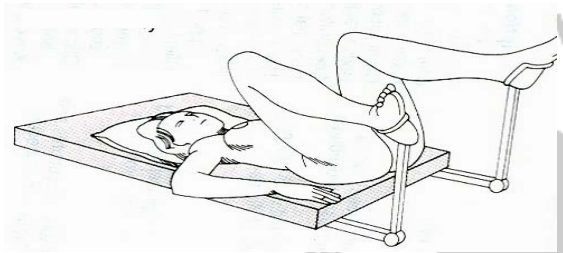


Figure 9 Lithotomy position

7. Dorsal Lithotomy Position: - is used for examination of pelvic organs. It is similar to dorsal recumbent position, except that the client's legs are well separated and the knees are a cutely flexed. The nurse will usually place the client's feet in stirrups. Keep the client covered as much as possible for privacy.

Crutch Walking

Crutches: - are walking aids made of wood or metal in the form of a shaft. They reach from the ground to the client's axillae.

Application of Nursing Process

Assessment

- Assess physical ability to use crutches and strength of the client's arm back, and leg muscle.
- Observe client's ability to balance self.
- Note any unilateral or unusual weakness or dizziness.
- Assess which gait is appropriate for client.
- Assess client's understanding of crutch-waking technique.

Planning/Objective

- To improve client's ability to ambulate when he/she has lower extremity injury.
- To increase muscle strength, especially in arms and legs.
- To increase feeling of well-being when client can ambulate.
- To promote joint mobility.

Implementation/Procedure

- Teaching muscle- strengthening exercises
- Measuring client for crutches

- Teaching crutch walking: Four-point gait, Three-point gait, two-point gait.
- Teaching Swing-To-Gait and Swing-Through Gait
- Teaching upstairs and downstairs ambulation with crutches.

Evaluation/Expected Outcomes

- Client's ability to ambulate is improved.
- Muscle strength of client's arms and legs is improved
- Client experiences a feeling of well-being.

Teaching Techniques of Crutch Walking

A. Four-Point Gait

Equipment

- Properly fitted crutches
- Regular, hard soled street shoes
- Safety belt, if needed

Procedure

1. Explain the rationale for the procedure to the client
   a. The gait is rather slow but very stable
   b. The gait can be performed when the client can move and bear weight on each leg.
2. Demonstrate the crutch foot sequence to the client.
   a. Move the right crutch

b. Move the left foot

c. Move the left crutch

d. Move the right foot

3. Help the client practice the gait. Be ready to help with balance if necessary.

4. Assess client's progress, and correct mistakes as they occur.

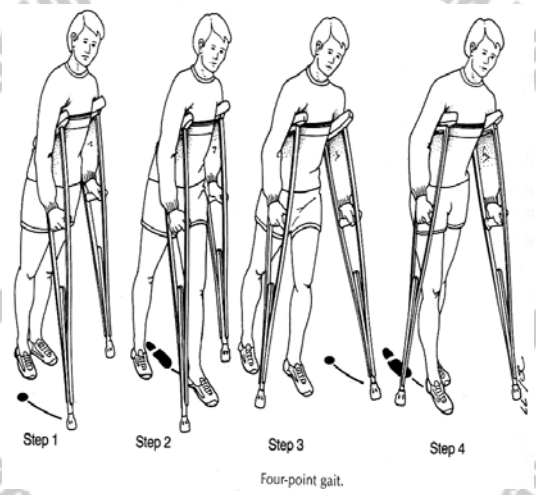


Figure 10. Four point gait

B. Three-Point Gait

The Equipment is Similar with Four Gait

Procedure

1. Explain the rationale of the procedure
   a. The gait can be performed when the client can bear little or no weight on one leg or when the client has only one leg.
   b. This gait is fairly rapid and requires strong appear extremities and good balance.
2. Demonstrate the crutch-foot sequence to the client.
   a. Two crutches support the weaker extremities
   b. Balance weight on the crutches
   c. Move both crutches and affected leg forward
   d. Move unaffected leg forward
3. Assess the client's progress, and correct any mistakes as they occur.
4. Remain with client until cutch safety is ensured.

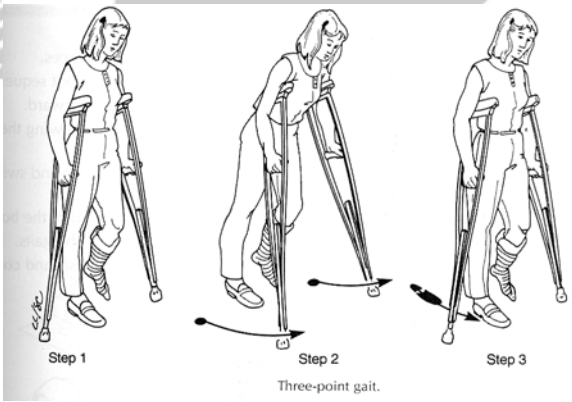


Figure 11. Three-Gait Point

C. Two Point-Gait

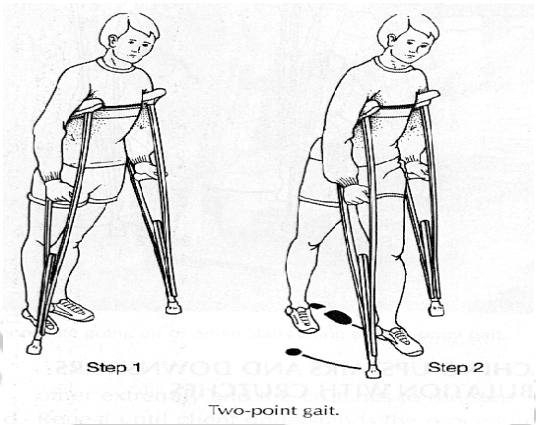


Figure 12. Two- Gait Point

Procedure

1. Explain the procedure to the client.
   a. This procedure is a rapid version of the four point gait
   b. This gait requires more balance than the four gait
2. Demonstrate the crutch-foot sequence to the client.
   a. Advance the right foot and left crutch simultaneously
   b. Advance the left foot and the right crutch simultaneously
3. Help the client practice the gait.
4. Assess the client's progress, and correct any mistakes as they occur.

Teaching Swing-To-Gait and Swing through Gait

Equipment

1. Properly fitted crutches
2. Regular, hard soled street shoes

Procedure

1. Explain the rationale for the procedure the client.
   a. These gaits are usually performed when the client's lower extremities are paralyzed.
   b. The client may use braces.
2. Demonstrate the crutch-foot sequences to the client
   a. Move both crutches forward
   b. Swing to gait: left and swing the body to the crutches
   c. Swing through gait: left and swing the body past the crutches
   d. Bring crutches informed of the body and repeat.
3. Help client practice the gait
4. Assess the client's progress and correct any mistakes as they occur.

Teaching up stairs and down stairs ambulation with crutches

Equipment

- Properly fitted crutches
- Regular, hard soled streed shoes
- Safety belt, if needed

Procedure

1. Explain the rational of the procedure to the client.
2. Apply safety belt if client is unsteady or requires support.
3. Demonstrate the procedure using a three-point gait.

Going Down Stairs

a. Start with weight on uninjured leg and crutches on the same level.

b. Put crutches on the first step

c. Put weight on the crutch handles and transfers unaffected extremity to the step where crutches are placed.

d. Repeat until the client understands the procedure

Going Upstairs

a. Start with the crutches and unaffected extremity on the same level.

b. Put weight on the crutch handles and lift the unaffected extremity on the first step of the stairs.

c. Put weight on the unaffected extremity and lift other extremity and the crutches to the step.

d. Repeat until client understands the procedure.

4. Help the client practice

5. Make sure that the client has adequate balance. Be ready to assist if necessary.

6. Assess the client's progress, and correct any mistakes as they occur.

7. Document the following points:
   - Time and distance of ambulation on crutches
   - Balance
   - Problems noted with technique
   - Remedial teaching
   - Client's perception on the procedure

Helping the client into Wheelchair or Chair

Supplies and Equipment

- Wheelchair
- Slippers or shoes (non-skid soles)
- Robe
- Transfer self (optional)

Procedure

1. Wash your hands
2. Explain the procedure to the patient
3. Position the wheelchair next to the bed or at 45^0 angles to the bed. Lock the wheel brakes and remove the food rests or move them to the "up" position.
4. Prepare to move the client:
   a. Assist the client with patting on robe and slippers.
   b. Obtain help from another person if the client is immobile, heavy, or connected to multiple pieces of equipment.
5. Raise the head of the bed so that the client is in the sitting position.
6. Assist the client to sit on the side of the bed
   a. Support the head and neck with one arm.
   b. Use your other arm to move the client's leg over the side of the bed.
   c. Allow the client's feet to rest on the floor.
   d. Maintain the client in this position for a short-time
7. Prepare to raise the client to a standing position
   a. Apply a transfer belt if necessary.
   b. Spread the client's feet and brace your knees against client's knees.
   c. Place your arms around client's waist.

8. Use the rocking motion of your legs to assist the client to stand. The client may use his or her hands to help push upward from bed.

9. Pivot the client in to position immediately in front of the wheelchair. Encourage the client to use armrests for support while you lower him or her in to chair.

10. Reposition foot rests; secure the client in a chair with a reminder device if needed. Cover the client with a blanket. Provide the nurse call button.

11. Wash your hands.

12. Check on the client frequently.

Document the transfer and the client's response.

Study questions

- State the principle underlying proper body mechanics and relate a nursing consideration.
- State the purposes of range of motion exercise.
- Identify principles related to safe movement of clients in and out of bed.
- Demonstrate the ability to move a partially mobile client safely from bed to chair and back.
- Demonstrate the ability to teach each of the crutch walking gaits to a client.
- Mention different positions used for various examination and treatment.

UNIT FOUR

CHAPTER ELEVEN

NUTRITION AND METABOLISM

Learning Objectives: At the completion of this unit students will be able to:

- Describe the electrolyte composition of the body
- Define electrolyte
- Mention the manifestation of fluid disturbance
- Describe causes of acid base imbalance
- Carryout procedures to maintain fluid electrolyte balance
- Apply procedures for ensuring nutritional maintainance
- Conduct proper NG tube insertion and feed accordingly
- Assist in total parentral hyperalimination

A. Fluid, electrolyte and Acid base balance

I. Fluid & Electrolyte Balance

Normal body function depends on a relatively constant volume of water and definite concentration of chemical compounds (electrolyte).

Water – is the most essential nutrient of life. 60-65% of the body weight is water and no physiology can function without it.

Electrolyte – is a compound that dissociate in a solution to break up in to separate electrically charged particles (ions) – cation, anions

Distribution of Body Water in Adult

Body water is contained with in two major physiological reservoirs (compartments).

1. Intracellular fluid → about 40% of body weight (25 liter)
2. Extra cellular fluid → about 20% of body weight (20 liters) in which:
   a) 5 liter in intra vassal
   b) 15 liter interstissual – tissue space the space between blood and the cells. A part from this the extra cellular fluid contains other fluids, which are usually negligible, considering their concentration in the body. These are CSF, ocular fluid, cynovial fluid, pleural fluid, and pericardial fluid, peritoneal fluid.

Water Balance

Normal body water is in a dynamic state. There is constant loss and constant replacement. i.e., intake is equal to output.

Electrolyte Composition of the Fluid

Electrically charged particles act as a conductor of electrical current in the solution. E.g. $NaCl \rightarrow Na^{+} + Cl^{-}$

Intracellular fluid and extra cellular fluid are separated by cell membrane, which is semi permeable. Body fluid composed of water, electrolyte, and non-electrolyte. The difference is maintained by the cells, which actively reject certain electrolytes, and retain others. E.g. Na^{+} is reach higher in concentration in extra cellular fluid. The difference is maintained by cellular action referred as sodium pump, which reject sodium from the cells. The major ions of cellular fluid in order of their quantity are:

	ICF	ECF
K^{+}	141 M Eg/L	4 M. Eg/L
Mg^{++}	58 M Eg/L	2 M. Eg/L
$Po4^{++}$	75 M Eg/L	10 M. Eg/L
Na^{+}	10 M Eg/L	142 M. Eg/L
Cl^{+}	4 M Eg/L	103 M. Eg/L

Transport Mechanism of Electrolyte

1. Osmosis
2. Diffusion
3. Active transport (Na and K pumb)
4. Filtration
5. Phagocytosis
6. Pincytosis

Substances are transported between cellular and extracellular fluids between biological membranes. These transport mechanisms are mentioned above.

Osmolarity – refers to the concentration of active particles per unit of solution. Two opposing forces exist with in the vascular compartment. These are:

1. Hydrostatic pressure of the blood which forces fluid out through semi permeable membrane
2. Osmotic pressure of the blood protein (colloid osmotic pressure) – which is pulling or holding force opposing the flow of fluid across the vascular membrane

When blood enter the arteriol and the capillaries hydrostatic pressure is greater than osmotic pressure and fluid filters out of the vessels. The movement of fluid out of the vessel is facilitated also by negative hydrostatic pressure – sucking fluid from plasma and the osmotic pressure in the interistissual space.

The result of the force that promotes the movement of fluid through the capillary is the sum of positive out ward pressure from within the capillaries and the negative hydrostatic pressure and the osmotic pressure in the interstissual spaces. E.g. Intracapillary hydrostatic pressure (ICHP), plasma osmotic pressure (POP). Negative interstissual hydrostatic pressure (Int.-H.P) Interstissual Osmotic Pressure (Int.O.P)

At arterial end of capillaries, there is outward force =

CHP – POP + Int.H.P – Int.O.P

30 - 28 + 6 – (-5.3) = 13.3

At the venous end: POP – CHP + Int.H.P – Int.O.P

28 – 10 + 6 – (-5.3)

= 6.7

In extracellular fluid the principal osmotic forces are exerted by sodium and chlorine ions. Potasium, magnesium and phosphorous are mainly responsible for osmotic pressure within the cells.

Effect of osmosis as applied to different extracellular solute concentration will give isotonic, hyper tonic and hypotonic solution.

When all contributions to osmolality are summed the total serum osmolality ranges from 275 mosm/kg to 290 mOsm/kg.

Solutions can be categorized according to how their osmolality compared with that of extracellular fluids. When the osmolality is the same as extracellular fluid, a solution is lebelled isoltonic. Such a solution remains within extracellular compartment. One third is distributed to the vascular space and two thirds to the interstissual space.

A fluid with a lower or higher osmolality is lebelled hypotonic or hypertonic respectively. Hypotonic fluids are distributed in proportion of ⅓ to the extracellular compartment and ⅔ of intracellular compartment. They are associated with cell swelling. When

hypertonic fluids are added to the vascular space, the extracellular osmolality becomes greater than that of intracellular fluid. As a result water moves from the intracellular to extracellular compartment and cells shrink.

Disturbance in Fluid Balance

1. Fluid deficit – negative fluid balance – dehydration fluid loss exceeds the fluid intake.

   Causes: - fluid defect is caused by:

   Excess fluid loss:

   (a) From GIT – vomiting and diarrhea
   (b) Excessive perspiration → increase fever, exposure to high environmental temperature.
   (c) Hemorrhage
   (d) Excess of solute
   (e) Chronic venal diseases
   (f) Wounds – especially big wounds

2. Decreased fluid intake due to:
   (a) Inability to swallow
   (b) Lack of available fluid
   (c) Lack of thirst sensation

3. Deficiency of electrolyte
   (a) Deficiency of aldostrone – during addson's disease
   (b) Relative decrease of electrolyte

Effects and Manifestations of fluid deficit

The effect depends on severity:

Usually, the first sign is thirst, dry skin,

- Decreased blood pressure
- Oliguria
- Retention of wasts → acidosis
- Increased haemoglobin and hematocrit
- Loss of strength and a pathy
- Disturbance in cellular function in the brain
  ⇨ Coma ⇨ death

Excess Fluid

Causes of excess fluid in the body

1. Increased venous pressure = increased hydrostatic pressure at venous end
2. Obstruction of lymphatic drainage
3. Deficiency of blood protein
4. Increased capillary permeability
5. Renal insufficiency – increased in take and decreased output
6. Excessive hormone e.g Mineral corticoid hormone

ACID BASE BALANCE

Acids are substances, which contain hydrogen ions that can be freed or donated by the chemical reaction to the other substances. Conversely, bases are chemical substances that combine with

hydroxyl ions in a chemical reaction. The acidity or alkalinity of a solution depends upon the concentration of hydrogen ions and hydroxyl ions. A compound that completely dissociates its hydrogen ions is referred as strong acid. E.g. H_2504, HCl, H_2P04

A compound that particularly freezes its hydrogen ions partially is referred as weak acid. E.g. H_2Co_3, citric acid, acetic acid.

Acid-Base Regulation

Body fluid normally have a PH of 7.35 – 7.45. The chief acid regulating from Metabolism is H_2CO_3 which is formed by a combination of CO_2 + H_2O. The combination is promoted by carbonic anhydrase with in the cells. In addition to the carbolic acid, cellular activity produces a substantial quantity of strong acid.

Acids must be rapidly neutralized or weakened by chemical reaction.

There must be a constant elimination of them from the body. Carbolic acid is removed by lungs by eliminating carbon dioxide.

Control Mechanism of body PH

The optimum PH of the body fluid is maintained by:

1. acid-base buffer system
2. respiratory system regulation
3. kidney regulation

Buffers are substances, which tends to stabilize or maintain the constancy of the PH of a solution when an acid or a base is added to it.

Example: $HCl + NaCO_3 \Rightarrow H_2CO_3 + HaCl$

They do this by rapidly converting a strong acid or base to a weaker one, which does not dissociate as rapidly.

Strong base NaOH + HCO_3 gives H_2ONaCO_3

Example of Buffering System:

A) Bicarbonate Buffering System
B) Phosphate Buffering System

Respiratory Regulation of Acid-Base Balance

Carbondioxide is constantly produced in cellular metabolism and diffuses from the cells into the blood and crythrocyte, and as a result CO_2 is in greater concentration in the blood. When it enters pulmonary capillaries than in the air in alveoli of the lungs.

Kidney Regulation

The kidneys play an important role in maintaining acid base balance by execration of H^+ and forming hydrogen carbonate.

The cell of the distal tubules is sensitive to the changes in the PH.

Test for acid base balance

1. Blood gas: O_2 and CO_2 are checked
   - H^+ concentration in arterial blood is checked
   - PH also determined

ACIDOSIS

A condition in which hydrogen ion concentration is increased in the body and the PH falls below normal. There are two types of acidosis: Respiratory acidosis and metabolic acidosis.

A. **Respiratory Acidosis**

Cause:

- Hypoventilation related to acute and chronic pulmonary diseases
- Circulatory failure
- Depression of CNS
- Drugs such as atrophine
- Gulian Bari syndrome
- Poliomalititis
- Decreased or increased potassium in the blood

B. **Metabolic Acidosis**

Cause:

- Increased acid production
- Uncontrolled diabetes mellitus
- Increased alcohol intake

- Excessive administration of drugs e.g ASA, Amonium Chloride
- Renal Failure
- Dehydration
- Sever diarrhea and vomiting

Common signs and symptoms for respiratory acidosis

- Restlessness, apprehensive, slow mental response, weakness, headache, confusion → coma. PH is < 7.35
- Decreased bicarbonate
- Increased arterial CO2 and decreased O2
- Increased urine acidity
- Increased ammonium in urine
- Low PH in urine

Metabolic Acidosis

Headache, fatigue, drowsiness

Serum PH < 7.35

Serum bicarbonate is low

Depression in CNS

Increased respiration

Nursing Intervention

- Improve respiratory ventilation (e.g., administer bronchial dilators, antibiotic oxygen as ordered.
- Maintain adequate hydration (2 to 3 L of fluid prerday)
- Carefully regulate mechanical ventilation if used.

- Monitor fluid in take and out put, vital signs, arterial blood gases (ABGs), and PH

Metabolic acidosis

Nursing interventions

- Monitor Arterial Blood Gases values
- Administer IV sodium bicarbonate carefully if ordered
- Correct underlying problem as ordered

Alkalosis: - is acid-base imbalance in which there is a decrease in H^+ concentration below 35 n mol/L and an increase in the P^H in excess of 7.45 due to carbonic acid deficit or an excess amount of bicarbonate (HCO_3).

Types of Alkalosis

1. Respiratory Alkalosis
2. Metabolic Alkalosis

Respiratory Alkalosis

Causes

1. Hyperventilation (excessive loss of carbolic acid) related to anxiety, hysteria, CNS disease which causes over stimulation of respiratory center
2. High fever
3. Hypoxia
4. Sever pain
5. High altitude

Sign and Symptoms

- Serum PH > 7.45
- Serum bicarbonate decreases
- Serum hydrogenion < 35 n mol/L
- Serum potassium decreased
- Cardiac arrythemia
- Increased Na+ and K+ excretion in urine
- Decreased chloride ion and hydrogenion excretion
- Hyperventilation
- Increased rate and depth of respiration
- Decreased arterial blood CO2
- Dizzness, tetany, muscle spasm (carpopedal spasm)
- Cramp, tingling in extremities
- Convulsion

Nursing Interventions

- Monitor vital signs and ABGs
- Assist client to breath more slowly
- Administer CO2 inhalations, or help client breath in a paper bag (to inhale CO2)

Metabolic Alkalosis

Causes

1. Abnormal loss of acid associated with vomiting and aspiration
2. Diuretics – through excess urination
3. Excessive ingestion of alkaline e.x. sodium bicarbonate

Sign and system

- Scrum PH > 7.45
- Scrum H+ < 35 n mal/L
- Increase serum bicarbonate
- Decreased serum potassium
- Cardiac arrhythmia
- Hypoventilation
- Slow, shallow respiration
- Increased PaCO2 or normal
- Decreased PaO2 if prolonged alkalosis
- Increased sodium and potassium ions excretion
- Decreased chloride and hydrogen ions excretions
- Dizziness, tremer, twitching, tetany, cramping, tingling in limbs, convulsion
- Others like nausea, vomiting and diarrhea

Nursing Interventions

- Monitor clients fluid losses closely
- Monitor vital signs, especially respirations
- Administer ordered IV fluids carefully
- Reverse underlying problems

B. NUTRITION

Nutrition is the study of nutrients and how the body utilizes the nutrients in food. Nutrition has a great impact on human well-being, behavior, and the environment.

Nutrients are substances needed for growth, maintenance, and repair of the body. The body can make some nutrients if adequate amount of necessary precursors (building blocks) are available.

Essential nutrients are those that a person must obtain through food because the body can not make them in sufficient quantities to meet its needs. The six classes of nutrients are carbohydrates, fat, protein, water, minerals, and vitamins. Carbohydrate, fat and protein provide energy and are called macronutrients. Vitamins and minerals regulate body process and are called micronutrients. Water is necessary for virtually every body function.

A HEALTHY DIET

A healthy diet is one that provides an adequate amount of each essential nutrient needed to support growth and development, perform physical activity, and maintain health. In addition to meeting physiologic requirements, diet also used to satisfy a variety of personal, social, and cultural needs. These factors must be considered in diet planning. The diets of all individuals must consist of foods that are easily attainable and affordable. People can use an infinite variety and combination of foods to form a healthy diet. The

current philosophy is that no good foods or bad foods exist, and that all foods can be enjoyed in moderation.

Dietary Guidelines

The purpose of dietary guidelines is to provide a healthy public with practical and positive suggestions for choosing a diet that meets nutritional requirements, support activity, and reduces the risk of malnutrition and chronic disease. These guidelines are not intended as a diet prescription for specific individuals, but serve as a starting point from which people can plan healthy diets.

Table 1. A guideline for healthy diet

Guide Line	Rationale
⇨ Eat a variety of foods	- No single food supplies all 40-plus essential nutrients in amounts needed variety also helps reduce the risk of nutrient toxicity and accidental contamination
⇨ Balance the food you eat with physical activity – maintain or improve your weight	- Excess weight increases the risk of numerous chronic diseases. Such as hypertension, heart disease, and diabetes
⇨ Choose a diet with plenty of gain products, vegetables, and fruits	- Plant foods provide fiber, complex carbohydrates, vitamins, minerals, and other substances important for good health
⇨ Choose a diet low in fat, saturated fat, and cholesterol	- High fat diets increase the risk of obesity, heart diseases, and certain types of cancer
⇨ Choose a diet moderate in sugars	- Foods high in added sugar are “empty calories”. Both sugar and starches promote tooth decay
⇨ Choose a diet that is moderate in salt and sodium	- A high salt intake is associate with higher blood pressure

Therapeutic Nutrition

Therapeutic nutrition is a modification of nutritional needs based on the disease condition or the excess or deficit of a nutrition status. Combination diets, which include alterations in minerals, vitamins, proteins, carbohydrates, fats as well as fluid and texture, are prescribed in therapeutic nutrition.

Gastrostomy/Jejunostomy Feedings

A gastrostomy feeding is the installation of liquid nourishment through a tube that enters a surgical opening (called a gastrostomy) through the abdominal wall in to the stomach.

A jejunostomy feeding is the installation of liquid nourishment through a tube that enters a surgical opening (a jejunostomy) through the abdominal wall in to the jejunum.

These feedings are usually temporary measures. When there is an obstruction the esophagus, they may be come permanent, for example, after removal of the esophagus.

Inserting a Nasogastric Tube

Purposes

- To administer tube feedings and medications to clients unable to eat by mouth or swallow a sufficient diet without aspirating food or fluid into the lungs

- To establish a means for suctioning stomach contents to prevent gastric distention, and vomiting.
- To remove laboratory contents for laboratory analysis
- To lavage (wash) the stomach in case of poisoning or overdose of medication

Equipment

- Large or small bore tube (plastic or rubber)
- Solution basin filled with warm water (if plastic tube is used) or ice (if rubber tube is used)
- Adhesive tape (2.5 cm wide)
- Disposable gloves
- Water soluble lubricants
- Facial tissues
- Glass of water and drinking straw or medication cup with water
- 20 to 50 ml syringe with an adaptor
- Basin
- Stetoscope
- Clamp (optional)
- Suction apparatus (if required)
- Gauze square or plastic specimen bag and elastic band
- Safety pin and elastic band
- Infant seat, towel, or pillow

- Restrain or hand mitts (for infants and young children)
- 5-mL or 12 mL, syringes

Procedure

1. Explain the procedure to the patient. The passage of tube is not painful but is unpleasant.
2. Position the patient in a high fowlers position, if health permits to support head on pillow.
3. In infant, place in infant seat or with rolled towel or pillow under the head and shoulders.
4. Place the towel across the chest. A diaper can be used for an infant.
5. Ask the client to hyperextend the head, and using a flash light observe the intactness of the tissue of the nostrils.
6. Examine the nares for any obstructions or deformities by asking the client to breath through one nostril while occluding of the other.
7. Select the nostril that has the greater airflow.
8. Obstruct one of the infant's nares, and feel for air passage from the other.
9. If a rubber tube is being used, place it on ice. This stiffens the tube, facilitating the insertion. If a plastic tube is being used, place it in warm water. This makes the tube more flexible.

10. Determine how far to insert
    - Use the tube to mark off the distance from the tip of the client's nose to the tip of the ear lobe and from the tip of the ear lobe to the tip of the sternum. This length approximate the distance from the nares to stomach.
    - For infants and young children, measure from the nose to the tip of the ear lobe and then to the xiphoid process.
    - Mark this length with adhesive tape, if the tube does not have marking.
11. Lubricate the tip of the tube well with water solution lubricant or water to ease insertion.
12. Insert the tube with its natural curve toward the client in to the selected nostril. Ask the client to hyper extend the neck, and gently advance the tube toward the nasopharynx. Do not hyper-extend or hyper -flex an infant neck
13. Direct the tube along the floor of the nostril and toward the ear on that side.
14. If the tube meets resistance, withdraw it, rubricate it and insert it in the other nostril. (The tube should never be forced against resistance)
15. Once the tube reaches the oropharynix (throat) the client will feel the tube in the throat and may gag or retch. Ask the client to tilt the head forward and encourage the client to drink and swallow. If the client gags, stop passing the tube momentary.

Have the client rest, take a few breaths, and take sips of water to calm the gag reflex.

16. In the cooperation with the client, pass the tube 5 to 10 cm (2 to 4 in) with each swallow, until the indicated length is inserted.

17. If the client continuous to gag and the tube does not advance with each swallow, with draw it slightly, and inspect the throat by looking through the mouth. (The tube may be coiled in the throat. If so withdraw it until it is straight, and try again to insert it).

18. As certain correct placement of the tube:
    - Aspirate stomach content, and check their acidity.
    - Ascultate air insufflation's
    - If the signs do not indicate placement in the stomach, advance the tube 5 cm, and repeat the test
    - For the tube that are to be placed in to the duodenum or jejunum, advance the tube 5 to 7.5 cm per hour until x-ray study confirms its placement.

19. Secure the tube by taping it to the bridge of the client's nose
    - Cut 7.5 cm of tape, and split it length wise at one end, leaving 2.5 cm tab at the end
    - Place the tape over the bridge of the client' nose and bring the split ends under the tubing and backup over the nose.

- For infants or small children, tape the tube to the area between the end of the nares and the upper lip, as well as to the cheek.

20. Attach the tube to the suction source or feeding apparatus as ordered, or clamp the end of the tubing.

21. Secure the tube to the client's gown. Loop an elastic band around the end of the tubing, and attach the elastic band to the gown with a safety pin or attach a piece of adhesive tape to the tube, and pin the tape to the gown.

22. Document relevant information, means by which correct placement was determined and client responses.

23. Establish a plan for providing daily nasogastric tube care
    - Inspect the nostril for discharge and irritation
    - Clean the nostril and tube with moistened cotton tipped applicators
    - Apply water-soluble lubricant to the nostril if it appears dry or encrusted.
    - Change the adhesive tape ad required
    - Give frequent mouth care

24. If suction is applied, ensure that the patency of both the nasogastric and suction tubes in maintained

25. Document all relevant information:
    - Type of tube inserted
    - Data and time of tube insertion
    - Type of suction used

- Color and amount of gastric contents
- Client tolerance of the procedure

NASOGASTRIC TUBE FEEDING

Before commencing nasogastric feeding, determine the type amount, and frequency of feedings.

Purposes

- To restore or maintain nutritional status
- To administer medications

Equipment

- Correct amount of feeding solution
- Pacifier
- 20 to 50 mL syringe with an adapter
- Emesis basin
- Bulb syringe (for an intermittent feeding)
- Calibrated plastic feeding bag and a drip chamber, which can be attached to the tubing or
- Pre-filled bottle with a drip chamber, tubing, and a flow regulator clamp.
- Measuring container from which to power the feeding (if using bulb syringe)
- Water (60 ml unless other wise specified) at room temperature

- Feeding pump (optional)

Procedure/Intervention

1. Prepare the client and the feeding
   - Explain the patient about the feeding
   - Provide privacy
   - Position the patient in Fowler's position in bed or sitting position in a chair
   - Position a small child or infant in your lap, and provide a pacifier during feeding

2. Assess tube placement. Attach the syringe to the open end of the tube, aspirate alimentary secretions. Check the PH.

3. Assess residual feeding contents
   - Aspirate all the stomach contents, and measure the amount prior to administering the feeding. If 50 mL or more undigested formula is withdrawn in adults, or 10 ml or more in infants, check with the nurse in charge before proceeding.
   - Reinstill the gastric contents in to the stomach if this is the agency or physician's practice. Remove the syringe bulb or plunger, and pour the gastric contents via the syringe in to the nasogastric tube.

4. Administer the feeding

Before administering feeding:

a) Check the expiration date of the feeding

b) Warm the feeding to room temperature

Bulb syring

- Remove the bulb from the syringe, and connect the syringe to a pinched or clamed nasogastric tube
- Add feeding to the syringe barrel
- Permit the feeding to flow in slowly at the prescribed rate. Raise or lower the syringe to adjust the flow as needed. Pinch or clamp the tubing to stop the flow for a minute if the client experiences discomfort.

Feeding Bag

- Hang the bag from an infusion pole about 30 cm above the tube's point of insertion in to the client
- Clamp the tubing, and add the formula to the bag, if it is not pre-filled.
- Open the damp, run the formula through the tubing, and reclamp the tube.
- Attach the bag to the nasogastric tube and regulate the drip by adjusting the clamp to drop factor on bag.

5. Rinse the feeding tube immediately before all the formula has run through the tubing:

- Instill 60 mL of water the feeding tube
- Be sure to add the water before the feeding solution has drained from the neck of a bulb syringe or from the tubing of an administration set. Before adding water to a feeding bag or prefilled tubing set, first clamp and disconnect both feeding and administration tubes.

6. Clamp and cover the feeding tube
   - Clamp the feeding tube before all of the water is instilled
   - Cover the end of the feeding tube with gauze held by an elastic band

7. Ensure client comfort and safety
   - Pin the tubing to the clients gown
   - Ask the client to remain sitting upright in Fowler's position or in slightly elevated right lateral position for at least 30 minutes.

8. Dispose of equipment appropriately
   - If the equipment is to be reused, wash with soap and water so that it is ready for reuse.
   - Change the equipment every 24 hours or according to the agency's policy.

9. Document all relevant information

   - Document the feeding, including amount, and kind of solution taken, duration of feeding and assessment of client.
   - Record the volume of the feeding and water administered on the client's intake and out put record.

10. Monitor the client for possible problems:

   - Carefully assess clients receiving tube feeding for problems
   - To prevent dehydration, give the client supplemental water in addition to the prescribe tube feeding as ordered.

TOTAL PARENTRAL NUTRITION

Parentral nutrition is a method where by nutrients may be introduced into the system via the enteral route. It is also referee to as intravenous hyperalimenation (IVH). By passing the normal gastro intestinal system, this route provides a nitrogen source for those unable to ingest protein, carbohydrates (adequate caloric), or fats. A balanced blend of nutrients, including vitamins and minerals, can be administered peripherally, using isotonic concentrations of glucose, crystalline aminoacids, and fats; or because the solution may be irritating to the veins, nutrients can be administered through a central, high-flow vein. Hypertonic glucose, along with crystalline

aminoacids, fats, electrolytes, vitamins and trace elements is given through central vein access.

The technique requires especial handling and management of the client and the most expensive method of feeding.

It should be used only if the intestines do not work adequately, if the client has an obstruction or has fistula, if the bowel rest is required.

Implantable vascular access devices are placed under the skin in a subcutaneous pocket and a surgically tunneled silicone catheter is place in the cephalic or external jugular vein and threaded to the superior vana cava.

Application of Nursing Process

Assessment

- Complete physical assessment and client history
- Assess weight and take a weight history
- Identify and condition that would affect TPN (renal or cardiac disease)
- Assess nutritional needs of clients who are unable to ingest nutrients normally.
- Identify the caloric intake necessary to promote positive nitrogen balance, tissue repair, and growth
- Observe for correct additives in each hyper alimentation bottle.

- Check lable of solution with physician's orders
- Check rate of infusion on physician's order
- Check rate of infusion on physician's order
- Assess ability of client to understand instructions during the procedure.
- Ensure potency of the central venous line following the insertion
- Observe catheter insertion site for signs of infection, thromboblebities, or possible infiltration.
- Inspect dressing over central line to ensure a dry, non contaminated dressing.

Planning/Objective Setting

- To provide a nitrogen source for clients unable to ingest protein normally.
- To provide adequate calories for clients unable to tolerate oral feedings.
- To provide nutrients for clients requiring by pass of the gastrointestinal tract.
- To provide increased calories where regular IV solutions are insufficient.
- To prevent or correct a deficiency of essential fatty acids.
- To provide a contamination free mode of delivering the hyper alimentation solution

Implementation

- Assisting with catheter insertion
- Maintaining central vein Infusions
- Changing parentral hyper alimentation Dressing and Tubing
- Maintaining Hyper alimentation for children

Evaluation/Expected Outcome

- Catheter is place correctly with no infiltration.
- Solution is infused as prescribed flow rate and tolerated by patient
- Dressing remains dry and in fact during interval between changes.
- Insertion site remains free of infection and inflammation sepsis does not occur.
- Client receives nutrients necessary for tissue repair and sustenance.

Assisting with Catheter Insertion

Equipment

- Intra cath (20 cm, 16-gauge, radio opaque, polyvinyl chloride) or peripheral line catheter
- Iodine solution
- Betadine ointment and swabs
- Alcohol sponges

- Aceptone solution (optional)
- Sterile 4x4 gauze pads
- Sterile gloves
- Sterile towels or drapes
- Sterile gown
- Masks (2)
- 3-mL syringe with 25-gauge needle
- Lidocaine or local anesthetic agent
- Sterile black silk suture with needle, IV filter and tubing
- IV extension tubing
- 500 ml normal saline IV bag or DW
- Hyper alimentation solution
- IV infusion pump and cassette
- Bath blanket to provide roll under shoulders

Preparation

1. Explain procedure to client to allay anxiety
2. Obtain consent from client or family
3. Teach Valsalva's Maneuver for use during catheter insertion procedure if client does not have a cardiac disorder.
4. Review the orders for correct hyper alimentation solution additives. Check the content of solution with order.
5. Inspect TPN bottle for cracks, turbidity, or precipitates.

6. Assemble IV insertion tray or kit, normal saline solution bottle or DW, IV tubing, extension tubing, and filter.
7. Wash hands
8. Flush IV tubing with IV solution
9. Place IV tubing through infusion pump
10. Place catheter insertion equipment on bedside stared

Procedure

1. Position client in head-down position with head turned to opposite direction of catheter insertion size. Place a small roll between client's shoulders to expose insertion site.
2. Cleanse insertion area with Betadine solution (if allergic to Betadine solution, use 70% isopropyl alcohol).
3. Assist the physician to gown, put on mask and gloves prior to beginning procedure.
4. Done mask and sterile gloves.
5. Assist physician as needed during catheter insertion
6. Instruct client in Valsalva's Maneuver when stylet is removed from catheter and when IV tubing is connected to catheter
   a) Instruct client to exhale against a closed glottis.
   b) If client is unable to do this compress client's abdomen. Both these procedures help decrease possibility of air embolism.

7. After tubing is connected, instruct client to breath normally.
8. Tape area between tubing and catheter hub.
9. Turn on IV infusion pump, using normal saline solution, at slow rate, 10 gtt/mincle, until X-ray ensures accurate catheter placement.
10. Place Betadine over catheter insertion site. Apply transparent dressing.
11. Order portable chest X-ray to verify correct catheter placement.
12. Following confirmation of Catheter placement. Change IV solution to hyper alimentation solution and adjust flow rate as ordered.
13. Time tape the bottle after adjusting flow rate. Be prepared to document on IV hourly infusion recorded.
14. Observe for signs of complication.
15. Take vital signs every 4 hours. If signs change or temperature rises significantly, the client may be developing complications.

Monitoring Guidelines for TPN

- Monitor for signs of infection or sepsis at the insertion site, which is the most common complication of TPN

- Weigh client daily – obsorb for fluid gain or loss. Weight gain may indicate fluid overload rather than increased nutritional gain.
- Monitor electrolyte and protein levels daily in the beginning of treatment. Magnesium and calcium imbalance may occur.
- Monitor serum glucose levels observing for hyperglycemia (thirsty, polyuria)
- Assess blood urea nitrogen and creatinine levels – increases may indicate excess amino acid intake.
- Check liver function test results – abnormal value may indicate an excess of lipids or problems in protein or glucose metabolism.

Study questions:

- Describe the electrolyte composition of the body
- Define electrolyte.
- Mention the manifestation of fluid disturbance
- Describe causes of acid base imbalance
- Mention two to apply procedures for ensuring nutritional maintenance
- State procedure for NG tube insertion.
- Describe conditions in which NGT feeding is indicated.

UNIT FIVE

CHAPTER TWELEVE

ELIMINATION OF GASTROINTESTINAL AND URINARY OUTPUTS

Learning Objective

At completion of the unit the learner will be able to:

- Define enema.
- List purposes of gastric aspiration, lavage, enema and catheterization.
- Mention types of enema.
- Provide enema according to its purpose and need.
- Explain mechanism of action of fluids used for enema.
- Explain purpose of catheterization.
- Identify different types of catheters.
- Describe indication of catheterization.
- Demonstrate sterility technique through out the catheterization.
- Intervene the procedure for those in need of it with understanding of both male and female catheterization.
- Identify important precautions of the procedure.

Key Terminology

anuria	dysuria	melena	projectile vomiting
consitipation	enema	micturation	urgency
cystitis	fecal impaction	nocturia	urinary catheter
defecation	flatus	oliguria	urinary frequency
diarrhea	incontinenece	polyuria	urinary retention
voiding	vomitus		

I Gastric Lavage

Definition- This is the irrigation or washing out of the stomach.

Purpose

1. To remove alcoholic, narcotic or any other poisoning, which has been swallowed.
2. To clean the stomach before operation
3. To relive congestion, there by stimulating peristalsis e.g. Pyloric stenosis
4. For diagnostic purposes

1. Gastric Lavage Using a Simple Rubber Tube

Equipment:

Clean trolley.

- Bowel containing large esophageal tube in ice (cold water)
- Rubber tubing with screw or clip and glass connection
- Metal or plastic funnel
- Large Jug (5 litter)

- Solution as prescription/usually to care for acidic poisoning. We use sodium bicarbonate 1 teaspoon to 500 cc. of water at a temperature of 37^0c - 38^0c.)
- Small jug to carry solution to the funnel
- Lubricant e.g. liquid paraffin
- Bowl for gauze swabs
- Cape or protective material to put around the patient chest
- Pail to receive returned fluid
- Mackintosh or paper to protect the floor beneath the pail
- Receiver for used esophageal tube
- Paper bag for waste material
- A tray for mouth wash after lavage
- Denature cup.
- A receiver for pt's dentures. If any, and should be labeled with the pt's name
- A receiver containing mount gag, tongue depressor, and tongue forceps if patient is unconscious
- Mackintosh to protect bed linen
- Litmus paper
- Specimen battle. If laboratory test is requires
- Measuring jug

Procedure

1. Explain procedure to the pt and ask him/her to remove artificial dentures, If any.
2. Protect pt with cape or towel

3. Protect bed linen by spreading the mackintosh on the accessible side of the bed.
4. Place mackintosh or paper under the pail to protect the floor
5. Elevate head of the bed it pt is conscious and the condition permits. But if unconscious, place in prone position with head over the edge of the bed or head lower than the body.
6. Measure the tube from the tip of the nose up to the ear lobe and from the bridge of the nose to the end of the sternum. (32 - 36 c.m.)
7. Gently pass the tube over the tongue, slightly to one side of the midline towards the pharynx. (If patient is unconscious, mouth gug may be used)
8. Ask patient to swallow while inserting the tube and allow to breath in between swallowing.
9. If air bubbles, cough and cyanosis are noticed the tube is with drawn and procedure commenced again.
10. After inserting, place funnel end in a basin of water to check if the tube is in the air passage.
11. Fill the small pint measure and power gently until the funnel is empty, then invert over the pail.
12. Take specimen. If required, and continue the process until the returned fluid becomes clear and the prescribed solution has been used.
13. Remove tube gently and give mouth wash
14. Measure the amount of fluid returned and record
15. Report and abnormality e.g. blood stain or clots or pieces of the gut.

2. Gastric Lavage Using a Tube with a Bulb

Procedure

1. Clamp tubing below bulb.
2. With right hand, squeeze bulb this forcing the air out through the funnel.
3. With left hand, pinch tubing over bulb and at the same time releasing bulb. This creates a suction, which will draw the stomach contents in to the bulb.
4. Lower funnel and allow excess gastric contents to drain in to the pail.
5. Pour 200c.c - 300c.c of solution into funnel. Before funnel is empty invert it and allow solution to drain.
6. Before solution stops running, turn up funnel and add another quantity of solution
7. Repeat this procedure until returns are clear
8. Gently remove the tube, feel the patient pulse and watch the respiration
9. Document the procedure

N.B.

Record

- *Time of treatment*
- *Amount & kind of solution used*
- *Nature of returned fluid*
- *Reaction of patient during and after procedure*

II. GASTRIC ASPIRATION

- Aspiration is to withdrawal of fluid or gas from a cavity by suction

Purpose

1. To prevent or relieve distention following abdominal operation
2. In case of gastrointestinal obstruction, to remove the stomach or gastric contents
3. To keep the stomach empty before on emergency Abdominal operation is done
4. To aspirate the stomach contents for diagnostic purposes

There are two type of gastric Aspiration

1. Intermittent method: - In this case, Aspiration is done as condition requires and as ordered.
2. Continues method: - Attached to a drainage bag

There are 2 ways of supplying suction

a. Simple suction by the use of a syringe
b. An electric suction machine

The continues method is indicated when it is absolutely necessary and desirable to keep the stomach and duodenum empty and at rest.

Equipment

- Aspiration tube (Ryle's tube)
- Aspiration syringe if this method is used

- Gallipots with lubricant e.g. liquid paraffin or vase line, to lubricate the nostrils
- Gauze swabs in a bowl
- Sodium bicarbonate solution or saline to clean the nostrils
- Litmus paper
- Water in a galipot to test the right position of the tube in the stomach
- Two test tubes and laboratory forms of necessary
- Saline or plain water in a galipot to be injected, in case the stomach content is too thick to come out through the syringe.
- Rubber mackintosh and towel to protect the patient's chest.
- Receiver for soiled swabs

Procedure

1. Explain procedure to patient, in order to gain her/his co-operation
2. Prop up in an upright position with help of back rest and pillow
3. Cleanse and lubricate the nostrils
4. Lubricate the Ryle's tube with water
5. Insert the tube as directed in nasal feeding and ask the patient to swallow as the tube goes down.
6. Instruct patient to open her or his mouth to make sure the tube is in the stomach
7. After being sure that the tube is in the right position, inject about 15-20 cc. of saline or water in to the stomach.
8. Draw plunger back to with draw the fluid collect specimen, If needed

9. If the Ryle's tube is to be left in site then a spigot or clamp is used to close the end, but if it is for one aspiration and to be removed immediately, it should be withdrawn very gently to avoid irritating the mucous lining.

N.B

1. *Special care of the nose and mouth to prevent dryness should be considered*
2. *Always measure the amount withdrawn accurately noting color, contents and smell*
3. *Record on the fluid chart properly*
4. *Report any change in patient condition regarding pulse, Temperature, B.P fluid out put.*

III. Enema

Enema: is the introduction of fluid into rectum and sigmoid colon for cleansing, therapeutic or diagnostic purposes.

Purpose:

- For emptying – soap solution enema
- For diagnostic purpose (Barium enema)
- For introducing drug/substance (retention enema)

Solution used:

1. Normal saline
2. Soap solution – sol. Soap 1gm in 20 ml of H_2O
3. Epsum salt 15 gm – 120 gm in 1,000 ml of H_2O

Mechanisms of some solutions used in enema

1. Tap water: increase peristalsis by causing mechanical distension of the colon.
2. Normal saline solution
3. Soap solution: increases peristalsis due to irritating effect of soap to the lumenal mucosa of the colon.
4. Epsum salt: The concentrated solution causes flow of ECF (extra cellular fluid) to the lumen causing mechanical distension resulting in increased peristalsis.

Classified into:

- Cleansing (evacuation)
- Retention
- Carminative
- Return flow enema

Cleansing enema

Kinds:

1. High enema
   - Is given to clean as much of the colon as possible
   - The solution container should be 30-45 cm about the rectum
2. Low enema
   - Is administered to clean the rectum and sigmoid colon only

Guidelines

Enema for adults are usually given at 40-43°c and for children at 37.7 °c

Hot – cause injury to the bowel mucous

Cold – uncomfortable and may trigger a spasm of the sphincter muscles

The amount of solution to be administered depends on:

- Kind of enema
- The age of the person and
- The persons ability to retain the solution

Age	**Amount**
18 month	50-200 ml
18 mon-5 yrs	200-300 ml
5-12 yrs	300-500 ml
12 yrs and older	500-1,000 ml

The rectal tube should be appropriate: is measured in French scale

Age	**Size**
Infants/small child	10-12 fr
Toddler	14-16 fr
School age child	16-18 fr
Adults	22-30 fr

Purpose

- To stimulate peristalsis and remove feces or flatus (for constipation)
- To soften feces and lubricate the rectum and colon
- To clean the rectum and colon in preparation for an examination. E.g. Colonoscopy
- To remove feces prior to a surgical procedure or a delivery
- For incontinent patients to keep the colon empty
- For diagnostic test

E.g. before certain x-ray exam – barium enema

Before giving stool specimen for certain parasites

Procedure

- Inform the patient about the procedure
- Put bed side screen for privacy
- Attach rubber tube with enema can with nozzle and stop cock or clamp
- Place the patient in the lateral position with the Rt. leg flexed, for adequate exposure of the anus (facilitates the flow of solution by gravity into the sigmoid and descending color, which are on the side
- Fill the enema can which 1000 cc of solution for adults
- Lubricate about 5 cm of the rectal tube – facilities insertion through the sphincter and minimizes trauma
- Hung the can = 45 cm from bed or 30 cm from patient on the stand

- Place a piece of mackintosh under the bed
- Make the tube air free by releasing the clamp and allowing the fluid to run down little to the bed pan and clamp open – prevents unnecessary distention
- Lift the upper buttock to visualize the answer
- Insert the tube
  - 7-10 cm in an adult smoothly and slowly
  - 5-7.5 cm in the child
  - 2.5-3.75 cm in an infant
- Raise the solution container and open the clamp to allow fluid to flow
- Administer the fluid slowly if client complains of fullness or pain stop the flow for 30" and restart the flow at a slower rate – decreases intestinal spasm and premature ejection of the solution
- Do not allow all the fluid to go as there is a possibility of air entering the rectum or when the client can not hold anymore and wants to defecate, close the clamp and remove the rectal tube from the anus and offer the bed pan.
- Remove bed pan and clean the rectal tube

Note: *if resistance is encountered at the internal sphincter, ask the clients to take a deep* breath, then run a small amount of solution (relaxes the internal anus sphincter)

Retention Enema

- Administration of solution to be retained in rectum for short or long period
- Are enemas meant for various purpose in which the fluid usually medicine is retained in rectum for short or long period – for local or general effects

  E.g. oil retention enema

  Antispasmodic enema

1. Principles:
   - Is given slowly by means of a rectal tube
   - The amount of fluid is usually 150-200 cc
   - Cleansing enema is given after the retention time is over
   - Temperature of enema fluid is 37.4 c or body

   (Return flow Enema) Harris fluid

Purpose

- To supply the body with fluid.
- To give medication E.g. stimulants – paraldehyde or ant-spasmodic.
- To soften impacted fecal matter.

Other equipment is similar except that the tube for retention enema is smaller in width.

Procedure

Similar with the cleansing enema but the enema should be administered very slowly and always be preceded by passing a flatus tube

Note

1. *Most medicated retention enema must be preceded by a cleansing enema. A patient must rest for ½ hrs before giving retention enema*
2. *Elevate foot of bed to help patient retain enema*
3. *The amount of fluid is usually 150-200 cc*
4. *Temperature of enema fluid is 37.4 ^{o}c or at body*
5. *Kinds of solution used to supply body with fluid are plain H_2O, normal saline, glucose 5% sodabicarbonate 2-5%*
6. *Olive oil 100-200 cc to be retained for 6-8 hrs is given for server constipation*

Rectal Washout (Siphoning Enema)

(Colon irrigation or colonic flush)

- Also called enterolysis
- Is the process of introducing large amount of fluid into large bowel for flushing purpose and allow return or wash out fluid

Purpose

- To prepare the patient for x-ray exam and sigmoidoscopy
- To prepare the patient for rectum and color operation

Solution Used

- Normal saline
- Soda-bi-carbonate solution (to remove excess mucus)
- Tap water

- KMNO4 sol. 1:6000 for dysentery or weak tannic acid
- Tr. Asafetida in 1:1000 to relieve distention

Procedure

- Insert the tube like the cleansing enema
- The client lies on the bed with hips close to the side of the bed (client assumes a right side lying position for siphoning)
- Open the clamp and allow to run about 1,000 cc of fluid in the bowel, then siphon back into the bucket
- Carry on the procedure until the fluid return is clear

Note:

- *The procedure should not take > 2 hrs*
- *Should be finished 1 hr before exam or x-ray – to give time for the large intestine to absorb the rest of the fluid*
- *Give cleansing enema ½ hr before the rectal wash out*
- *Allow the fluid to pass slowly*

Amount of solution

- 5-6 liters or until the wash out rectum fluid becomes clear

Passing a Flatus Tube

Purpose

- To decrease flatulence (sever abdominal distention)
- Before giving a retention enema

Procedure

- Place the patient in left. Lateral position
- Lubricate the tube about 15 cm
- Separate the rectum and insert 12-15 cm in to the rectum and tape it
- Connect the free end to extra tubing by the glass connector
- The end of the tube should reach the (tape H_2O) solution in the bowel
- The amount of air passed can be seen bubbling through the solution

  (a funnel may be connected to free end of tube and placed in an antiseptic solution in bowel)
- Teach client to avoid substances that cause flatulent
- Leave the rectal tube in place for a period or no longer than 20 minute – can affect the ability to voluntarily control the sphincter if placement is prolonged
- Reinsert the rectal tube every 2-3 hrs if the distention has been unrelieved or reaccumulates – allows gas to move in the direction of the rectum.

III. Urinary Catheterization

Definition of catheterization: Is the introduction of a tube (catheter) through the urethra into the urinary bladder

- Is performed only when absolutely necessary for fear of infection and trauma

***Note**. Strictly a sterile procedure, i.e. the nurse should always follow aseptic technique*

Catheter: is a tube with a hole at the tip

Types of Catheter

1. Straight (plain or Robinson)
2. Retention (Foleys, indwelling)

Selecting an appropriate catheter:

- May be made of
  - ⇐ Plastic – for 1 week
  - ⇐ Latex – 2-3 (rubber)
  - ⇐ Silicon – for 2-3 month
  - ⇐ Pelyvinylchloride (PVC) – 4-6

1. Select the type of material in accordance with the estimated length of the catheterization period:
2. Determine appropriate catheter size
   - are determined by diameter of lumen
   - graded on French scale or number.
   - Catheter size depends on the size of the urethral canal
     - ⇐ # 8-10 Fr – children
     - ⇐ # 14-16 Fr – female adults
     - ⇐ # 18 Fr – adult male

NB. Fr= French Scale

3. Determine appropriate catheter length by the clients gender
   - For adult male – 40 cm catheter
   - For adult females – 22 cm catheter

4. Select appropriate balloon size
   - 5 ml – for adults
   - 3 ml – for children

Catheterization Using a straight catheter

Purpose

- To relieve discomfort due to bladder distention
- To assess the residual urine
- To obtain a urine specimen
- To empty the bladder prior to surgery

Equipment

I. Sterile

- Kidney dish
- Galipot
- Gauze
- Towel
- Solution
- Lubricant
- Catheter

- Syringe
- Water
- Specimen bottle
- Gloves

II. Clean

- Waste receiver
- Rubber sheet
- Flash light
- Measuring jug
- Screen

Procedure

- Prepare the client and equipment for perennial wash
- Position the patient – dorsal recumbent (pillows can be used to elevate the buttocks in females).
- Drape the patient.
- Wash the perennial area with warm water and soap
- Rinse and dry the area
- Prepare the equipment
- Create a sterile field
- Drop the client with a sterile drape
- Clean the area with antiseptic solution.
- Lubricate the insertion tip of the catheter (5-7 cm in)

- Expose the urinary meatus adequately by retracting the tissue or the labia minora in an upward direction – female
- Retract the fore skin of uncircumcised mal.
- Grasp the penis firmly behind the glans and hold straighten the down ward curvature of vertical it go to the body – male hole the catheter 5 cm from the insertion tip
- Insert the catheter into the urethral orifice
- Insert 5 cm in females and 20 cm in males or until urine comes
- Collect the urine – for specimen (about 30 ml)
- Pinch previous leakage
- Empty or drain the bladder and remove the catheter
- For adults experiencing urinary retention an order is needed on the amount to urine to be expelled

Note.

- If resistance is encountered during insertion, do not force it – forceful pressure can cause trauma. Ask the client to take deep breaths - relaxes the external sphincter (slight resistance is normal)
- **Dorsal Recumbent**

  Female - for a better view of the urinary meatus and reduce the risk of catheter contaminate.

  Male- allows greater relaxation of the abdominal and perennial muscles and permits easier insertion of the tube.

  Straight Catheter: is a single lumen tube with a small eye or opening about (1.25 cm) from the insertion tip:

Inserting a Retention (Indwelling) Catheter

Retention (Foley) Catheter

Contains a second, smaller tube through out its length on the inside – this tube is connected to a balloon near the insertion tip.

Purpose

- To manage incontinence
- To provide for intermittent or continuous bladder drainage and irrigation
- To prevent urine from contacting an incision after perineal surgery (prevent infection)
- To measure urine out put needs to be monitored hourly

Procedure

- Explain the procedure to the patient
- Prepare the equipment like:
  - Retention catheter
  - Syringe
  - ⇐ Sterile water
  - ⇐ Tape
  - ⇐ Urine collection bag and tubing
- After catheter insertion, the balloon is inflated to hold the catheter in place with in the bladder.
  - ❖ The out side end of the catheter is bifurcated i.e., it has two openings, one to drain the urine, the other to inflate the balloon.

- ❖ The balloons are sized by the volume of fluid or air used to inflate them 5 ml – 30 ml (15 commonly) indicated with the catheter size 18 Fr – 5 ml.

- Test the catheter balloon
- Follow steps as insertion straight catheter
- Insert the catheter an additional 2.5 – 5 cm (1-2 in) beyond the point at which urine began to flow (the balloon of the catheter is located behind the opening at the insertion tip) – this ensures that the balloon is inflated inside the bladder and not in the urethra (cause trauma)
- Inflate the balloon with the pre filled syringe
- Apply slight tension on the catheter until you feel resistance: resistance indicates that the catheter balloon is inflated appropriately and that the catheter is well anchored in the bladder
- Release the resistance
- Tape the catheter with tape to the inside of a females thigh or to the thigh or a body of a male client
  - ⇐ Restricts the movement of the catheter and irritation in the urethra when the client moves
  - ⇐ When there is increased risk of penile scrotal excoriation
- Establish effective drainage
- The bag should be off the floor – the emptying spout does not become grossly contaminated
- Document pertinent data

Removal

- Withdraw the solution or air from the balloon using a syringe
- And remove gently

Study Questions

1. Define gastric lavage.
2. Mention indications of gastric lavage.
3. Define Enema.
4. State how the mechanism of action of soap solution enema exerts its function.
5. Mention conditions that differentiate between male and female catheterization.

UNIT SIX

CHAPTER THIRTEEN

MEDICATION ADMINISTRATION

Learning Objectives

At the end of this unit the students will be able to:

- Describe various rout of drug administration.
- Mention the general rules & care of administering medications.
- Identify the parts and types of syringes and needles.
- List the necessary equipments required for drug administration.
- Mention the five rights before drug administration.
- Locate the different sites of parentral drug administration.
- Demonstrate essential steps of medication administration.
- List precautions for medication administration.

Key Terminology

ampule	ohpthalimic	parentral
brand name	pharmacokinectics	trade name
capsule	pharmacology	transdermal
chemical name	potentiating	toxicity
dosage	prescription	transfusion
enteric coated	synergistic	vial
generic name	otic	z-track
infusion	tablet	

medication topical

Pharmacology is the study of drugs. Drugs are chemicals that alter functions of living organism.

Therapeutic agents are drugs or medications that, when introduced in to living organism, modify the physiologic functions of that organism.

Drug Metabolism

Drug metabolism in the human body is accomplished in four basic stages: absorption, transportation, biotransformation, and excretion. For a drug to be completely metabolized, it must first be given in sufficient concentration to produce desired effect on body tissues. When this “Critical drug concentration” level is achieved, body tissue change.

Route of Absorption

Drugs are absorbed by the mucus membranes, the gastro intestinal tract, the respiratory tract, and the skin. The mucus membranes are one of the most rapid and effective routes of absorption because they are highly vascular.

Oral drugs (drugs that are given by mouth) are absorbed in the gastro intestinal tract. The rate of absorption depends on the pH of the stomach’s contents, the food contents in the stomach at the time of ingestion, and the presence of disease conditions. Most of the drug concentrate dissolves in the small intestine where the large

vascular surface and moderate pH level enhance the process of breaking down the drug.

Parental methods are the most direct, reliable, and rapid route of absorption. This method of administration includes intradermal, subcutaneous, intramuscular (IM) and intravenous (IV). The actual site of administration depends on the type of drug, its action, and the client. Another route of medication include respiratory tract by inhalation, sublingual, buccal and topical.

Transportation

The second stage of metabolism refers to the way in which a drug is transported from the site of introduction to the site of action. When the body absorbs a drug, a portion of the drug binds to plasma protein and may compete with other drugs for this storage site. Another portion is transported in "free" form through the circulation to all parts of the body. It is the "free" drug that is pharmacologically active. As the free drug moves from the circulatory system, it crosses cell membranes to reach its site of action. As the drug is metabolized and excreted, protein bound drug is freed for action. Lipid-soluble drugs are distributed to and stored in fat and then released slowly in to the bloodstream when drug administration is discontinued. The amount of the drug that is distributed to body tissues depends on the permeability of the membranes and blood supply to the absorption area.

Biotransformation:- The third stage of metabolism takes place as the drug, which is a foreign substance in the body; is converted by

enzymes into a less active and harmless agent that can be easily excreted. Most of this conversion occurs in the liver, although some conversion does take place in the lungs, kidney plasma and intestinal mucosa

Excretion:- The final stage in metabolism takes place when the drug is changed in to an inactive form or excreted from the body. The kidneys are the most important route of excretion because they eliminate both the pure drug and the metabolism of the parent drug. During excretion, these two substances are filtered through glomeruli, secreted by the tubules, and either reabsorbed through the tables or directly excreted. Other routes of excretion include the lungs (which exhale gaseous drugs). Feces, saliva, tears, and mother's milk

Factors Affecting Drug metabolism

Many factors affect drug metabolism, including personal attributes, such as body weight, age, and sex, physiologic factors, such as state of health or disease processes, acid-base and fluid and electrolyte balance; permeability; diurnal rhythm; and circulatory capability.

Genetic and immunologic factors play a role in drug metabolism, as do psychologic, emotional and environmental influences, drug tolerance, and cumulation of drugs. Responses to drugs vary, depending on the speed with which the drug is absorbed into the blood or tissues and the effectiveness of the body's circulatory system.

Source and Naming of Drugs

The primary natural sources from which drugs are compounded are roots, bark, sap, leaves, flowers, and seeds of plants, other natural sources include animal organs or organ cells secretions, and mineral sources. Synthetic drugs, such as sulfonamide, are made in a laboratory from chemical substances.

Most drugs are given chemical, generic, and trademark names. The generic name is shorter and simples and reflects the chemical fancily to which the drug belongs. The trade name is the most common way in which the drugs are known. Once a drug is registered with a brand name, only its legal owners can manufacture the drug.

Drug Administration

The route of drug administration influences the action of that drug on the body. To obtain a systemic effect, a drug must be absorbed and transported to the cells or tissues that respond to them. How a drug is administered depends on the chemical nature and quantity of the drug, as well as on the desired speed of effect and the overall condition of the client.

Individual drugs are designed to be administered by specific route-be sure to check drug labels for the appropriate route of administration. Common routes of administration to obtain systemic effects include the following: oral, sublingual, rectal, trans dermal, and parentral. Parentral ingections are commonly administered in these sites: intradermal, subcutaneous, IM and IV.

Safety Procedures

When you administer drugs, you must follow certain safety roles, which are also known as “the Five Rights.”

These rules should be carried out each time you give a drug to a client.

The Five Rights

- Right medication. Compare drug card, medication sheet or drug kardex (client’s medication record) three times, with label on drug container. Know action, dosage and method of administration. Know side effects of the drug.
- Right client, check the client’s identification-Name, Age, Bed number, and ward/door number.
- Right time
- Right method/route of administration
- Right amount/dosage- cheek all calculations of divided dose with another nurse.

Application of Nursing Process

- Assessment /Data base
- Assess route for drug administration
- Assess specific drug action for cheat
- Observe for sign and symptoms of side effects or adverse reactions
- Assess need for and accuracy of drug calculation

Planning /setting objectives

- To administer medications using correct route
- To determine appropriate drug actions
- To identify when side effects or adverse reactions occur
- To accurately calculate drug dosages.

Implementation /Intervention

- Preparing for drug administration
- Creating a rapport with the patient
- Assembling necessary equipment
- Converting medication
- Calculating dosage as appropriate
- Following the five rights
- Using the unit Dose system
- Using the Narcotic control system

Evaluation /Epected out comes

- Medications are administered by correct route
- Medication action and side effects are identified
- Drug dosages are calculated accurately

Different Routes of Drug Administration

- ❖ Oral
- ❖ Topical
- ❖ Parentral
  - Intradermal
  - Subcutaneous
  - Intramuscularly

- Intravenous

❖ Rectal

❖ Vaginal

❖ Inhalation

I. Oral Administration

Definition: Oral medication is drug administered by mouth

Purpose

a. When local effects on GI tract are desired

b. When prolonged systemic action is desired

Contra- indications

1. For a patient with nausea & vomiting, unconscious patients.
2. When digestive juices inactivate the effect of the drug.
3. When there is inadequate absorption of the drug, which leads to inaccurate determination of the drug absorbed.
4. When the drug is irritating to the mucus membrane of the alimentary canal.

Type of Oral Medication

1. Lozenges (troches) - sweet medicinal tablet containing sugar that dissolve in the mouth so that the medication is applied to the mouth and throat

2. Tablets - a small disc or flat round piece of dry drug containing one or more drugs made by compressing a powdered form of drug(s)
3. Capsules - small hollow digestible case usually made of gelatin, filled with a drug to be swallowed by the patient.
4. Syrups - sugar containing medicine dissolved in water
5. Tinctures - medicinal substances dissolved in water
6. Suspensions - liquid medication with undissolved solid particles in it.
7. Pills and gargle - a small ball of variable size, shape and color some times coated with sugar that contains one or more medicinal substances in solid form taken in mouth.
8. Effervescence - drugs given of small bubbles of gas.
9. Gargle - mildly antiseptic solution used to clean the mouth or throat.
10. Powder - a medicinal preparation consisting of a mixture of two or more drugs in the form of fine particles.

Equipment

- Tray
- Towel

- A bowl of water for used mediation cup
- Measuring spoon
- A Jug of water (boiled water)
- Chart and medication card
- Ordered medication
- Straw if necessary

Procedure

- Prepare your tray and take it to the patient's room
- Begin by checking the order
- Read the label 3 times
- Place solution and tablets in a separate container.
- If suspension, shake the bottle well before pouring
- Take it to the pt's bedside
- Keep the medication in site at all time
- Identify the patient carefully using all identification variables. (Pt's name, bed number…)
- Remain with the pt. until each medicine is swallowed
- Offer additional fluid as necessary unless contra-indicated
- Record the medication given, refused or omitted immediately.
- Take care of the equipment & return them to their proper places.
- Wash your hands.

Note

1. Remember the 5 R's
   - ❑ Right patient
   - ❑ Right medication
   - ❑ Right route
   - ❑ Right dose
   - ❑ Right time
2. Always keep the bottle tightly closed.
3. Clean and keep the label of the bottle clear.
4. Keep medication away from light.
5. Cheek their expiration date.
6. Keep the rim of the bottle clean.
7. Give your undivided attention to your work while preparing and giving medications.
8. Make sure that a graduate nurse checks some potent drugs.
9. Never give medications from unlabeled container
10. Never return a dose once poured from the bottle.
11. Check your patient's vital sign may be necessary before and after administrating some drugs e.g. digitals, ergometrine.
12. Never give medicine that some one poured or drawn.
13. Never leave medicine at bed side of a patient and within reach of the children

II. Suppository

Purpose

- To produce a laxative effect. (bowel movement),suppository is used frequently instead of enema since it is inexpensive.
- To produce local sedative in the treatment of hemorrhoids or rectal abscess.
- To produce general sedative effects when medications cannot be taken by mouth
- To check rectal bleeding

Equipment

- Suppository (as ordered)
- Gauze square
- Rectal glove or finger cot
- Toilet paper
- Receiver for soiled swabs
- Bedpan, if the treatment is in order to produce defection.
- Screen
- Mackintosh and towel

Procedure

1. Check medication order.
2. Review client's medical record for rectal surgery/ bleeding.
3. Wash hands.
4. Prepare needed equipment and supplies.
5. Apply disposable gloves.

6. Identify client.
7. Explain procedure to client.
8. Arrange supplies at client's bedside.
9. Provide privacy.
10. Position client in Sims' position.
11. Keep client draped, except for anal area.
12. Examine external condition of client's anus. Palpate rectal walls.
13. Dispose of gloves, if soiled, and reapply new gloves.
14. Remove suppository from wrapper and lubricate rounded end.
15. Lubricate gloved finger of dominant hand.
16. Ask client to take slow, deep breaths through mouth and to relax anal sphincter.
17. Retract client's buttocks with nondominant hand.
18. With index finger of dominant hand, gently insert suppository through anus, past the internal sphincter, and place against rectal wall, 10 cm for adults or 5 cm for children and infants.
19. Withdraw finger and wipe client's anal area clean.
20. Remove and dispose of gloves.
21. Wash hands.
22. If suppository contains a laxative or fecal softener, be sure that client will receive help to reach bedpan or toilet.
23. Keep client flat on back or on side for 5 minutes.
24. Return in 5 minutes to determine if suppository has been expelled.

25. Observe client for effects of suppository 30 minutes after administration.
26. Record medication administration.

Kinds of Suppositories Used:

1. Bisacodyl (Dulcolax) is commonly ordered for its laxative action. It stimulates the rectum and lubricates its contents. Normally 15 minutes is needed to produce bowel movement.
2. Glycerin or suppository for bringing about bowel movement. If soap suppository is used cut a splinter of soap 2-6 cm. loch and wash it in hot water to smooth the rough edges before administration.
3. Bismuth - for checking diarrhea.
4. Opium, sodium barbital etc. for sedation

III. Parentral Drug Administration

A. Intradermal Injection

Definition: It is an injection given into the dermal layer of the skin (corneum)

Purpose

For diagnostic purpose

a. Fine test (mantoux test)
b. Allergic reaction

For therapeutic purpose

c. Intradermal injection may also be given like in vaccination

Site of Injection

- The inner part of the forearm (midway between the wrist and elbow.
- Upper arm, at deltoid area for BCG vaccination

Equipment

- Tray
- Syringe & needle (sterile)
- Receiver
- Drug (to be injected)
- File
- Alcohol swab
- Marking pen
- Water in the bowel to rinse syringe and needle

Procedure

- Take equipment to the patient's side
- Explain procedure to patient
- Get hold of the arm & locate the site of injection.
- Clean the skin with swab and inject the drug about 0.1. 0.2 inch in to the epidermis after the bevel of the needle is no longer visible. Don't massage the site.
- Check for the immediate reaction of the skin (10-15 minutes later for tetanus, 20-30 minutes later for penicillin)
- If it is for tine test, mark the area
- Chart the data and time of the administration of the drug.
- Take care of the equipment & return to their places.

- Do not forget to do the reading after 72 hours if it is for fine test (tuberculin test)
- Document about the procedure

B. Sub - Cutaneous Injection

Definition: Injecting of drug under the skin in the sub- cutaneous tissue, (under the dermis)

Purpose:

- To obtain quicker absorption than oral administration
- When it is impossible to give medication orally

Equipment

- Tray
- Sterile syringe & needle (disposable)
- Alcohol swabs
- Medication
- File
- Medication card and patient chart
- Receiver
- Water in a bowel
- Disposing box

Site of Injection

- Outer part of the upper arm
- The abdomen below the costal margin to the iliac crest.
- The anterior aspect of the thigh

Procedure

- Take equipment to the pt's bed side or room
- Explain the procedure to the patient
- Draw your medication
- Expel the air from the syringe
- Clean the site (usually it is in upper arms, thighs or abdomen)
- Grasp the area between your thumb & forefinger to tense it.
- Insert the needle elevate about 45^0 - 60^0 angle.
- Pierce the skin quickly & advance the needle
- Aspirate to determine that the needle has not entered a blood vessel
- Inject the drug slowly.
- After injecting withdraw the needle and massage the area with alcohol swab.
- Chart the amount and time of administration immediately.
- Take care of the equipment- wash, sterilize and return to its place
- Watch for undesired reaction (side effect of the drug) etc.

Note.

If repeated injections are given, the nurse should rotate the site of injection so that each succeeding injection is about 5 cm away from the previous one.

C. Intera- Muscular Injection

Definition: It is an introduction of a drug into a body's system via the muscles.

Purpose

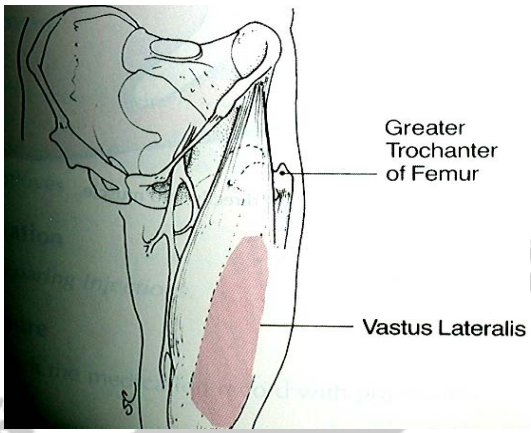
- To obtain quick action next to the intra- venous route
- To avoid an irritation from the drug if given through other route.

Equipment

- Tray
- Ordered drug (ampoule, vial)
- Sterile syringes and needle in a container
- Alcohol swab
- Receiver
- A bowl of water for used syringes and needle
- File
- Sterile jar with sterile forceps
- Chart

Sites for I.M. Injection

- Ventrogluteal muscle



A.

- Dorsogluteal muscle
- Deltoid muscle
- Vastus Lateralis

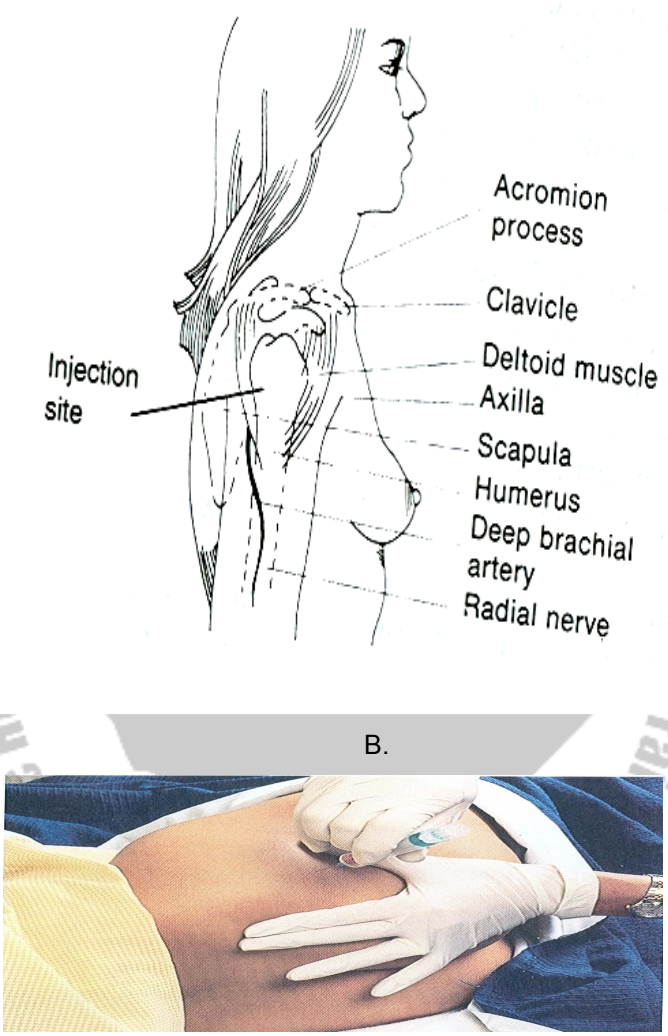


Figure 10IM injection sites A : Vastus lateralis, B. Deltoid muscle, C. Gluteal Maxmus

Procedure

- Do the ABC of the procedure**.**
- Prepare tray & take it to the patien's room

- Prepare the medication
- Draw the medicine
- Expel the air from the syringe
- Choose the site of injection (the site for intra- muscular)
- Using the iliac crest as the upper boundary divided the buttock into four. Clean the upper outer quadrant with alcohol swab:
- Stretch the skin and inject the medicine
- Draw back the piston (plunger) to check whether or not you are in the blood vessel (if blood returns, withdraw and get a new needle & reinject in a different spot)
- Push the drug slowly into the muscle
- When completed, withdraw the needle and massage the area with swab gently to and absorption.
- Place the patient comfortably
- Take care of the equipment you have used & return to their places
- Chart the amount, time route and type of the medicine
- Check the patient's reaction

Note:

1. The needle for i.m. Injection should be long
2. Strict aseptic technique should be observed throughout the procedure.
3. Injection should not be given in areas such as inflamed, edematous, those containing moles and pus.

D. I.V. INJECTIONS

Definition: It is the introduction of a drug in solution form into a vein. Often the amount is not more than 10.ml. at a time.

Sites for IV injection

1. Dorsal Venous network
2. Dorsal metacarpal Veins
3. Cephalic Veins
4. Radial vein
5. Ulnar vein
6. Baslic vein
7. Median cubital vein
8. Greater saphenous vein

Purpose

- When the given drug is irritating to the body tissue if given through other routes.
- When quick action is desired.
- When it is particularly desirable to eliminate the variability of absorption.
- When blood drawing is needed (exsanguinations)

Equipment

- Tray
- Towel and rubber sheet
- Sterile needle and syringes in a sterile container

- Sterile forceps in a sterile container
- Alcohol swabs
- File
- Medication
- Tourniquet
- Receivers (2)
- Treatment Chart
- Glove

Procedure

- Prepare your tray & the medication
- Explain the procedure to the patient
- Position the patient properly
- Place rubber and towel under his arm(to protect the bed linen)
- Expose the arm and apply tourniquet
- Ask pt. To open and close his fist.
- Palpate the vein and clean with alcohol swab the site of the injection (Which is mainly the mid cubital vein of the arm)
- Clean with a circular motion; proceed from center of the site outward.
- Hold the needle at about 45^0 angles in line with the veins.
- Puncture the vein and draw back to check whether you are in the vein or not.

  (Blood return should be seen if you are in the vein)
- Once you know that you are in the vein, release the tourniquet and gently lower the angle of the needle

- When it is nearly paralleled to the vein and instills the medications. Give very slowly unless there is an order to give it fast (Normally 40-60 drops is given in 1 minute).
- Check the pt's pulse in between. Any complaint from the patient should not be ignored.
- Apply pressure over the site after removing the needle to prevent bleeding. Tell patient to flex his elbow.
- Watch the patient for few minutes before leaving him.
- Remove your equipment
- Put the pt. In a comfortable position
- Wash, sterilize and place the equipment in order.
- Chart the medication given the amount, time & the reaction of the pt.

Note:

1. Have a bowl of water to rinse the needle used immediate
2. Make yourself as well as the pt. Comfortable before giving injection.
3. It is the fastest way of drug administration
4. Never recup a used needle

E. Intravenous Therapy

Definition: It is the administration of a large amount of fluid into the system through a vein.

Purpose

- To maintain fluid & electrolyte balance
- To introduce medication particularly antibiotics.

Equipment

- IV fluid as ordered
- Sterile syringe & needle
- Rubber & towel
- Receiver
- Alcohol swabs
- Arm board
- Bandage & scissors
- Tourniquet
- I.V pole
- Adhesive tape
- Medication chart

Preparation of the Patient

Since an infusion therapy takes several hours to complete, the patient should first be made comfortable.

Procedure

- Take equipment to the patient's bedside
- Explain the procedure to the patient. Be sure you have right patient.
- Remove air form the tubing

- Place rubber & towel under the arm
- Apply tourniquet about 3 c.m. above the intended site of entry.
- Observe & palpate for suitable vein
- Cleanse the skin with alcohol swabs thoroughly & place the swab used thumb the retract down the vein & soft tissue 4 c.m. below the intended site of injection.
- Hold needle at 45^0 angle line with the vein
- Pierce the skin and puncture the vein
- Check if you are in the vein by drawing back with the syringes. (blood returns if you are in the vein)
- Release the tourniquet gently
- Start the flow of solution by opening the clamp.
- Support needle with sterile gauze or sterile cotton balls If necessary to keep it in proper position in the vein
- Anchor the I.V. tubing with the adhesive tape to prevent pull on the needle.
- Place arm board or splint under the arm and bandage around.
- Adjust the rate of flow
- Rate of flow is regulated by the following formula.

Number of ml. of sol's number of drops in a ml.

Number of hrs. over which sol. is to be administered x 60 minutes

1ml = 15 drops

E.g. if 1000ml of 5% D/w is to run for 24 hrs, how many drops per minutes should it run?

$$\frac{1000 \text{ ml.} \times 15 \text{ gtt/ml}}{24 \times 60 \text{ min.}} = \frac{1000 \times 15 \text{ gtt}}{24 \times 60 \text{ min.}} = 10 \text{ gtt/min}$$

Note:

1. The arm board should be long enough to extend beyond the wrist and elbow joint.
2. Board should be padded
3. Infusion bottle should be labeled with the date, time infusion is started, drops per minute, and any added medications. If more than one bottle as used in 24 hrs, it should be labeled as bag 1,2,3, and so on.
4. Extend the arm in the most comfortable position.
5. Usual areas used for intravenous infusion are:
   a) The median basilic vein on the inner surface of the arm.
   b) A vein on top of the foot
   c) In an infant the jugular vein and the scalp vein

F. Blood Transfusion

Definition: It is the giving of blood to a patient through a vein

Purpose

- To counteract severe hemorrhage and replace the blood loss.
- To prevent circulatory failure in operation where blood loss is considerable, such as in rectal resection hysterectomy and arterial surgery.

- In severe burns to make up for blood lost by burning but only after plasma and electrolytes have been replaced.
- For treatment of severe anemia due to cancer, marrow aplasia and similar conditions.
- To provide clotting factors normally present in blood, which may be absent as a result of disease.

Equipment

- Bottle containing blood, with the patient name, blood group and Rh. Factor and expiry date.
- Blood giving set
- Sterile syringes and needle
- Alcohol swabs
- Sterile gauze
- Rubber sheet and towel
- Tourniquet
- Arm splint
- Bandages and scissors
- Adhesive tape
- Receiver for dirty swabs
- I.V pole (stand)
- Patient's chart.

Procedure

- Explain procedure to patient
- Before blood transfusion is administered, the nurse has to check the blood group & RH- factor if cross match of the donor's & the recipient's blood is done and is compatible. And also check for HIV other blood born pathoges.
- Prepare the tray with necessary items
- Before taking it to the patient's room, check the patient's name, hospital number, bed number, blood group, Rh. Factor and the expiry date with a 2nd nurse or a doctor.
- Blood should be used within 21 days of its withdrawal date, if sodium citrate is used it can be used until 36 days.
- Take it to the pt's room
- Hang the bottle & remove the air from the tubing
- Put pt. in a comfortable position.
- Place rubber & towel under the arm
- Check the vital signs before administering
- Choose the vein
- Apply tourniquet
- Clean the skin & feel for a distended vein & clean again.
- Puncture the vein with the needle (the needle here should be short and wide so that it does not cause occlusion easily)
- After you make sure that you are in the vein release tourniquet & open the clamp.
- The drop/minute at the beginning should be very slow
- Watch patient closely for any reaction

- If there is no reaction from the patient regulate the rate of flow according to the patient's conditions & the order.
- Splint the arm & position it comfortably.
- Remove the equipment you have used, wash and return to its proper place.
- Record the time you started the blood & any other pertinent information.
- Check pt. frequently.

Note:

1. Always member to have anti- histamine injection ready in case a patient has reaction from the blood.
2. Be familiar with the most usual symptoms of blood reactions which are:-

Immediate Reaction:

a) Headache
b) Backache
c) Chills
d) Pyrexia
e) Rash of the skin (urticaria)

Late Reaction

a) Dyspnea
b) Renal shut down in severe cases
c) Heamaturia
d) Chest pain

e) Rigor (rigidity)

Nursing Interventions in Transfusion Reaction

Reactions following blood transfusion may occur for various reasons. Patient must be informed that the supply of blood is not completely risk-free but that it has been tested carefully. Nursing management is directed toward preventing complications and promptly initiating measures to control any complications that occur. The following steps are taken so that a diagnosis may be made regarding the type and severity of the reaction:

- The transfusion set is disconnected, but the intravenous line is kept patent with a normal saline solution (0.9%) in case intravenous medication should be needed rapidly.
- The blood container and tubing are saved, not discarded. They are sent to blood bank for repeat typing and culture. The identifying tags and numbers are verified.
- The symptoms are treated as prescribed and vital signs are monitored.
- The patient blood is drawn from plasma hemoglobin, culture, and retyping.
- A urine sample is collected as soon as possible and sent to laboratory for a hemoglobin determination. Subsequent voiding of urine should be observed.
- The blood bank is notified that a suspected transfusion reaction has occurred.
- The reaction is documented according to the institution's policy.

G. Cut Down

Definition - Dissection of a vein for inserting I.V cannula or needle.

Purpose

- When vein puncture is difficult
- When pro longed, continuos infusion is needed
- When rapid infusion is important and emergency situation combine these indications.

Equipment

Sterile

- Dressing forceps (1)
- Cotton balls in a gallpot
- Solution for cleansing
- Gloves
- Hole sheet (Fenestrated towel)
- Syringe and needle
- Scalpel (surgical knife)
- Mosquito forceps (3)
- Aneurysm needle (1)
- Silk
- Intravenous cannula or vein flow (2)
- Small, straight scissors (1)
- Small, curved scissors (1)
- Needle holder (1)
- Round needle (1)

- Cutting needle (2)
- Tissue forceps (1)
- Gauze (slit at one end)
- Probe
- Fine dissecting forceps (1)
- Local anesthesia

Clean

- Receiver of dirty swab
- Stand light, if available
- Adhesive tape (plaster)
- Dressing scissors

Procedure

- Bring equipment to the bedside of the patient
- Explain procedure to the patient
- Shave the area, if needed
- Position the patient properly
- The nurse will then open the set and pour the cleaning lotion in to the galipot for the doctor
- The doctor then scrub his hands, put on gloves, clean and drape the area, he will insert the I.V
- The channel is securely tied with silk and skin is closed
- The nurse dresses the site and secure it with adhesive plaster
- Remove all equipment, wash and send for sterilization

Administering Vaginal Medications

Purpose

- To treat or prevent infection
- To remove an offensive or irritating discharge
- To reduce inflammation
- To relieve vaginal discomfort

Equipment

- Prescribed vaginal suppository
- Client's applicator (should be kept in client's room)
- Clean gloves

1. Check medication order.
2. Wash hands.
3. Prepare equipment and supplies.
4. Identify client.
5. Inspect client's external genitalia and vaginal canal.
6. Assess client's ability to manipulate applicator and position herself.
7. Explain procedure to client.
8. Arrange supplies at client's bedside.
9. Provide privacy.
10. Assist client to dorsal recumbent position.
11. Keep client's abdomen and lower extremities draped.
12. Apply disposable gloves.
13. Provide adequate lighting.
14. Insert suppository:

A. Take suppository from wrapper and lubricate smooth or rounded end.

B. Lubricate gloved finger of dominant hand.

Offer client perineal pad.

15. Apply cream or foam:

A. Fill applicator as directed.

B. Retract client's labial folds with nondomi-nant gloved hand.

C. With dominant gloved hand, insert applicator 5 to 7.5 cm; push plunger.

D. Withdraw applicator and place it on paper towel. Wipe away lubricant from client's ori-fice and labia.

E. Wash applicator and store for future use.

16. Remove and discard gloves.

17. Wash hands.

18. Instruct client to remain flat on her back for at least 10 minutes.

20. Inspect condition of client's vaginal canal and external genitalia between applications.

21. Record medication administration.

C. Retract client's labial folds with nondomi-nant gloved hand. D. Insert rounded end of suppository 7.5 to 10 cm along posterior wall of vaginal canal.

E. Withdraw finger and wipe away lubricant from client's orifice and labia.

Administering Ophthalmic Medications

Purposes:

- **Instillation**

- To provide an eye medication the client requires

- **Irrigation**

- To clear the eye of noxious or other foreign material or excessive secretion in the preparation for surgery

1. Review prescriber's medication order.
2. Assess condition of client's external eye structures.
3. Determine whether client has any known allergies to eye medications. Ask if client is allergic to latex.
4. Determine whether client has any symptoms of visual alterations.
5. Assess client's level of consciousness and ability to follow directions.
6. Assess client's knowledge regarding drug therapy and desire to self-administer medication.
7. Assess client's ability to manipulate and hold eye dropper.
8. Explain procedure to client.
9. Wash hands.
10. Arrange supplies at client's bedside.
11. Apply clean gloves.
12. Ask client to lie supine or to sit back in chair with head slightly hyperextended.
13. Wash away any crusts or drainage along client's eyelid margins or inner canthus. Soak any crusts that are dried and difficult to remove by applying a

damp washcloth or cotton ball over eye for a few minutes.

14. Hold cotton ball or clean tissue in nondominant hand on client's cheekbone just below lower eyelid.
15. With tissue or cotton ball resting below lower lid, gently press downward with thumb or fore-finger against bony orbit.
16. Ask client to look at ceiling.
17. Instill eye drops while explaining steps to client:
    A. With dominant had resting on client's fore-head, hold filled medication eye dropper or ophthalmic solution approximately 1 to 2 cm above conjunctival sac.
    B. Drop prescribed number of medication drops into conjunctival sac.
    C. If client blinks or closes eye or if drops land on out lid margins, repeat procedure.
    D. For drugs that cause systemic effects, with a clean tissue apply gentle pressure with your finger and clean tissue on the client's naso-lacrimal duct for 30 to 60 seconds.
    E. After instilling drops, ask client to close eye gently.
18. Instill eye ointment:

A. Ask client to look at ceiling.

B. Holding ointment applicator above lower lid margin, apply thin stream of ointment evenly along inner edge of lower eyelid on conjunc-tiva from inner canthus to outer canthus.

C. Have client close eye and rub lid gently in circular motion with cotton ball, if rubbing is not contraindicated.

19. Intraocular disk procedures:

A. Application:

(1) Wash hands.

(2) Put on gloves.

(3) Open package containing disk. Gently press fingertip against disk so it adheres to finger. Position convex side of disk on fingertip.

(4) With other hand, gently pull client's lower eyelid away from the eye. Ask client to look up.

(5) Place disk in the conjunctival sac so that it floats on the sclera between the iris and lower eyelid.

(6) Pull client's lower eyelid out and over disk.

B. Removal:

(1) Wash hands.

(2) Put on gloves.

(3) Explain procedure to client.

(4) Gently pull on client's lower eyelid to expose disk.

(5) Using forefinger and thumb of opposite hand, pinch disk and lift it out of client's eye.

20. If excess medication is on eyelid, gently wipe eyelid from inner to outer canthus.

21. If client had an eye patch, apply clean patch by placing it over affected eye so entire eye is covered.

Tape securely without applying pressure to eye.

22. Remove gloves.
23. Dispose of soiled supplies in proper receptacle.
24. Wash hands.
25. Note client's response to instillation. Ask if any discomfort was felt.
26. Observe client's response to medication by assessing visual changes and noting any side effects.
27. Ask client to discuss drug's purpose, action, side effect, and technique of administration.
28. Have client demonstrate self-administration of next dose.
29. Record drug administration and appearance of client's eye.
30. Record and report and undesirable side effects.

Administering Ear Medications

Purpose:

To relieve pain

To treat infection

To better visualize during examination

Equipment

- Disposable tissues
- Medication
- Cotton ball
- Gloves

Procedure/Steps

1. Check the medication order against the original physician's order.
2. Wash hands carefully.
3. Prepare the medication following the "five rights."
4. Proceed to the client's bed side and identify the client.
5. Put on gloves
6. Ask the client to lie on the side of unaffected ear.
7. Remove excess drainage with a dry wipe.
8. Expose the external ear canal by properly adjusting the client's ear lobe. For adults, pull the lobe up, back, and outward. For children, pull the lobe down and back.
9. (a) Hold the dropper or the tip of the squeeze bottle above the opening of the external auditory canal. Allow the prescribed number of drops to fall on the side of the canal.

   (b) Do not touch any part of the ear with the dropper or squeeze bottle during administration.
10. Instruct the client to remain the side-lying position for 5-10 minutes with the affect ear upward.

11. If the procedure is ordered for both ears, allow 5-10 minutes between instillation. Report the above steps for the other ear.
12. Dispose of gloves and wash hands.
13. Document the procedure.

H. Inhalation

Definition: Inhalation is the act of drawing in of gas vapor or steam into the lungs for therapeutic purposes it could be in dry, moist or vapour form.

i. Oxygen Administration:

Purpose

To provide and maintain a normal supply of o_2 for blood, and tissues. o_2 may be administered in three ways.

1. By mask
2. Nasal Catheter
3. Tent.

1. Giving O_2 by mask

There are many kinds of masks used for O_2 administration the common ones are:

1. The venture mask
2. The B.L.B. masks (Boothby. Lovelace & Bulbulain)

The venture mask gives a controlled amount of O_2 i.e. it is not high to cause respiratory depression & it is sufficient to relieve anoxia. It gives 24-35% of O_2

The B.L.B mask provides an oxygen concentration of 90% with the flow meter set at 7 liters/minute. This kind of mask allows the patient to eat, drink and to expectorate. If the patient cannot breath through his nose, the B.L.B mask should not be used.

Equipment

- A cylinder of O_2 with a reducing value and pressure tubing to be connected with the O_2 cylinder.
- Mask
- Safety pin to secure the tubing to the bed linen
- Tissue paper to clean the nostrils with. If the patient is unconscious, a tray containing a galipot of saline or water, wooden applicator and receiver for soiled applicator is necessary in order to clean the nostrils

Procedure

1. The adjustment is turned on before bringing the cylinder to the bedside.
2. Explain treatment to pt.
3. Bring equipment to the bedside
4. Ask him to clean his nostril to avoid obstruction (if well enough)
5. Connect the mask to tubing and open the fine adjustment to the required rate of flow. Then apply the mask to the patient's face making sure that it rests comfortably on the pt's face. See

that the tubing is secured to the bed linen by means of safety pin. Stay with the patient till he is reassured if it is his first time to be on oxygen therapy.

2. Giving oxygen by nasal catheter.

There are different kinds of catheters,

a) A fine catheter

b) A spectacle frame, which carries two, places of rubber tubing and is worn by the pt.

c) Two soft rubber catheters connected by ***y- shaped*** connection to the tube on O_2 apparatus.

Equipment

- Oxygen cylinder with regulating valve and pressure tubing
- Wolf's bottle
- Glass connection
- Fine catheters, lubricant, plaster
- Safety pin
- Tray containing a galipot of saline or water. Receiver for soiled applicators.

Procedure

1. Procedure is the same as giving oxygen by mask: (Procedure 1-4)
2. Connect the fine catheter with the pressure tubing. Turn on the fine adjustment to the required rate of flow the maximum liter flow being 6-7 litter /minute.

3. Catheter is lubricated preferably with water and passed backward into pharynx till the tip of the catheter is opposite the uvula. The catheter can also be inserted by measuring the distance from the patient's nose to his ear lobe. It is then taped in place. Never force catheter against an obstruction.

Note:

Oxygen catheter are removed every 8 hrs. and a clean catheter is inserted into the other nostril. Patient's receiving oxygen by catheter requires special mouth and nose care since the catheter tends to irritate the mucous membrane. Oxygen dries and irritates mucous membrane, therefore, should be passed through water (Humidified) before it is administered by catheter. The advantage of administration of oxygen by catheter is the freedom of movement that it gives to patients receiving oxygen. By this method patient can obtain about 50% concentration of oxygen.

3. Oxygen tent

Purpose:

a) To keep patient in high oxygenation environment.
b) Whenever the other means are not possible.

Equipment

1. Transparent oxygen tent and its apparatus fitted with oxygen
2. Ice if the apparatus is with out refrigerator device.
3. Hanger for the tent
4. Room thermometer if needed

5. No smoking sign for the unit

Procedure

1. Remove all electrical appliances from the room as this may produce sparks.
2. Post sign of no smoking on many places in the unit
3. Prepare and check if the applicator is working properly.
4. Bring the oxygen unit to the bedside and fix the tent on the hanger.
5. Close all appliances of the tent: place ice if the apparatus is without refrigeration device.
6. Tuck the side of the hold of tent under the mattress as far as they will go.
7. Fill the tent with 12-15 liters of oxygen 40-60% concentration for the first half hour.
8. After the first half hour regulate the flow of oxygen to 6-10 liters or as ordered by the doctor until the treatment is completed.
9. Check temperature indicator frequently and adjust to 18^0C-22^0C.
10. Record state of patient and time started and the flow of the oxygen.

Precautions to be taken when Oxygen is used

1. Oxygen supports combustion. There fore it is essential for the patient's safety their is no smoking within 3 meters of oxygen equipment. Lighted matches, cigarettes, electric lights, nylon

clothing, electric pads, bells mechanical toys should be forbidden.

2. Alcohol must not be applied to the pt's skin
3 The catheter tip and the cylinder itself must not be lubricated with
   Vaseline or oil or any kind
6. Cylinders must be handled carefully as the oxygen is under pressure.
7. The fine adjustment should always be closed when the main tap is turned on.
8. Check that there is no obstacle in the pt's airway before firing oxygen in order to prevent pt. From suffocation.
9. A rate of 2-liters/ minute is commonly used when oxygen used in case of emergency instead of free air. In the case of asphyxia liter/min may be needed.
   Protect patient from asphyxia, inspecting regularly pressure gauge and flow meter and noting pulse, respiration, color, mental state and necrosis from carbon dioxide.

ii. Steam Inhalation

Definition: It is the intake of steam alone or with medication through the nose or mouth

Purpose

1. In order to produce a local effect on the upper respiratory passage during cold, sinusitis, laryngitis, bronchitis etc. common drugs used are frier balsam (tincture of benzoin compound, eucalyptus. Menthol, camphor)

2. To allay spasm e.g. Asthma, angina pectoris
3. To increase circulation in the lungs by increasing or decreasing the secretion of the bronchi.
   E.g. ammonia inhaled in cases of fainting and syncope stimulated the respiratory center and heart action.
4. To moisten secretions e.g. Tracheotomy

There are two Types of Inhalation

1. Intermittent (interrupted) e.g. Nelson's inhaler.
2. Continues method e.g. steam tent.

1. Nelson's Inhaler

Equipment

- Nelson's inhaler with the mouth piece
- Cover for the inhaler (blanket or towel)
- A bowl or saucepan to carry the inhaler
- Face towel to wipe the face as patient required
- Gauze can be use around the mouthpiece to prevent burning of the lips.
- A tray. Large enough, to carry the inhaler to take it to the bedsides.
- A measuring jug with water which is 82^0C
- The drug ordered might be eucalyptus, tincture of benzene (about 4 cc).

Procedure

- Inhaler should be warmed and glass mouthpiece boiled
- Measure the drug as ordered. Either point in the graduate measure 90 cc of cold water and 500 cc of boiled water to bring the temperate 82^0c or half by half or pour half point (300cc) of boiling water into the inhaler than 5 cc of tincture of benzene or any other drug ordered.
- Then add 300 cc water making sure that the temperature of water in the inhaler comes to 82^0C. This is done in order to have a good mixture of the drug. The level of the fluid should not be above the spout.
- Fix the mouthpiece firmly in the inhaler in direction opposite to the air inlet and cover the inhaler with blanket or towel
- Close windows.
- Prepare the patient usually in a sitting - up position making sure that he/she is well supported.
- Then put inhaler on a saucepan on the tray.
- Place the tray on the over- bed table or on his knees in such a way that he can bend over the inhaler easily.
- Put the spout for the escape of steam away from him.
- Cover his head with blanket.
- Tell the patient to breath in by putting his lip to the mouth piece which may be protected by a piece of gauze, and breath out by removing his lips for a moment from the mouth piece

- ❖ The treatment can take from 5-10 minutes after which the patient should be kept warm and comfortable for some time.

N.B :

1. If a Nelson's inhaler is not available a wide- mouthed jug may used. The patient should be covered up to the waist with a balance from a canopy, or the mouth of the jug may be covered with a towel to make the opening small enough for the patient to put his nose and mouth (not eyes) on it.
2. For irrational, helpless patients, stay with them throughout the procedure.
3. Report the amount and nature of any sputum or discharge.

Care of Equipment after use

- Pour out the water from the inhaler (not onto a sink)
- Wash the inhaler with hot water
- Boil the mouth piece

Emergency tray and Trolley

List of Emergency Drugs.	***List of Emergency Equipment***
• O_2	- Tourniquet
• Morphine sulfate	- O^2 mask or nasal catheter
• Aramine	- plaster
• Adrenalin(Epinephrin.)	- Dressing scissors
• Levophed	-Arm Board
• Phenergan	- Small makintosh " towel"

- Aminophylline - Tongue depressor
- Allercur - Mouth gag
- Nor adrenaline - Air way
- Carmine (Nikethamide) - suction machine
- Lasix - Files
- Syringes and needles - Container with alcohol
- Digoxin - Receiver
- N_a HCO_3 (Sodium bicarbonate) - Bandage
- Swabs - Levin's tube
- Vitamin k - Ned blacks
- 0 .9% Normal Saline
- 5% D/w with complete set
- Largactil
- Diazepam
- Ergometrine
- Kcl (potassium chloride)
- 40% dextrose

Study Questions

1. Which one of the following rout of drug administration has fastest action?
   a. Oral
   b. Subcutaneous
   c. Intravenous
   d. Rectal
2. Mention two indications for oral drug administration
3. State the 5 Rs during drug administration.

4. Which one of the following site of injection most preferred for young children?
   a. Vastus lateralis
   b. Ventrogluteal
   c. Deltoid muscle
   d. Dorsogluteal
5. Explain the difference between intravenous injection and intravenous infusion.
6. List at least three immediate complications of blood transfusion.
7. Define inhalation

UNIT SEVEN

CHAPTER FOURTEEN

WOUND CARE

Learning Objectives

- Differentiate types of wounds.
- Explain the purpose of wound care.
- List important equipment needed to provide wound care.
- Perform dressing of clean and septic wounds.
- Provide care for the patient with draining wound.
- Demonstrate skill of wound suturing and irrigation.
- Apply clip and remove it when indicated.

Key Terminology

abrasion	laceration	wound
debridement	pressure ulcer	
decubetus ulcer	puncture	
exudates	surgical incision	

The skin acts as a barrier to protect the body from the potentially harmful external environment. When the skin's integrity (intactness) is broken, the body's internal environment is open to microorganisms that cause infection. Any abnormal opening in the skin is a wound.

A wound is any disruption in the skins intactness. It may be accidental or intentional such as abrasion (rubbing off the skin's surface); a puncture wound (stab wound); or laceration (a wound with torn, ragged edges). A wound may be intentional, such as surgical incision (a wound with clean edges). A wound that occurs accidentally is contaminated; intentional wounds are made under sterile conditions.

Wound healing

Wound healing differs according to how much tissue has been damaged. It occurs by first, second, and third intention.

First intention healing occurs in wounds with minimal tissue loss, such as surgical incisions or sutured wounds. Edges are approximated (close to each other); thus they seal together rapidly. Scaring and infection rate with first intention healing are low.

Second intention healing occurs with tissue loss, such as in deep laceration, burns, and pressure ulcers. Because edges don't approximate, openings fill with granulation tissue that is soft and pinkish. Later, epithelial cells grow over the granulation greater than that for first intention healing.

Third intention healing occurs when there is a delay in the time between the injury and closure of the wound. For example, a wound may be left open temporarily to allow for drainage or removal of infectious materials. This type of healing some times occurs after surgery, when the wound closes later. In the mean time, wound surfaces start to granulate. Scaring is common.

1. Dressing of a Clean Wound

Purpose

- To keep wound clean
- To prevent the wound from injury and contamination
- To keep in position drugs applied locally
- To keep edges of the wound together by immobilization
- To apply pressure

Equipment

- Pick up forceps in a container
- Sterile bowl or kidney dish
- Sterile cotton balls
- Sterile galipot
- Sterile gauze
- Three sterile forceps
- Rubber sheet with its cover
- Antiseptic solution as ordered
- Adhesive tape or bandages
- Scissors
- Ointment or other types of drugs as needed
- Receiver
- Spatula if needed
- Benzene or ether.

Technique

Aseptic technique to prevent infection

Procedure

❖ Explain procedure to the patient

- Clean trolley or tray; assemble sterile equipment on one side and clean items on the other side. Make sure it is covered.
- Drape and put patient in comfortable position.
- Place rubber sheet and its cover under the affected side.
- Remove the outer layer of the dressing e.g. adhesive tape bandage.
- Remove the inner layer of the dressing using the first sterile forceps and discard both the soiled dressing and the forceps.
- Take the second sterile forceps. Clean wound with cotton balls soaked in antiseptic solution, starting from inside to the outside.
- Again use the second forceps to clean the skin around and remove adhesive with benzene or ether.
- Apply medication if any and dress the wound with sterile gauze.

Method of Application

- Ointment and paste must be smeared with spatula on gauze and then applied on the wound.
- Solutions or powder can be applied direct on the wound.
- Make sure that the wound is properly covered.
- Fix dressing in place using adhesive tape or bandage.
- Leave patient comfortable and tidy
- Record state of wound

- Clean and return equipment to proper place

N.B.

The above-mentioned equipment can be prepared in a separate pack if central sterilization department is available.

2. Dressing of Septic Wound

The purpose is to

- Absorb materials being discharge from the wound
- Apply pressure to the area
- Apply local medication
- Prevent pain, swelling and injury

Equipment

- Sterile galipot
- Sterile kidney dish
- Sterile gauze
- Sterile forceps 3
- Sterile test tube or slide
- Sterile cotton- tipped application
- Sterile pair of gloves, if needed, in case of gas gangrene rabies etc.
- Rubber sheet and its cover
- Local medication if ordered
- Spatula
- Receiver with strong disinfectant to immerse used instrument

- Probe and director if required
- Scissors
- Benzene or ether
- Bandages or adhesive tape
- Bucket to put in soiled dressing

Procedure

Explain procedure to the patient

- Clean trolley o tray and assemble sterile equipment on one side and surgically clean items on the other side. Make sure the tray or trolley is covered.
- Drape patient and position comfortably.
- Place rubber sheet and its cover under the affected part
- First remove the outer layer of the dressing
- Wear gloves if necessary. Use, forceps to remove the inner layer of the dressing smoothly and discard there for caps.
- Observe wound and check if there is drainage rubber or tube.
- Take specimen for culture or slide if ordered (Do not cleanse wound with antiseptic before you obtain the specimen.)
- Start cleaning wound from the cleanest part of the wound to the most contaminated part using antiseptic solution.
- (H_2O_2 3% is commonly used for septic wound). Discard cotton ball used for cleaning after each stroke over the wound.
- Cleanse the skin around the wound to remove the plaster gum with benzene or ether
- Use cotton balls for drying the skin around the wound properly

- Dress the wound and make sure that the wound is covered completely
- Fix dressing in place with adhesive tape or bandages
- Leave patient comfortable and tidy
- Cleanse and return equipment to its proper places
- Discard soiled dressings properly to prevent cross infection in the ward.

N.B.

- If sterile forceps are not available, use sterile gloves
- Immerse used forceps, scissors and other instrument in strong antiseptic solution before cleansing and discard soiled dressing properly.
- In a big ward it is best to give priorities to clean wounds and then to septic wounds, when changing dressings, as this night lessen the risk of cross infection.
- Consideration should be given to provide privacy for the patient while dressing the wound.
- Wounds should not be too tightly packed in effort to absorb discharge as this may delay healing.

4. Dressing with Drainage Tube

Purpose

- Aids to prevent haematoma or collection of fluid in the affected area.

Equipment

- Sterile kidney dish
- Sterile gallipot
- Sterile Scissors
- 3 Sterile forceps
- Sterile cotton balls
- Sterile gauze
- Anti septic solution as ordered
- Sterile safety pins if needed
- Cotton wool or absorbent
- Receiver
- Rubber sheet and its cover
- Adhesive tape or bandage
- Dressing scissors
- Ointment paste or paraffin gauze
- Spatulas if needed
- One pair sterile gloves if available.

Procedure

Explain procedure to the patient

- Cleanse tray or trolley and organize the needed equipment and make sure it is covered.
- Drape and position the patient according to the need and put rubber sheet and its cover under the part to be dressed
- Remove the outer layer of the dressing

- Use sterile forceps and remove the inner layer of the dressing (pay attention so that the drainage tube is not pulled out with the old dressing)
- Observe the wound for the type and amount of discharge
- Clean the wound with cotton balls soaked in antiseptic solution.
- Grasp the top of the drainage tube with sterile forceps. Pull it up a short distance while using gentle rotation and cut off the tip of the drain with sterile scissors (the length to be cut depends on the instruction or order).
- Place sterile safety pin through the drainage tube close to the wound using sterile gloves or sterile gauze, if it is in the abdomen to stop the drainage tube slipping down out of sight.
- Make sure the wound and the skin around are properly cleaned.
- Apply ointment or paste to the skin with spatula directly around to prevent irritation and excoriation (if the excoriation exists use paraffin gauze to prevent further complications).
- Cut the gauze towards its center to fit around rubber drainage tube, so that it fits properly around the tube thus preventing discomfort.
- Use adhesive tape or bandages to secure the dressing in place.
- Record state of wound and the drainage.

Note.

- Safe method should be used for disposing old dressing. Gauze and cotton used for cleaning wound.
- Take preventive measures to avoid skin irritation and excoriation.
- If drainage tube is attached to the bottle precaution must be taken to secure the tube in place and avoid the risk of cross infection.

Wound Irrigation

Purpose

- To cleans and maintain. Free drainage of infected wounds.

Equipment

- Sterile galipot or kidney dish
- Sterile cotton balls
- Sterile gauze
- 3 Sterile forceps
- Sterile catheter
- Sterile syringe 20 cc
- 2 receiver
- Rubber sheet and its cover
- Rubber sheet and its cover
- Solutions (H_2O_2 or normal saline are commonly used)
- Adhesive tape or bandage
- Bandage scissors

- Receiver for soiled dressings

Procedure

Explain the procedure to the patient and organize the needed items.

- Drape and position patient
- Put rubber sheet and its cover under the part to be irrigated
- Remove the outer layer of the dressing
- Remove the inner layer of the dressing using the first sterile forceps.
- Put the receiver under patient to receive the out flow
- Use syringe with desired amount of solution fitted with the catheter.
- Use forceps to direct the catheter into the wound.
- First inject the solution such as H_2O_2 at body temperature gently and wait for the flow. This must be followed by normal saline for rinsing.
- Make sure the wound is cleaned and dried properly.
- Dress the wound and check if it is covered completely
- Secure dressing in place with adhesive tape or bandage
- Leave patient comfortable and tidy
- Record the state of the wound
- Clean and return equipment to its proper place.

Note:

- Keep patient in a convinent position. According to the need so that solution will flow from wound down to the receiver.

- Use sterile technique and warn solution for irrigating the wound.

Suturing

Definition: The application of stitch on body tissues with the surgical needle & thread.

Purpose

- To approximate wound edges until healing occurs
- To speed up healing of wound
- To minimize the chance of infection
- For esthetic purpose

Equipment

- Tray or trolley covered with a sterile towel
- Sterile needle holder
- Sterile round needle (2)
- Sterile cutting needle (2)
- Sterile silk
- Sterile cat- gut
- Sterile tissue forceps
- Sterile suture scissors
- Sterile cotton swabs in a galipots
- Sterile solution for cleaning
- Sterile dressing forceps
- Sterile receiver
- Sterile gauze

- Sterile plaster
- Dressing scissors
- Local anesthesia
- Sterile needle & syringes
- Sterile gloves
- Sterile hole- towel (Fenestrated towel)

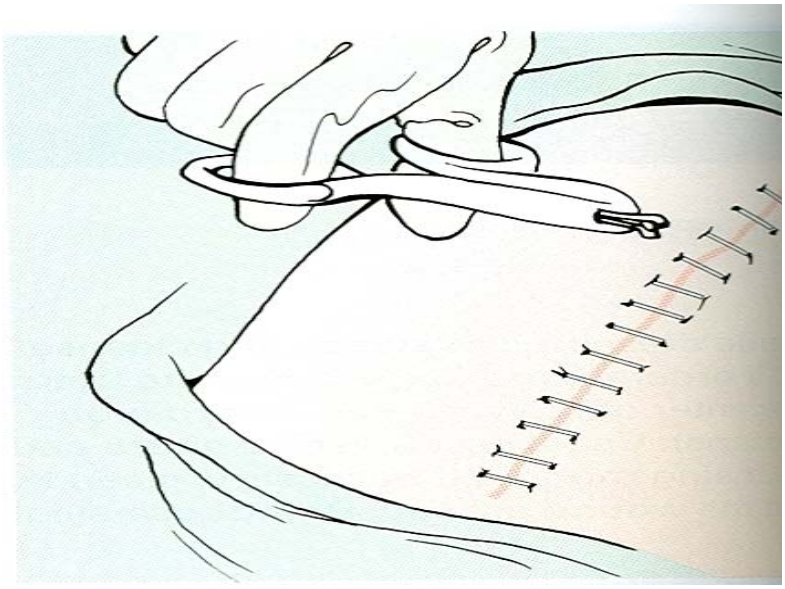
Procedure

- Explain procedure to patient
- Adjust light
- Wash your hands
- Clean the wound thoroughly
- Wash your hands again
- Put on sterile gloves
- Drape the Wound with the hold- sheet
- Infiltrate the edges of the wound to be sutured with local anesthesia.
- Approximate the edges of the fascia with the help of the tissue forceps and using the round needle and cat- gut. Suture the fascia layer first.
- Using the cutting needle and silk, suture the outer layer of skin approximating the edges with the help of the tissue forceps.
- Clean with iodine and cover with sterile gauze.
- Remove the hole- Sheet
- Make patient comfortable
- Remove all equipment, wash & return to its proper place or send for sterilization.

Note:

- Do not suture wounds that are over 12 hrs old. How ever, such wounds have to be seen by a doctor since excision of all dead & devitalized tissue and eventual suturing may be required.
- Check that the patient gets his order for T.A.T before he leaves the hospital.
- Do not suture deep wound.
- Before you suture any wound, make sure it is free of any foreign bodies.

Removal of the Stitch



Technique: Use aseptic technique

Principles

- Sutures may be removed all at a time or may be removed alternatively.
- Do not cut stitches in more than one place as a part of it may be left behind and may cause infection.
- Suture is lifted slightly by the knot to allow scissors to go under and one part of the suturing from the cleanest part of the wound to the most contaminated part.
- Cleanse the skin around with antiseptic. Remove – gum with benzene or ether and discard the forceps
- Place sterile gauze to receive stitches.
- Take a pair of scissors in the right hand.
- Take a dissecting forceps in the left hand.
- Pull-up gently the knot resting against the skin with the forceps, pass the point of the scissors under the knot then cut the stitch on one side and remove.
- Receive pieces of stitches on a sterile gauze
- Inspect the scar for wound healing and apply iodine on the skin punctures if patient is not sensitive to iodine.
- Apply dressing
- Keep patient comfortable and tide
- Record the state of the wound
- Clean and return equipment to their proper places.

Clips

Definition: Metal suture used to stitch the skin

Purpose

Some *as suturing with stitch*

Equipment

- Michel clip applier
- Clip
- Tissue forceps (toothed dissecting forceps)
- Cleaning material- same as stuttering with stitch.

Procedure

The first part of procedure is the same as for suturing with stitch *Except* that instead of suturing the skin with thread and needle you would apply clips with the applier.

Removal of Clips

Technique

Use aseptic technique

Equipment

- Sterile gauze
- Sterile cotton balls
- Sterile kidney dish
- Sterile forceps 3

- Sterile clip removal forceps
- Antiseptic solution (Savalon 1% and iodine)
- Receiver
- Benzene or ether
- Adhesive tape or bandage

Procedure

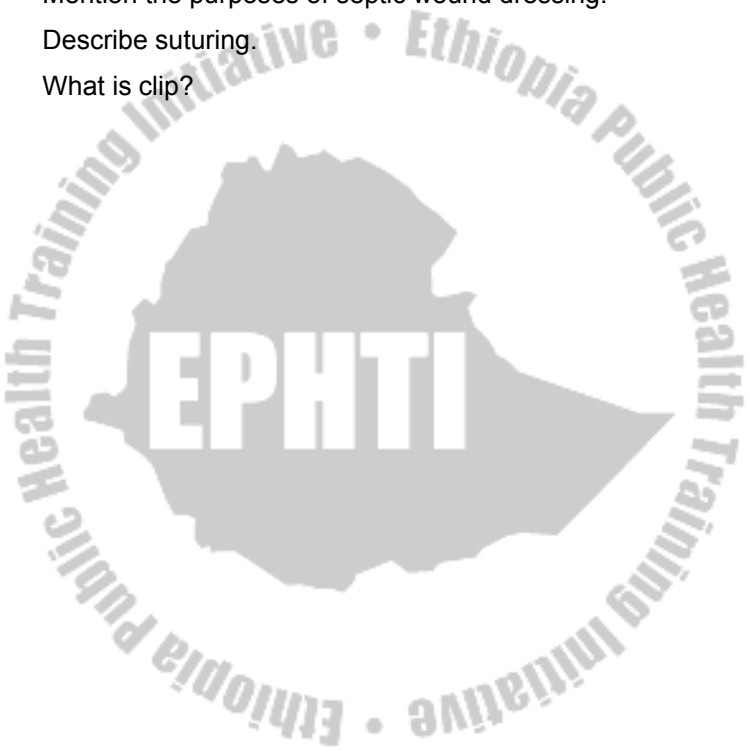
Explain procedure to the patient and organize the needed equipment

- Drape and position patient
- Protect bedding with rubber sheet and its cover
- Remove old dressing and discard.
- Cleans wound with antiseptic solution starting from the cleanest part of the wound to the most contaminated part and discard the cotton ball.
- Place sterile gauze to receive removed clips.
- Take clip remove with the right hand and dissecting forceps with the left hand.
- Insert the lower blade of the clip remove below the middle of the clip using the dissecting forceps as a support of old the clips in place, and close the blade firmly as this will cause disagreement of the clips from the skin.
- Receive clips on sterile gauze
- Apply iodine on the skin punctures if required
- Dress the area if required
- Secure dressing in place with adhesive tape
- Leave patient comfortable and tidy
- Record the state of scare

- Clean and return used equipment to its proper place.

Study Questions

1. Identify different types of wound care.
2. Mention three types of wound healing intentions.
3. Mention the purposes of septic wound dressing.
4. Describe suturing.
5. What is clip?



UNIT EIGHT

CHAPTER FIFTEEN

PERI OPERATIVE NURSING CARE (PRE & POSTOPERATIVE NURSING CARE)

Learning objectives:

- List steps in pre operative preparation.
- Identify the high-risk surgical patients.
- Describe the major assessment skills, needed in the pre operative, intra operative, and postoperative stages.
- Explain the purpose of informed consent.
- Perform general postoperative measures such as: obtaining vital sings, assessing level of consciousness, assessing surgical pain.
- Report and document post operative complication.
- Assess for patient air way.

Key terminology

anaesthesia	hypothermia	postoperatve
atlectasis	hypoxia	preoperative
elective	intraoperative	suture
embolus	perioperative	
evisceration	pneumonia	

Preoperative Care – Nursing Process

Assessment

Assessment Priorities

- Nursing history
- Client's understanding of the proposed surgical procedure
- Past experiences with surgery
- Fear (fear of unknown, fear of pain or death, fear of change of body image or self concept)
- Factors that increase surgical risk or the potential for post operative complications.
- Adequacy of coping patterns and support systems.
- Pertinent socio cultural factors.
- Vital signs the morning of surgery, (any deviation should be reported)
- Accurate height and weight, especially for children
- General systems review
- Results of all preoperative diagnostic tests recorded

Possible Nursing Diagnosis

- Anxiety
- Ineffective coping
- Decisional conflict
- Fear
- Anticipated grieving
- Difficult knowledge

- Powerlessness

Planning/Objectives

Prior to surgery, the client:

- Demonstrates physical preparedness for surgery (absence of significance deviations from normal in vital signs, no signs of infection).
- Verbalize any concerns or fears related to the surgery.
- Provides informed consent for the surgery.
- Correctly demonstrates how to turn, deep breath, use equipment.
- Verbalizes understanding of post operative pain management program.
- Verbalizes understanding of post operative activity plan.
- Demonstrate the present of adequate caregivers at home after discharge.

Implementation

- Establish a supportive and trusting nurse-client relationship.
- Develop and implement a teaching plan that:
    - → Familiarizes the client and family with what to expect on the day of surgery.
    - → Prepares the client to participate in the pain management program.

→ Enables the client to state the purpose of deep breathing and to demonstrate it, as well as us exercise, turning in bed.

- Counsel the client and family about helpful coping strategies and available resources.
- Maintain nutrition and hydration, if the client is NPO, for 8 to 12 hours prior to surgery, ensure that the client understands the reason for this restriction, and remove all food and fluid from bed side.
- Evaluate the client's bowel status and determine the need for an order of bowel elimination.
- Cary out preoperative skin and hygiene orders.
- Facilitate sleep and rest in the immediate preoperative period.

Evaluation

Determine the adequacy of the plan of care by evaluating the client's achievement of the preceding goals.

Key evaluative criteria:

- Client's physical preparedness for surgery.
- Client's mental preparedness for surgery.
- Client's understanding of and ability to participate in care post operatively.
- An eventful course of recovery.

Pre-operative

Purpose

- To prepare the patient emotionally, mentally and physically for surgery.
- To prevent any complication before, during and after surgery.

Equipment

As necessary

- It is important that the patient be in a good state of physical health before he has surgery. Unless it is an emergency operation.
- He should have balanced diet, fluid, sleep and rest before his surgery.
- The patient's mental state is important to his recovery. Try to relieve his fears about the operation and any fear of death: explain to him what will be done and that every measure will be taken for his safety.

Procedure

The day before surgery:

Physical preparation

- Give the patient a complete bed bath to keep the body clean before surgery. Give special attention to the umbilicus and other areas of the body. Keep the fingernails and the nails of the toe short and clean.

- Be sure the patient's hair is clean. If the surgery is on the face, neck, shoulders or upper chest, the hair should be the thoroughly washed, combed and tied up to keep it from touching the operative area. If the surgery is on the head the area must be shaved and the hair washed.
- If an enema has been ordered, give the night before surgery. Be sure this is given and is effective. Chart the results.

Psychological preparation

- If the patient does not yet understand what will be done. Explain briefly what the operation is and how it will help him. Avoid telling him anything that would make him worry.
- It is important that the patient has a good sleep the night before his operation. Make him comfortable and turn out the light in his room early. If he is unable to sleep report to the doctor.
- Have patient or relative sign consent for the operation
- Instructs patient about deep breathing and cough exercise

Day of Surgery:

- If the surgery is in the morning be sure the patient is prepared early. Any thing abnormal such as pain, fever cough rapid pulse or elevated blood pressure must be reported immediately. The surgery may have to be canceled or delayed until the patient is well.
- If the surgery is in the morning, nothing should be taken by mouth after midnight (N.P.O.) if the surgery is in the

afternoon., fluids and food should not be taken in the morning depending on the orders

- Check the cleanliness of body areas, umbilicus, nails and hair.
- Shave the hair from the skin of the operative area thoroughly. Some one should check to see if all the hair has been removed. Wash the skin well with soap and water before and after shaving.
- Cheek the orders for preoperative treatment, such as enema, catheterization of folly catheter.
- The patient's temperature, pulse, respirations and blood pressure should be taken and recorded on the chart just before surgery.
- Give the premeditation as ordered, being careful to give the tight amount at the right time to the right patient and record.

Just before surgery

- Have the patient void, if he is unable to void inform the doctor.
- Assist patient to move to the stretcher. The patient may be very sleepy or dizzy from the preoperative medications and may hurt himself. Support the stretcher to keep it from rolling as the patient moves onto it.
- Make sure his elbows are close to his sides or over his chest prevent them from being pumped as the stretcher passes through doorways.
- Reassure him as you take him to the operating room
- Make sure the chart is complete and take to the theater with the patient.

Shaving

Purpose

- To minimize the danger of infection by decreasing the number of bacteria on the skin.

Equipment

- Basin of warm water
- Washcloth
- Towel
- Soap
- Blade and razor holder, if available
- Scissors
- Rubber sheet and towel

Procedure

- Prepare the equipment and bring it to the bedside.
- Fold the top linen and cover the patient with the bath blanket (if available)
- Screen bed
- Make the patient comfortable in the best position for the procedure.
- Place the rubber sheet and towel under the part to protect the bed linen.
- Wash the area well with soap and water.
- Leave the soap on the area while you have.

- When all the hair has been shaved off, rinse the skin with clear water. (If hair is long it could be shortened before shaving)
- Wash it again with soap, and water. Use enough soap to make lather.
- Be sure to wash all creases and folds very well.
- Rinse with clean water
- Repeat washing until the area is clean.
- Dry the skin well and examine it to see if bed linen.
- Make the patient comfortable and replace the bed linen.

Specific Area to be shaved:

Head Operations

- Explain the reason for having the head to the patient
- If the hair is long, it must be cut short
- Wash the head and hair well
- Shave the area of the operation as directed. If it is a major operation, the whole head should be shaved.

Eye Operation

- Cut the eyelashes as close as possible on both sides.
- Use some Vaseline on the blades of the scissors before you begin to prevent the eyelashes from falling into the eye.
- Shave the eyebrows on both sides if ordered only.
- Be very careful not to injure the eye or let any hair fall into the eye.

Face Operation

- Shave the site of the operation will be
- If the patient is a man, make sure that the face is completely free from beard.
- Wash face
- Be careful not to get soap into the patient's eyes.

Anterior Neck Operations:

- Wash the patient's head and neck
- If the patient is a woman, tie her hair, and keep it away from her neck, or cut it short.
- Shave the front and sides of the neck from the chin to the end of the sternum, and out to the shoulders.
- The area must be clean.

Posterior Neck Operations:

- The head and neck should be washed. Cut the hair short or tie out of the way.
- Shave at least 15cm. and around the place of incision.

Spinal-Operations

- Ask the doctor where the site of operation will be
- Shave at least 15-25cm. all around the area of incision.

Breast Operations

- Shave the anterior and posterior chest from neck to the waist line on the side where the surgery will be

- Shave the axilla on that side and the arm as far down as the elbow.

Kidney Operations

- Turn the patient on his side with the operative side upward.
- Shave from the sternum to the groin and across the side the same width up to the spinal column.
- Shave the axilla on that operation is a long one, so a large area must be prepared.

Abdominal operations

- Shave the whole abdomen from the end of the sternum down to the pubes.
- The umbilicus must be clean

Perennial and Rectal Operations

- The pubic and perinea hair must be shaved from the pubes to the anal area.
- Shave at least 15 cm. down the inside of the thighs both sides

Limb Operations

- The whole limb should be washed well
- Shaved at least 15 cm all around the operative area.
- If the operation is on the upper arm or the upper leg. The axilla or perineum should be shaved as well.
- If the operation is near the hand or foot cut the nails very short and clean them well.

Intraoperative Nursing Care

Observing a client undergoing surgery may be a component of a nursing student's experience. Doing so will not only give the student a better idea of surgical procedures, but it will also help in understanding the client's feelings and apprehensions. Special training mostly given in OR technique and anesthesia

Nurses assist surgeons in the operating room. The two basic categories of assistant are the sterile assistant and the circulating assistant. ***The sterile assistant (scrub nurse)*** is scrubbed, gowned and gloved. He/she functions with in the sterile field. Duties include handling instruments to the surgeon, threading needles, cutting sutures, assisting with retraction and suction, and handling specimen.

The circulating nurse works outside the sterile field. Duties include opening sterile packs, delivering supplies and instruments to the sterile team, delivering medications to sterile nurse, labeling specimens, and keeping records during the surgical procedure. This person acts as a client advocate by monitoring the situation and maintaining safety in the operating room. In most cases, the circulating nurse must be registered nurse.

Post- operative Care

Purpose

- To prevent any complication from anesthesia
- To detect any sign of post- operative complications

- To rehabilitate the patient.

Equipment

- Anesthetic bed
- Oxygen
- Sphygmomanometer
- Stetoscope
- Suction machine (as needed)
- Extra rubber sheet (as needed)
- I.V stand
- Emergency drugs (to be ready in wards)
- Bed blocks (as needed) for shock

Procedure

- Prepare anesthetic bed (see section on bed making)
- Assist operating room nurse in placing patient in bed. An unconscious patient may be placed on either his right or left side unless specified
- Check post- operative orders and adjust flow of drip of IV fluid.
- Take blood pressure, pulse and respiration as ordered (usually every 15 minutes until stable)
- Encourage patient cough and breathe deeply every 15 minutes for two hours, and then every two hours until able to be up, unless other orders are written.
- Check dressing for any excessive bleeding or drainage.
- Check for tubes to be connected to drainage bottle- no kinks in tubing. Secure tubing with bedding.

- If patient vomits, turn his head to the side to prevent aspiration and chocking.
- Observe patient closely for any signs of shock and hemorrhage.
- Report any untoward symptom immediately.

Charting

- Time of return
- General condition and appearance
  - ⇐ State of consciousness
  - ⇐ Color of skin
  - ⇐ Temperature of skin to touch
  - ⇐ Skin- moist or dry
  - ⇐ Blood pressure, plus and respiration
  - ⇐ Any unusual condition such as bleeding drainage, Vomiting etc.

Generals Instructions

- If patient shows any signs of shock immediate action should be taken and then be reported to the doctor. The head of the bed should be lowered (If no gatches on bed, bed blocks may be used)
- Do not leave unconscious patient alone.
- Keep patient flat in bed with the head to the side (no pillows) and avoid chilling.
- Watch color of skin, lips, and fingernails carefully,

- If there is any bleeding carry out the necessary measures and report immediately.
- The patient is having pain after he is awake. Analgesics may be given according to orders.
- Limit visitors in the patient's room
- Carry out post-operative orders carefully
- Place patient in a comfortable position

Post-operative Care of Specific Surgeries

Brain Surgery

- Patient must lie on his back with out pillows unless ordered otherwise.
- Room should be dark and quit to prevent irritation to the brain.

Breast Surgery

- Encourage deep breathing often, because of danger of pneumonia
- Special arm exercises should be given

Abdominal Surgery

- Encourage deep breathing
- Turn from side to side often
- Sit patient on edge of bed 1st day postoperatively and
- Start walking second day post operatively (unless contra-indicated)
- Intake and output should be recorded

- If gastric suction is present make sure it is working properly
- Frequent mouth care for patients who are not allowed to drink.

Eye Surgery

- Must lie very still because the incision and sutures can be damaged by pulling on the eye muscles. Both eyes may be covered.
- Room may be quiet and dark
- Patient must be fed.

Spinal Surgery

- Must lie on abdomen of back with bed flat, and supported by fracture board mattress.
- Patient may be in a body cast. Care must be given to prevent bed scares where the cast rubs.

Thyroidectomy

- Place in high lowers position. This will make it easier to breathe since the pressure of dressing and swelling may give choking feeling.
- An emergency tracheotomy set should always be at the bedside or nurses office for first three days, in case of hemorrhage or swelling trachea.
- The complication “Thyroid crisis” must be reported immediately as death can occur if condition is not treated quickly.

Tonsillectomy

Child

- Lie on abdomen or side to prevent blood drainage into throat, lunge or stomach.
- Watch carefully for excessive bleeding.

Adult

- If conscious, he may sit in semi- fowler's positron in order to spit the blood more easily.
- Watch carefully for excessive bleeding.

Study Questions

1. Mention the purposes of preoperative nursing care.
2. Why shaving is indicated before surgery?
3. Differentiate between the roles of scrubbed and circulating nurses in operating room.
4. State purpose of postoperative nursing care.
5. List some important equipment to provide care for immediate postoperative patients.
5. Why informed consent is required before surgery?

UNIT NINE

CHAPTER SIXTEEN

CARE OF THE DYING AND POSTMOTREMCARE

Learning Objectives

At completion of the chapter the learner will be able:

- Mention stages experienced by dying person
- Define death
- Identify sing of death.
- Confirm death in collaboration with physician.
- Reassure relatives of the dying patient.
- Provide care fore the dead body with respect.
- Transferee the dead body to morgue or his house.

Key terminology

Autopsy	Cheyne-Stkes respiration
postmortum examination	Brain death
Kussmal's breathing	

A. Care of the Dying

Death:- Is a natural part of life and comes to all beings. Is the end of life and all the vital processes. Legal death is the

total absence of brain activities as assessed and pronounced by the physician.

Spirituality and Death

Death often forces people to consider profaned questions: the meaning of life, the existence of the soul, and the possibility of an after life. Individuals faced with death, their close friends, and family often relies on a spiritual foundation to help them meet these challenging concepts. Spirituality takes several forms. Bernard and Schneider mention three levels of spiritual support for dying persons.

- The first level is drawing strength from God.
- The second level is strength generated by prayer.
- The third level is strength from caring relationships with others.

For those whose spirituality does not include beliefs rooted in organized religion, support may take the form of compassionate care and the acceptance of personal beliefs.

Consider the spiritual dimension of your client's needs. Meeting basic human needs is an expression of caring that dying individuals will appreciate even if they can no longer communicate with you verbally.

Stages of Dying

Elisabeth Kubler-Ross (1969) has beautifully described the phases of dying, which mirror those of the grieving process. As a person learns of his or her own impending death, he or she experiences grief in relation to his or her own loss.

The first stage, as Dr. Ross views this process, is that of *denial.* The denial may be partial or complete and may occur not only during the first stages of illness or confrontation but later on from time to time. This initial denial is usually a temporary defense and is used as a buffer until such time as the person is able to collect him or herself, mobilize his or her defenses, and face the inevitability of death.

The second stage is often *anger.* The person feels violent anger at having to give up life. This emotion may be directed toward persons in the environment or even projected into the environment at random. Dr. Ross discusses this reaction and the difficulty in handling it for those close to the person by explaining that we should put ourselves in the client's position and consider how we might feel intense anger at having our life interrupted abruptly.

The third stage is *bargaining.* The person attempts to strike a bargain for more time to live or more time to be without pain in return for doing something for God. Often during this stage the person turns or returns to religion.

Depression is the fourth stage. Usually, when people have completed the processes of denial, anger, and bargaining, they

move into depression. Dr. Ross writes about two kinds of depression. One is preparatory depression; this is a tool for dealing with the impending loss. The second type is reactive depression. In this form of depression, the person is reacting against the impending loss of life and grieves for him or herself.

The final stage of dying is that of *acceptance.* This occurs when the person has worked through the previous stages and accepts his or her own inevitable death. With full acceptance of impending death comes the preparation for it; however, even with acceptance, hope is still present and needs to be supported realistically.

Many factors influence how individuals accept death. Personal values and beliefs about life; views of personal successes, both financial and emotional; the way they look physically when experiencing the dying process; their family and friends and their families' attitudes and reactions; their past experiences in coping with difficult or traumatic situations; and, finally, the health care staff who are caring for them during this process – all affect an individual's attitude toward dying.

Nursing Process

Assessment

Observe the physical symptoms.

- Evidence of circulatory collapse
- Variations in blood pressure and pulse
- Disequilibrium of body mechanisms

- Deterioration of physical and mental capabilities
- Absence of corneal reflex

Observe the client's ability to fulfill basic needs without complete assistance.

- Assess the nature and degree of pain the client is experiencing.
- Observe for impending crisis or emergency situation.
- Observe for psychosocial condition.
- Need to establish a relationship for support
- Grief pattern and stage of grief the client is experiencing
- Need to express feelings and verbalize fears and concerns

Determine anxiety level, which may be expressed in physical or emotional behavior.

- Sleep disturbance
- Palpitations
- Digestive complaints
- Anger or hostility
- Withdrawal

Determine depression level that client may be experiencing.

- High fatigue level or lethargy
- Poor appetite, nausea, or vomiting
- Inability to concentrate
- Expressions of sadness, hopelessness, or uselessness

Planning/Objectives

- To assist the dying client to cope with the dying process

- To handle own feelings of loss and sadness that arise when caring for a client who is dying
- To provide support for the client and the client's family during the dying process
- To complete the actions necessary to care for the client who has died

Implementation /Procedure (See this under procedure part)

Assisting the Dying Client

Evaluation/Expected Outcomes

Client finds internal resources to accept death.

Client is able to verbalize feelings and needs.

Physical discomfort is minimized.

Assisting the dying client

Procedure

1. Minimize the client's discomfort as much as possible.
   a. Provide warmth.
   b. Provide assistance in moving, and position client frequently.
   c. Provide assistance in bathing and personal hygiene.
   d. Administer the appropriate medications before the pain becomes severe.

2. Recognize the symptoms of urgency or emergency conditions and seek immediate assistance.
3. Notify the charge nurse if there is an impending crisis and perform emergency actions until help arrives.
4. Encourage dying clients to do as much as they can for themselves so that they do not just give up-a state that only reinforces low self-esteem.
5. Provide emotional nursing care for the client.
    a. Form a relationship with the dying client. Be willing to be involved, to care, and to be committed to caring for a dying client.
    b. Allocate time to spend with the client so that no only physical care is administered.
    c. Recognize the grief pattern and support the client as he or she moves through it.
    d. Recognize that your physical presence is comforting by staying physically close to the client if he or she is frightened. Use touch if appropriate and nonverbal communication.
    e. Respect the client's need for privacy and with draw if the client has a need to be alone or to disengage from personal relationships.
    f. Be tuned into client's cues that he or she wants to talk and express feelings, cry, or even intellectually discuss the dying process.

g. Accept the client at the level on which he or she is functioning without making judgments.

6. Provide the level of care that encourages the client to retain confidence in the health care team.
7. Assist the client through the experience of dying in whatever way you are able to do so.
8. Support the family of the dying client.
   a. Understand that the family may be going through anticipatory grief before the actual event of dying.
   b. Understand that different family members react differently to the impending death and support the different reactions.
   c. Be aware that demonstrating your concern and caring assists the family to cope with the grief process.
9. Be aware of your own personal orientation toward the dying process.
   a. Explore your own feelings about death and dying with the understanding that until you have faced the subject of death you will be inadequate to support the client or the family as they experience the dying process.
   b. Share your feelings about dying with the staff and others; actively work through them so that negativity does not get transferred to the client.

Care After Death

Definition: - This is the care given to the body after death. It is also called post-mortem care.

Purpose

1. To show respect for the dead
2. To prepare the body for burial
3. To prevent spread of infection
4. To show kindness to the family

Equipment

- Basin for water, wash cloth and towel
- Cotton
- Gauze
- Dressings and tape if necessary
- Clean sheet
- Stretcher
- Forceps
- Name tag
- Gloves, if necessary

Procedure

- Note the exact time of death and chart it
- If the doctor is present call him to pronounce death
- If the family members are not present, send for them

- Wash hands and wear clean gloves according to agency policy
- Close doors of the room or pull curtain
- Raise bed to comfortable working level (when necessary)
- Arrange for privacy and prevent other patients from seeing in to room.
- Close patient's eyes and nose if necessary
- Remove N.G. tubes and other devices from patient's body
- Place patient in supine position
- Replace soiled dressing with clean ones when possible
- Bath patients as necessary
- Brush or comb hair
- Apply clean gown
- Care for valuable and personal belongings and document dispersement
- Allow family to view patient and remain in room
- Attach special level if patient had contagious disease
- Await arrival of ambulance or transfer to morgue
- Remove gloves and wash hands
- Document the procedure

Study Questions

1. Define death.
2. What are the stages experiences by dying person?
3. How do you confirm the occurrence of death?
4. What are the purposes of post mortem care?

GLOSSARY

Abrasion	a scraping or rubbing off of the skin.
Airborne precaution	precaution taken when a person has an illness that can be carried in the air or in the dust particles. Common measures include special air handling and ventilation.
Ambulatory	Walking
Ampule	small, glass sealed flask, often containing medication.
Anesthesia	complete or partial loss of sensation.
Anuria	complete suppression of urine secretion in the kidney.
Apex	lower point of the heart, formed by the tip of the left ventricle
Apical pulse	pulse normally heard at the heart's apex, which usually give the most accurate assessment of pulse rate
Aspiration	Inhalation of foodstuff, vomitus or saliva into the lungs.
Axilla	Armpit (under arm).
Autoclave	Equipment that decontaminates materials by exposing them to steam under pressure.
Apnea	Absence or lack of breathing
Anoxia	Lack of oxygen in the tissue.
Asphyxia	A condition produced by prolonged lack of oxygen

Asepsis	Absolute freedom from all microorganisms
Antiseptic	Harmless chemicals that can kill microorganisms or prevent them from multiplying.
Aplastic anemia	Anemia resulting from destruction of bone marrow cells.
Atlectasis	collapse of all or part of the lung.
Aseptic technique	Procedure used to prevent microorganisms from reaching the operation site.
Auscultation	externally hearing sounds from within the body to differentiate abnormal conditions.
Autopsy	examination of the body after death.
Base of support	balance or stability provided by the feet and their position.
Bed cradles	a wire or wooden frame placed over the patient's body or feet to support the weight of the bedclothes.
Blood pressure	The force exerted by the heart to pump the blood around the body
Bradycardia	Abnormally slow heartbeat.
Bradypnea	abnormally sloe breathing, below 10 per minute.
Brand name	copyright name assigned by a company that makes the medication; also called the trade name.
Brain death	irreversible cessation of brain and brain stem function to the extent that

	cardiopulmonary function must be mechanical maintained.
Bounding pulse	Stronger than normal heartbeat.
Body mechanics	use of safe and efficient methods of moving and lifting.
Carotid pulse	pulse felt on either sides of the neck, over the carotid artery.
Capsule	a small gelatinous case for holding a dose of medicine; a membranous structuring enclosing another body structure, as the articular capsule in a joint.
Catheter	A soft rubber tube which is used for passage of fluid.
Center of gravity	the center of one's weight; half of one's body weight is below and half above, and half to the left and half to the right of the center of gravity.
Chemical name	medication name that describes its chemical composition (often same as generic name).
Cheyne-Stkes respiration:	breathing characterized by deep breathing alternating with very slow breathing or apnea often precedes death.
Contaminated	Area that contains germs or disease-producing material.
Constipation	difficult or infrequent and hardened bowel movement.
Contracture	abnormal shortening of muscle with resulting deformity.

Cyanosis	Bluish color of lips, tip of the nose, and ear lobes due to lack of or shortage of oxygen in the blood.
Cast	A material that supported an injured part of the body and makes it immobilize.
Clips	Metallic materials that keep the skin together.
Closed bed	bed used when preparing a unit for a new client- an unoccupied bed.
Congestion	Hyperemia, accumulation of blood in a part of blood or fluid in a part of the body e.g., lung.
Contact precaution	precaution taken against disease that can be transmitted through direct contact between a susceptible host's body surface and an infected or colonized person.
Cystitis	inflammation of urinary bladder.
Dangling	positioning of a client so that he or she is sitting on the edge of the bed with legs down and feet supported by a footstool or the floor.
Debridement	removal of foreign, dead, and contaminated material from a wound, so as to expose healthy underlying tissue.
Decontamination	The process of rendering an item free from infection.
Defecation	Act of excreting feces from the rectum.

Detergent	A substance usually dissolved in water used as an aid for cleaning purposes.
Diagnosis	The decision regarding the nature of an illness, arrived at by clinical assessment of the patient and result of investigation.
Diarrhea	abnormal frequency and fluidity of discharge from the bowels.
Diastole	The resting phase of the heart during which it fills with blood.
Digitalis	A drug given to slow and strengthen the heartbeat.
Disinfectant	A chemical used to kill microorganisms.
Dorsal lithotomy	examination position in which the client is lying on his or her back with the feet in stirrups.
Dosage	an amount in a prescription that contains the dose and the scheduled time.
Dry heat	Air heated to high temperature by electricity and used for sterilizing purposes.
Droplet precaution	precautions taken to prevent the spread of diseases transmitted by microorganisms propelled through the air from an infected person and deposed on the host's eyes, nose or mouth.
Dyspnea	Difficulty in breathing.
Dysuria	difficult or painful urination or voiding.

Edema	Swelling due to water accumulation in body cells vessel, which partially or completely obstructs blood flow (embolism; pl. emboli).
Elective (surgery)	case in which the client's condition is not life threatening and may choose whether or not to have surgery; also called optional surgery.
Embolus	a foreign substance, blood clot, fat globule, piece of tissue, or air bubble carried in a blood
Enema	An injection of fluid into the colon or rectum.
Enteric	pertaining to the small intestine. *Enteric-coated* tablets are covered with a substance that prevents their digestion in the stomach.
Eupnea	normal respiration
Eviceration	the protrusion of the intestines through an abdominal wound ; removal of the internal body contents.
Exhalation	Breathing out.
Exudate	material that escapes from blood vessels and is deposited in tissue or on tissue surfaces; usually contains protein substances.
Fahrenheit	System of measuring heat
Femoral pulse	pulse felt in the groin over the femoral artery
Fecal impaction	accumulation of hardened stool in the rectum.
Fever	Body temperature elevation above 37^0C

Flatus	Gas in the intestines.
Footboard	A board placed at the foot of the bed to support the feet.
Footdrop	contructure deformity that prevents the client from putting the heel on the floor; results from improper positioning or anterior leg muscle paralysis. On his or her back with the head elevated.
Fowler's position	a position in which the client is lying.
Gait	manner or style of walking.
Gastrostomy	Making an artificial opening into the stomach through which the patient is fed by pouring nourishment through a tube directly into the stomach.
Generic name	name assigned by a drug's first manufacturer (often the chemical name).
Halitosis	bad breath.
Hemoglobin	the oxygen carrying pigment in blood that gives blood its red color.
Hypertension	High blood pressure.
Hypo tension	Low blood pressure.
Hypothermia	low body temperature.
Hypothermia blanket	cooling blanket; also called hypothermia blanket.
Hypoxia	reduction of oxygen in the tissues; also called hypoxemia.
Incontinence	Loss of bladder or bowel control.
Infection	Invasion of the body by germs.

Inflammation	Reaction of the body to infection or injury, characterized by redness, heat, pain, and swelling at the site.
Infusion	slow induction of fluids (not blood) into a vein, as an intravenous (IV) infusion
Inhalation	Breathing in.
Intake	Fluid taken into the body.
Intraoperative	occurring during a surgical operation.
Irrigation	Injecting fluid into a cavity without interrupting its return.
Isolation	The act of setting apart. An isolation room or ward is one kept for contagious or infectious diseases.
Korotkoff's sound	sounds heard when measuring blood pressure with a stethoscope.
Kusmal's breathing	sever paroxysmal dyspnea, as in diabetic acidocis and coma
Laceration	a wound produced by tearing or ripping (as opposed to an incision made in surgery).
Leukocyte	white blood cell (WBC).
Line of gravity	direction of gravitation pull; an imaginary vertical line through the top of the head, center of gravity, and base of support.
Microorganism	Bacteria, virus, fungi, and spores.
Medication	substance other than food used to prevent disease, to aid in diagnosis and treatment and to restor or maintain functions in the body tissues; also called drug.

Melena	passage of dark colored stools containing partially or fully digested blood, also used to mean abnormal blood in the stool or vomitus.
Micturation	passage of urine from the urinary bladder; also called voiding , urinating.
Mitered corner	A triangular fold made in bedclothes to hold them in place at the corners.
Necrosis	Death of tissue.
Nocturia	excessive voiding (urination) during the night.
Nits	The eggs of a louse.
Occupied bed	bed holding a client that is unable to get up as a result of his or her condition or generalized weakness.
Occult	hidden.
Oliguria	deficient urinary secretion or infrequent urination.
Ophthalmic	medications that are instilled or administration directly to the eye.
Oral	of or pertaining to the mouth
Orthopenia	difficult breathing relieved by seating or standing erect
Output	All fluid lost from the body.
Otic	of the ear.
Orthopnea	A condition in which one breathes easier in a sitting position.

Palpation	the act of feeling with the hand placing the finger on the skin.
Paralysis	motion loss or impairment of sensation in a body part.
Parenteral	administered in to the body in a way other than through the alimentary canal (subcutaneous, intravenous, intramuscular), as *parenteral* medication
Pedal pulse	pulse on the foot felt over the dorsal pedis artery or posterior tibial artery
Perineal care	bathing the genital and surrounding area.
Perioperative	the period surrounding surgery; includes preoperative, intraoperative, and postoperative periods.
Pharmachokinetics	actions of drug
Pharmachology	the study of chemicals (drugs, medications) and their effect.
Potentiation	enhancement of one agent by another, so that the combined action is greater than the sum of the two.
Pneumonia	lung inflammation, with consolidation and drainage.
Pediculosis	Human louse infestation
Polyuria	voiding an excessive amount of urine.
Popliteal pulse	pulse located posterior to the knee.
Postural drainage	Position adapted to facilitate expectoration of material in patients with lung disease.
Postoperative	After an operation.

Postoperative bed	bed prepared for a client who is returning from surgery or another procedure that requires transfer into the bed from a strether or wheelchair.
Prescription	written formula for preparing and administering medication.
Preoperative	Before an operation
Projectile vomiting	emesis expelled with great force.
Prone	positioning a client so that he or she is lying on the stomach.
Pressure ulcer	ulcerated sore often cause by prolonged pressure on a bony prominence or other area, especially if the client is allowed to lie in one position for an extended period . Also called decubetus ulcer. (formerly “called bedsore”).
Protective device	piece of equipment, most often a vest or a belt, used to ensure the safety of the client ()ie, helping client to remain in a chair without falling); also called a client reminder device.
Protective isolation	attempts to prevent harmful microorganisms from coming into contact with the client; also called reverse or neutropenic isolation
Pulse	The beat of the heart felt in the arteries.
Pulse deficit	the difference between apical pulse and radial pulse.

Pulse pressure	difference between systolic & diastolic pressure.
Puncture	a whole made by a pointed object; penetration.
Recumbent	lying down
Rotation	process of turining about an axis, as rotation of the hand of the fetus in preparation of delivery.
Respiration	Breathing rate.
Radial pulse	pulse measured above the radial artery on the inside of the wrist.
Rectal	of the rectum
Retention enema	An injection of fluid that is retained in the rectum for absorption into the blood stream.
Restraints	Devices that limit the patient's ability to move in order to protect him/her from injury.
Septic wound	Infection wound; a wound containing infective microorganisms.
Sitzbath	A warm soaking of the rectum and perineal area.
Splint	A device for immobilizing part of the body
Spore	The seeds of microorganisms, which are resistant to drying, heat, and disinfectants
Standard precaution	precautions designed for the care of all clients regardless of diagnosis or infection status.
Sterile	Specially treated so that all microorganisms are destroyed

Stethoscope	Instrument for magnifying sound
Specimen	A small amount of body excretion or body fluid that is sent to a laboratory for examination.
Sphygmomanometer	Blood pressure apparatus.
Suppository	Rectally administered cones containing a medication in the base that is soluble at body temperature.
Sutures	Materials that keep broken skin together.
Systole	Blood pressure period during the beating phase of the heartbeat during which blood is expelled from heat.
Sepsis	Presence of microorganisms.
Synergism	joint action of agents in which the combined effects is greater than the sum of the individual parts.
Tablet	a compressed, spherical forms of medication.
Temperature	Degree of heat.
Tachycardia	Abnormally fast heartbeat.
Tachypenea	conditions in which breaths are abnormally rapid, more than 20 per minute
Thermometer	An instrument used to measure temperature.
Topical	medication that are applied directly to the skin or mucus membranes.
Traction	exertion of a pulling force ; an apparatus attached to the client to maintain stability of

	a joint or aligned fracture or to exert a pulling force elsewhere, as in the lower back, to relieve pressure.
Transfusion	Injection of blood into a vein.
Transimission-based-	precaution: precaution designed for clients with specific infection or diagnoses
Tympanic membrane	eardrum.
Unconscious	Not aware of or responding to surroundings.
Unoccupied bed	bed that is empty at the time it is made up.
Urinalysis	examination of urine.
Urgency	desire or sensation of needing to void immediately.
Urinary catheter	tube inserted into bladder through the urethra to remove urine.
Urinary frequency	voiding more often than usual without an increase in total urine volume.
Urinary retention	inability to empty the bladder of urine.
Virulence	ability of a microorganism to cause a disease, strength,, potency.
Vital signs	Signs of life (e.g., temperature, pulse rate, respiration rate, blood pressure).
Void	to cast out waste, as to urinate, micturate.
Vomitus	stomach contents expelled by vomitus.
Wound	injury to any body structures caused by physical means.
Z-track	“zig-zag” method of injecting caustic medications deep into muscle tissue.

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