MRS.MALAR

LECTURER

ICON

UNIT VIII - CARE OF ELDERLY

DEFINITION:

Old age is a universal problem and is a community need. This is not a disease to be cured. It is a stage where people need to be protected from accidents, infections and disabilities. According to Sir Jamessterling.

Greek: genu = old age

Latera = treatment

TERMINOLOGY

Gerontology

Gerontology is defined as the scientific study of the process and problems of aging.

Elderly care

Elderly care or simply elder care is the fulfillment of the special needs and requirements that are unique to senior citizens.

Geriatrics

Geriatrics is defined as the branch of medicine concerned with medical problems and care of older people.

Elder abuse

Elder abuse is any form of mistreatment that results in harm or loss to an older person.

Neglect

Neglect is a failure of a caregiver to fulfill his or her care giving responsibilities. Self-neglect is failure to provide for one's own essential needs.

Euthanasia

Euthanasia is an action taken by a health care practitioner intended to result in a patient's death

NURSING ASSESSMENT

The geriatric assessment is a multidimensional, multidisciplinary assessment designed to evaluate an older person's functional ability, physical health, cognition and mental health, and socio environmental circumstances. It is usually initiated when the physician identifies a potential problem. Specific elements of physical health that are evaluated include nutrition, vision, hearing, fecal and urinary continence, and balance.

History collection and physical examination:

History

General considerations

- The history may take more time because of sensory or cognitive impairment or simply because an older patient has had time to accrue numerous details. Several sessions may be required.
- The patient should be recognized as the primary source of information. If doubts arise about accuracy, other sources should be contacted with due respect paid to the sensitivities and confidentiality of the patient. When interviewing the patient and caregiver together, ask questions first to the patient, then to the caregiver.
- If the patient's responses to initial questions are clearly inappropriate, turn to the mental status exam immediately.
- The patient should be dressed and seated. The physician should also be seated and facing the patient at eye level, speaking clearly with good lip movement. If the patient is severely hearing impaired and an amplifier is not available, write questions in large print.
- Use honorifics (i.e., Mr., Mrs., Miss, or Ms.) unless the patient specifically requests you to do otherwise.

Areas requiring special emphasis

- **Function** - Pay attention to deficits in basic and instrumental activities of daily living (ADL). Prepare to assess those systems in the physical examination, looking for reversible

conditions that could upgrade function, e.g., treatment of arthritis to improve dressing capability.

- **Medications**- Polypharmacy and excessive dosages are common causes of iatrogenic illness. A "paper bag" test is often useful to explore this possibility, i.e., ask the patient or caregiver to gather all medications into a paper bag and bring it to the office visit. Be sure to include over-the-counter (OTC) preparations.
- **Review of systems**--Cardiovascular illness is the major cause of death in older adults and these systems should be investigated thoroughly. Of particular importance also are: weight change and gastrointestinal (GI) symptoms, headache (temporal arthritis), dizziness and falls, sleep pattern, sensory impairment, constipation and other changes in bowel habits (colon cancer), urinary pattern and incontinence, sexual dysfunction, depression, cognitive impairment, transient paralysis, paresthesias or visual changes (transient ischemic attack), musculoskeletal stiffness or pain (osteoarthritis or polymyalgia rheumatica).
- **Social history** - Assessment of lifestyle, affect, function, values, health beliefs, cultural factors and caregiver issues is also important.
- **Nutritional history**- Performing the basic nutritional assessment will identify patients at risk of malnutrition and in need of referral for dietetic consultation.

Physical Examination

- **General Observation and Vital Signs:**

Check:

a. Signs of ADL deficits, poor hygiene, disheveled appearance. .

b. Rectal temperature if patient is seriously ill because of blunted immune response

c. Orthostatic changes in blood pressure and pulse.

d. Osler's maneuver if systolic BP is greater than 160 to screen for "pseudohypertension"-

positive if radial artery is palpable with cuff inflated above systolic BP level.

e. Weight (at each visit to identify losses early and to establish a pattern).

f. Signs of malnutrition or trauma (elder abuse and neglect or falls).

- **Skin**--Neoplasm (especially in sun exposed areas), nipple retraction, peau d'orange (orange skin).
- **ENT**--Visual acuity, lens exam for cataracts, fundoscopy (glaucoma, hypertension, diabetic retinopathy), visual fields, extraocular movements (stroke).

a. Gross auditory acuity, otoscopy to determine possible reversible causes of hearing loss and disequilibrium (cerumen impaction, serous otitis media, ruptured tympanic membrane.
b. Inspect the mouth after removal of dentures to assess conditions that may affect nutrition (neoplasm, stomatitis, oral health, adequacy of dentures).
c. Palpate temporal artery for tenderness, thickening or nodularity in the patient complaining of headaches.

- **Neck**

a. Dix-Hallpike positional test maneuver for benign positional vertigo (Dizziness).
b. Jugular venous pulse is better observed on the right side since compression of the left innominate vein by an elongated aortic arch may cause false distension on the left.

- **Cardiovascular**

a. PMI may be displaced by kyphoscoliosis, so palpation is less reliable to determine cardiomegaly. Atrial and ventricular arrhythmias are common. Systolic murmurs are frequently present and most are due to benign aortic sclerosis. Symptoms, risk of morbidity and special characteristics that suggest aortic stenosis or endocarditis should guide evaluation. Diastolic murmurs are always important, as are right and left ventricular S3 gallops.
b. Signs of arterial insufficiency (hair loss, bruits, and decreased pulses) and venous disease (stasis skin changes and edema) are common. Most peripheral edema is venous insufficiency not congestive heart failure (CHF) although the latter is common and should be ruled out. (The effects of diuretics on perfusion and electrolyte balance usually outweigh cosmetic benefit.)

- **Lungs** Age-related changes in pulmonary physiology and age-associated pulmonary pathology often result in rales that may not indicate pneumonia or pulmonary edema. Localized wheezes may indicate an obstructing bronchial lesion (carcinoma).
- **Breast exam**--Tumors may be easier to palpate because of atrophy and less fibrocystic disease. Remember, men may have gynecomastia or malignancy.
- **Abdomen**

a. Patients who are unable to lie flat (kyphoscoliosis or cardiopulmonary disease) may give the

impression of distension. This phenomenon and commonly occurring pulmonary hyperaeration may cause the liver edge to be palpable below the costal margin without hepatomegaly. This must be assessed by percussion.

b. Peritoneal signs may be blunted or absent in frail elderly patients

c. Palpation will assess urinary retention (bladder can be percussed also) or aortic aneurysm. Ventral, inguinal and femoral hernias should be checked for reducibility. The sigmoid colon will often be palpable and a fecal impaction may present as a left lower quadrant mass.

- **Extremities**--Arthritis (rheumatoid, degenerative and crystalline), deformities, contractures, injuries, podiatric care, poor hygiene all increase the risk of pain, infection and gait disturbances.
- **Rectal**--Assess for diseases of the prostate, fecal impaction, integrity of sacral reflexes in persons with impotence, spinal stenosis or posterior column findings, hemoccult.
- **Pelvic examination**--Assess for pelvic prolapse, uterine, adnexal or vaginal neoplasm, infections, estrogen deficit. The lithotomy position may produce discomfort in the osteoarthritic patient. An alternative is the left lateral decubitus position with the right hip flexed more than the left. Pap smears should be done in elderly women. Speculum examination may be painful and difficult due to atrophic changes and vaginal stenosis. A pediatric speculum is often necessary and, occasionally, the examination is so difficult that gynecologic consultation is indicated.
- **Neurological**

a. Mental status examination should be performed in all patients to establish a baseline in the event of future dysfunction (Mini-Mental State Examination).

b. Deep tendon reflexes and vibratory sense may be decreased normally.

c. Deficits of language, coordination and other subtle focal findings may indicate cerebrovascular disease that is responsible for cognitive impairment or deficits in instrumental ADL's.

d. Extrapyramidal signs (muscle rigidity, tremor) may indicate either adverse effects of neuroleptic medication or Parkinson's disease. In most instances, intention tremor and some resting tremors are benign conditions. Unilateral tremors may indicate stroke. A resting tremor with a "pill-rolling" character is worrisome as is any tremor that impairs function

AGEING:

Aging is the process of becoming older. In the broader sense, ageing can refer to single cells within an organism which have ceased dividing. In humans, ageing represents the accumulation of changes in a human being over time, encompassing physical, psychological, and social change. Reaction time, for example, may slow with age.

Effects of Ageing:

A number of characteristic ageing symptoms are experienced by a majority or by a significant proportion of humans during their lifetimes. Commonly people older than 65 are called 'OLD'.

- **Young old 65-74**
- **Middle old 75- 84**
- **Old old 85-100**
- **Elite old over 100**

DEMOGRAPHY

Demographics is the statistical study of human populations. The collection of demographic information is an ongoing process. One important piece of demographic information is life expectancy. Life expectancy is the number of years an average person can expect to live. Projected from the time of birth, life expectancy is based on the ages of all people who die in a given year. The life expectancy throughout history has been low because of environmental hazards, wars, accidents, food and water scarcity, inadequate sanitation and contagious diseases.

• During the biblical times, the average life expectancy was approximately 20 years. Some people did live significantly longer but 40 ears was considered a good, long life.

• By 1776, when the declaration of independence was signed, the life expectancy had risen to 35 years.

• By 1860s, at the time of American civil war, the life expectancy had increased to 40 years, the 1860 census revealed that 2.7 % of the American population was older than 65 years.

By the 20th century, the overall life expectancy had increased to 47 years, and 4% of the American population was 65 years of age.

• A child born in the United States in the year 2004 has an average life expectancy of nearly 78.4 years.

• Projections indicate that the child born in 2010 will have a life expectancy of 78.4 years.

• Since the beginning of the 20th century, advances in technology and healthcare have dramatically changed the world, especially in the industrialized nations.

• Diseases such as cholera, typhoid have been eliminated or reduced by sanitation and hygienic practices.

• Today, vaccines can be given to those who are at higher risk and treatment can be given to those who become infected.

• A longer life is a worldwide phenomenon. Almost 8% of the world population is age 65 or older.

• According to US, department of state, for the first time recorded history, the number of people over age 65 is projected to exceed the number of children under age 5.

In 2008 an estimated 39 million people, or 1 out of 8 people, age 65 or older, lived in the United States.

AGING MYTHS AND REALITIES:

Myths and **stereotypes**

Older adults make up the old stereotyped aged group. Some of the myths, misconceptions and negative stereotypes about the older people stem from our culture's values and belief. Many people perceive older people as senile, sick and making few worth wide contributions to society.

1. Most older people are Senile or Demented

Getting a little forgetful is a normal part of aging. It is normal to become so forgetful that it is impossible to manage the tasks of very day life.

• Senility or dementia as it is more commonly called today is a severe form of memory loss. It is not normal. There are a variety of causes of dementia. Some dementias are more severe than others. Some can even be reversed.

Malnutrition, depression, dehydration, and drug interactions can all lead to dementia. Depression can be treated with talk therapy. Or medication, and the dementia from depression may be

reversed. Once the person receives proper nutrition and or adequate liquids, the dementia may lift. Physicians should always be informed of all medications a person is taking to avoid the dementia that can result from bad
combinations of drugs.

• More severe and long-term forms of dementia are caused by diseases such as Parkinson's, Creutzfeldt Jacobs, strokes, or brain injuries. Alzheimer's disease is the most common kind dementia and causes severe memory loss and confusion.

• Alzheimer's disease creates physical changes in the brain that lead to severe dementia. People with Alzheimer's disease eventually fail to recognize their own family members. They even fail to recognize themselves. There is no cure for Alzheimer's disease and the cause is still unknown. Researchers estimate that about 4 million older adults have Alzheimer's disease. That means that 31 million older adults do not have Alzheimer's disease. It is true that the risk of developing Alzheimer's increases with age

• Senility is an inaccurate term used to refer to dementing conditions that are always caused by pathologic changes. Most people age 65 and older are not mentally disturbed. Significant, cognitive impairments are consequences of disease that affects less than 5% of people ages 65 - 74 and about 25% of people older than age 85.

2. Most older people feel miserable and depressed most of the time

• Studies of happiness, morale and life satisfaction reveal that older people are just as happy as when they were younger. Only about one – third of older people shows signs of depression.

3.Older people cannot work as effective as younger people

• On the contrary, studies show that older workers produce more consistent output and have less job turnover, fewer accidents and less absenteeism than younger workers.

• Employers know that this is simply not true. Nearly half of all American businesses employ retired workers. Older employees produce high quality work. They draw on years of experience to solve problems.

• Older workers are known to be highly motivated, are flexible about work schedules, and have low rates of absenteeism. Given the opportunity, older workers are excellent mentors for younger workers

4. Older people cannot learn complex new skills and

experience decline in intellectual ability.

• Older adults are capable of learning new things, but the speed at which they process information is slower.

• Healthy older adults show no decline and sometimes show improvement in some cognitive skills, such as wisdom, judgment, creativity and common sense.

5.Most older people are sick and need help with daily activities

• In fact 80% of older people are healthy enough to carry on their life style. About 15%have chronic health conditions that interfere with the daily lives and another 5% are institutionalized.

6. Older people are set in their ways and cannot change

• People tend to become more stable in their attitude as they age, but they adapt too many social changes and changes in life style.

• Older people may require to change more frequently than they were younger because of major events in their lives.

7. Most old people are alone and lonely.

• This is not true at all! Friends and family are very important in the lives of older adults. In fact, the number of close friends remains relatively stable throughout life. It's true, the number of casual friends may decrease, but the number of close friends stays the same.

• People who have many close friends throughout life continue to have many close friends as they age. Those who have only a small circle of friendships earlier in life, keep a small circle of friends later on.

• Families remain close even in the later years. In fact, 80% of parents over the age of 65 see at least one of their adult children every 1 to 2 weeks. More than half of older parents have seen an adult child within the past 24 hours. Over 50% of all older adults live within a 10-minute drive of one or more of their grown children.

• Grandparents also have frequent interactions with their grandchildren. Grandparent-grandchildren contacts are often centered on a special event such as attending a birthday party or school activity. Three out of four grandparents see their grandchildren at least every week or two. Half see their grandchildren every few day

8. Most old people are in poor health.

• Another myth of aging is that being old means being sick. Physical changes occur with age. Thinning hair and sagging skin are normal physical changes that happen with age.

• Older adults have a higher risk of developing certain diseases. Arthritis, heart disease, osteoporosis, diabetes, and cancer are more common among older adults than younger people.

• But even when they have one of those diseases, older adults make changes in their lives so they can remain independent.

• In general, older people describe themselves as pretty healthy. More than two-thirds of people over 65 years of age told researchers that they are in good, very good, or excellent health. More than half of those over 85 years of age said that they are in good, very good, or excellent health

9. Old people are more likely to be victims of crime.

The notion that older people are "prisoners in their own homes" because they are afraid of crime is a great exaggeration.

• In fact, older adults are less likely than younger people to be robbed, assaulted, or raped. In spite of this reality, older adults are more fearful of crime. There are good reasons to be afraid.

• Crime is a serious problem in many neighborhoods. In those neighborhoods, everyone is at risk, not just older people.

• Many older adults are afraid because they live alone in urban or inner city neighborhoods or are alone out on the farm or ranch.

• Older adults fear they could not defend themselves because they are not as strong as an attacker might be.

They are afraid that they cannot run fast enough to get away safely.

• The truth is that older adults are more at risk of crime at the hands of their family members or caregivers than from strangers.

• Family members or caregivers may physically abuse or steal from an older adult in their care.

10. **Most older people live in poverty.**

• In 1959, one in three older adults lived in poverty. That is why the federal government improved Social Security and strengthened the laws protecting private pensions. Medicare, and programs for nutrition, housing, and transportation were also developed in the 1960s to help older Americans.

• Those programs have been very successful in reducing poverty among the elderly. Today only one in ten older adults' lives in poverty

CONCEPTS AND THEORIES OF AGEING:

PSYCOSOCIAL THEORIES

Maslow's Hierarchy of Needs (1943)

◦ Erikson's Psychological Stages (1956)

◦ Selective Optimization with Compensation (SOC, 1980)

SOCIOLOGICAL

◦ Activity

◦ Disengagement Theory

◦ Continuity

BIOLOGICAL

Damage

◦ Genetic

◦ General imbalance

ERIKSON PSYCHOSOCIAL MODEL, AND MASLOW'S HIERARCHY OF NEEDS:

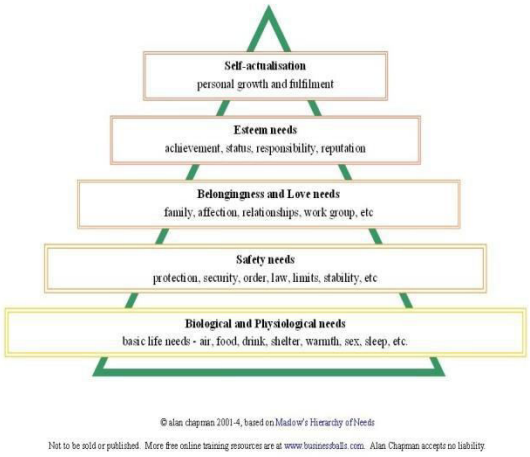
Erik Erikson developed a theory of social development that relies on stages, except that Erikson thought of stages as a series of psychological or social (or **psychosocial**) **crises**—turning points in a person's relationships and feelings about himself or herself (Erikson, 1963, 1980).

Stage	Period	Personality Attributes	Age
1	Early Infancy	Trust vs. Mistrust	1–1 ½
2	Toddler	Autonomy vs. Shame and Doubt	1 ½ –3
3	Early Childhood	Initiative vs. Guilt	3–6
4	Middle Childhood	Industry vs. Inferiority	6–12
5	Adolescence	Identity vs. Identity Confusion	12–18
6	Young Adulthood	Intimacy vs. Isolation	19–40
7	Middle Adulthood	Generativity vs. Stagnation	40–65
8	Older Adulthood	Integrity vs. Despair	65+

MASLOW'S HIERARCHY OF NEEDS

Maslow's hierarchy of needs is a motivational theory in psychology comprising a five-tier model of human needs, often depicted as hierarchical levels within a pyramid. From the bottom of the hierarchy upwards, the needs are: physiological (food and clothing), safety (job security), love and belonging needs (friendship), esteem, and self-actualization.

Needs lower down in the hierarchy must be satisfied before individuals can attend to needs higher up.



SELECTIVE OPTIMIZATION WITH COMPENSATION:

Selective Optimization with Compensation is a strategy for improving health and wellbeing in older adults and a model for successful ageing. According to the SOC model, successful aging encompasses selection of functional domains on which to focus one's resources, optimizing developmental potential (maximization of gains) and compensating for losses

DISENGAGEMENT THEORY:

The Disengagement Theory, one of the earliest and most controversial theories of aging, views aging as a process of gradual withdrawal between society and the older adult. This mutual withdrawal or disengagement is a natural, acceptable, and universal process that accompanies growing old. It is applicable to elders in all cultures, although there might be variations. According to this theory, disengagement benefits both the older population and the social system.

ACTIVITY THEORY:

The theory was developed by Robert J. Havighurst in 1961.This theory argues that actively engaged older persons have greater life satisfaction. It takes the view that the ageing

process is delayed and the quality of life is enhanced when old people remain socially active. The theory assumes that a positive relationship between activity and life satisfaction.

CONTINUITY THEORY [Atchley, 1971]:

The continuity theory of normal aging states that older adults will usually maintain the same activities, behaviors, relationships as they did in their earlier years of life. According to this theory, older adults try to maintain this continuity of lifestyle by adapting strategies that are connected to their past experiences. The theory considers the internal structures and external structures of continuity to describe how people adapt to their circumstances and set their goals.

DAMAGE

The damage or error theory includes:

1) Wear and tear theory.
2) Rate of living theory.
3) Cross-linking theory.
4) Free radicals theory

GENETIC THEORY

- The genetic theory of aging states that lifespan is largely determined by the genes we inherit. According to the theory, our longevity is primarily determined at the moment of conception, and is largely reliant on our parents and their genes.
- The basis behind this theory is that segments of DNA that occur at the end of chromosomes, called telomeres, determine the maximum lifespan of a cell.

GENERAL IMBALANCE

General imbalance theories of aging suggest that body systems, such as the endocrine, nervous, and immune systems, gradually decline and ultimately fail to function. The rate of failure varies system by system.

COGNITIVE ASPECTS OF AGING

Cognition is the set of all mental abilities and processes related to knowledge: attention, memory and working memory, judgment and evaluation, reasoning, problem solving, decision making, comprehension and production of language.

- Intelligence
- Attention
- Memory
- Language
- Reasoning and problem solving
- Speed of processing

FACTORS AFFECTING COGNITIVE AGING

- Medications which may produce side effects such as drowsiness and mental dullness.
- Sensory changes which can interfere with the processing of information.
- Health related changes such as arthritis and pain.
- Changes in mood such as depression and anxiety.

AGEING PROCESS

The ageing process is the gradual, decreased ability of the body to functions and to heal itself.

There are three main factors that influence the body's ageing process.

- First as we grow older, The body **actually create non-functional cells**, leading to more rapid deteriorate of the body's functions with advantage age. A large percentage of our cells even through they were present are useless. These non-functional cells sometime interfere with normal cellular process.
- The second part of the ageing process related to **Cellular damage** that cause the shortening of DNA. As time passes increased damage to healthy DNA leeds to accelerated cell death and our old bodies simply cannot generate cells fast enough to compensate for the loss. This process is most visible and obvious in our skin the older we get the thinner our skin becomes
- The third part of the ageing process involves the **Cellular decoregulation** of our oxidative enzymes such as superoxide dismutase and catalase and glutathione perxoidase, making our antioxidant defence less efficient with age.

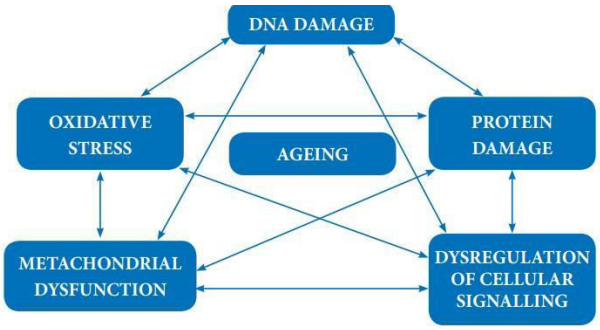
The Ageing Process Starts in Human Organ

From the moment of birth human beings experience continuous aging, however before the age of 25 the body can recover from temporary con sequencence by itself, after 40 years old the ody begins its real journey of ageing.

Common Signs and Symptoms of Ageing

- Increase susceptibility to infection.
- Greater risk of heat, stroke of hypothermia.
- Slight decreases in height as the bones of our spine get spinner and the lost some height.
- Bones break more easily.
- Joint changes ranging some minor stiffness to severe arthritis.
- Stooped posture.

Mechanism of Ageing



BIOLOGICAL PROCESS OF AGEING

- The genes determine the lifespan, genes may have a role to play in the ageing process.
- Wear and Tear of important organs by continues functioning.
- Accumulation of toxic materials (E.g.. cholesterol) in the vital organ like heart, brain eye and thereby damaging them.
- Loss of important genetic material during DNA repair.
- Accumulate of stress over lifetime with its resultant effects.
- Exertion of production and deficiency of important hormones e.g. growth hormone and androgen, estrogen and thyroid hormones.
- Evaluation of ageing helps to explain why survival, reproductive success, and functioning of almost all living organism decline at old age.

AGE RELATED BODY SYSTEM CHANGES

SENSORY SYSTEM –

Hearing Loss is usually in ability to hear high frequency sounds.

Hearing loss can lead to social isolation and should be addressed. Hearing aids cannot address all types of hearing loss.

Vision

- Not all older people have impaired vision

Loss of ability to see items that are close up begins in the 40's

- Size of pupil grows smaller with age: focusing becomes less accurate
- Lens of eye yellows making it more difficult to see red and green colors
- Sensitivity to glare increases
- Night vision not as acute

Taste and Smell

- Some loss in taste and smell as one ages, but loss is usually minor and not until after age 70
- Many older people often complain of food being tasteless

Pain and Touch - With age, skin is not as sensitive as in youth

Contributing factors include:

- Loss of elasticity
- Loss of pigment
- Reduced fat layer

BRAIN AND CENTRAL NERVOUS SYSTEM

- Without illness, a person can expect high mental competence well past age 80.

- Physical reactions are slowed due to increased “lag” time of neurons transmitting information: Slowing manifests itself in the learning process.
- Unfamiliar or high stress activities cause an older person to perform more slowly.
- Throughout adulthood, there is a gradual reduction in the weight and volume of the brain. This decline is about 2% per decade. Contrary to previously held beliefs, the decline does not accelerate after the age of 50, but continues at about the same pace from early adulthood on. The accumulative effects of this are generally not noticed until older age.
- There is neuronal loss in the brain throughout life (the amount & location varies). J. Ger. 47: B26, 1992.
- Loss is chiefly gray matter not white matter
- There is some evidence that although some neuronal loss occurs with age, many neurons have ↑ dendrite growth which may (at least partially) compensate for neuronal loss in some areas of the brain.
- Slowed neuronal transmission
- Changes in sleep cycle: takes longer to fall asleep, total time spent sleeping is less than their younger years, awakenings throughout the night, increase in frequency of daytime naps
- Sense of smell markedly decreases
- Intellectual functioning defined as “Stored” memory increases with age.
- Problem solving skills increase with age.
- Older people are able to learn very well.

MUSCLES AND BONES

- Loss of elasticity of connective tissue can cause pain and impair mobility
- No way to prevent these changes®
- Maintain bone health through diet, exercise and getting adequate rest
- Always consider medication side effects when assessing mobility concerns

G I track

- Basal and maximal stomach acid production diminish sharply in old age. At the same time, the mucosa thins. Very little seems to happen to the small bowel. (J. Clin. Path. 45: 450, 1992)

- Decline in number of gastric cells results in decreased® production of HCL (an acidic environment is necessary for the release of vitamin B12 from food sources).
- Decrease in amount of pancreatic enzymes without appreciable changes in fat, CHO, or protein digestion.
- Diminished gastric (eg pepsinogen) & pancreatic enzymes result in a hindrance to the absorption of other nutrients like iron, calcium, & folic acid.
- Hepatic blood flow, size & weight decrease with age. Overall function, however, is preserved, but may be less efficient in the setting of drug overload.
- Constipation is more common in older adults due to slowed circulation, reduced sense of thirst, lessened activity level and decreased tone in stomach & intestines which results in slower peristalsis and constipation.
- Emotions play a significant role in appetite and digestion

SKIN-EPIDERMIS

- The number of epidermal cells decreases by 10% per decade and they divide more slowly making the skin less able to repair itself quickly.
- Epidermal cells become thinner making the skin look noticeably thinner.
- Changes in the epidermis allows more fluid to escape the skin.
- The rete-ridges of the dermal-epidermal junction flatten out

  Making the skin more fragile and making it easier for the skin to shear.

  This process also decreases the amount of nutrients available to the epidermis by decreasing the surface area in contact with the dermis.

  = slower repair/turnover

SKIN-DERMIS

- These changes cause the skin to wrinkle and sag.
- The dermal layer thins. Less collagen is produced.
- The elastic fibers that provide elasticity wear out
- Decrease in the function of sebaceous & sweat glands contributes to dry skin.
- The fat cells get smaller. This leads to more noticeable wrinkles and sagging.

SKIN-TOES & NAILS

- Toes & nails become thicker & more difficult to cut.
- Grow more slowly.
- May have a yellowish color.

SKIN-HAIR

Men:

- Most men loose the hair about their temples during their 20s.
- Hairline recedes or male pattern baldness may occur.
- Increased hair growth in ears, nostrils, & on eyebrows.
- Loss of body hair.

Women

- Usually do not bald, but may experience a receding hairline.
- Hair becomes thinner.
- Increased hair growth about chin & around lips.
- Loss of body hair.

HEART/CIRCULATORY SYSTEM

- Deposits of the "aging pigment," lipofuscin, accumulate.
- The valves of the heart thicken and become stiffer.
- The number of pacemaker cells decrease and fatty & fibrous tissues increase about the SA node. These changes may result in a slightly slower heart rate.
- A slight increase in the size of the heart, especially the left ventricle, is common. The heart wall thickens, so the amount of blood that the chamber can hold may actually decrease.
- Age changes make the heart less able to pump efficiently.
- Less blood pumped results in lowered blood oxygen levels.
- The limits of the heart to exert itself are reduced with age.
- Medications processed and eliminated differently than in young adult

RESPIRATORY SYSTEM

- How well the lungs supply the body with oxygen seems to relate directly to age.
- The amount of oxygen delivered to the bloodstream and the rate of blood flow declines with age.
- Even with the lung capacity remaining normal, the lung tissues seem to lose facility for making the oxygen-to-blood transfer to the bloodstream.
- Since older people can not breathe as fast, there is less oxygen entering the blood per minute. Less oxygen in the system cuts down the amount of work that can be done.
- The number of cilia & their level of activity is reduced.
- Glandular cells in large airways are reduced.
- Decreased number of nerve endings in larynx.
- The cough reflex is blunted thus decreasing the effectiveness of cough.
- Decreased levels of secretory IgA in nose & lungs results in decreased ability to neutralize viruses.
- The number of functional alveoli decreases as the alveolar walls become thin, the aveoli enlarge, are less elastic.
- Decreased elasticity of the lungs may be due to collagen cross-linking.
- The loss of elasticity accounts for "senile hyperinflation"; unlike in smokers, there is little or no destruction of the alveoli.
- The FEV1 drops by 30 mL/year during your adult life

BLOOD VESSELS

- Arteries lose elasticity with age making heart have to pump harder to circulate blood, this is mainly due to: thickening & stiffening in the media of large arteries is though to be caused by collagen cross-linking.
- smaller arteries may thicken/stiffen minimally; their ability to dilate & constrict diminishes significantly.
- In veins age-related changes are minimal and do not impede normal functioning.

KIDNEY

- Renal blood vessels become smaller & thicker reducing renal blood flow.
- Decreased renal blood flow from about 600ml/min (age 40) to about 300ml/min (age 80)

- Kidney size decreases by 20-30% by age 90. This loss occurs primarily in the cortex where the glomeruli (of gloms decrease by 30-40% by age 80) are located.
- Decreased GFR. Typically begins to decline at about age 40. By age 75 GFR may be about 50% less than young adult. Current research shows that this is not true for all elders, however.
- There is a decline in the number of renal tubular cells, an increase in tubular diverticula, & a thickening of the tubular walls is decreased ability to concentrate urine & clear drugs from the body.
- Overall kidney function, however, remains normal unless there is excessive stress on the system.
- The muscular ureters, urethra, & bladder lose tone & elasticity. The bladder may retain urine. This causes incomplete emptying.
- Decline in bladder capacity from about 500-600mL to® about 250ml so less urine can be stored in the bladder.
- This causes more frequent urination.
- The warning period between the urge and actual urination is shortened or lost as one age.

ENDOCRINE SYSTEM

- In most glands of the body there is some atrophy & decreased secretion with age, but the clinical implications of this are not known.
- What may be different is hormonal action. Hormonal alterations are variable & gender-dependent.

REPRODUCTIVE SYSTEM

Women

- The "climacteric" occurs (defined as the period during with reproductive capacity decreases (ie, ovarian failure) then finally stops = loss of estrogen & progesterone; FSH & LH ↑↑). This is also described as the transition from peri-menopause (~age 40s) to menopause.
- Thinning & graying of pubic hair
- Loss of subcutaneous fat in external genitalia giving them a shrunken appearance
- Ovaries & uterus decreases in size & weight

- Skin is less elastic + loss of glandular tissue gives breasts a sagging appearance
- Other physical changes may include hot flashes (can cause sleep deprivation if they occur at night), sweats, irritability, depression, headaches, myalgias. Sexual desire is variable. The symptoms are typically present for about 5 years
- Atrophy of vaginal tissues due to low estrogen levels = thinning & dryness occurs; agglutination of labia majora & minora may occur.

Men

- Testosterone decreases, testes become softer & smaller Erections are less firm & often require direct stimulation to retain rigidity
- Though fewer viable sperm are produced & their motility decreases, men continue to produce enough viable sperm to fertilize ova well into older age.
- Less seminal fluid may be ejaculated
- The prostate gland enlarges; this often results in compression of the urethra which may inhibit the flow of urine.

HEMATOLOGIC SYSTEM

- A decrease in total body water is observed with aging. Blood volume therefore decreases.
- The number of red blood cells (and correspondingly, are reduced, but not significantly.
- Most of the white blood cells stay at the same levels, but lymphocytes decrease in number and effectiveness.
- Overall, cell counts and parameters in the peripheral blood are not significantly different from in young adult life.
- However, the cellularity of the bone marrow decreases moderately. For example, 30% cellularity on an iliac crest biopsy (which would be very low for a young adult) is not unusual in an older person.

IMMUNE SYSTEM

- The efficiency of the immune system declines with age, but this is variable among persons.
- Nonspecific defenses become less effective

- The ability of the body to make antibodies diminishes.
- Autoimmune disorders are increased in older adults. Not everyone believes that the increased incidence of autoimmune disease is an expected part of aging, but all acknowledge the increase in findings of positive rheumatoid factor, anti-nuclear antibody, and false positive syphilis screens in healthy older adults.
- The thymus gland (which produces hormones that activate T cells) atrophies throughout life. The peripheral T-cells (J. Immunol. 144: 3569, 1990)® proliferate much less exuberantly in old age.

Common infections are often more severe with slower recovery & decreased chances of developing adequate immunity

PSYCOSOCIAL ASPECT OF AGEING

Psychosocial problems occur at any age. Depressive illness is considered to be most common psychiatric diagnosis. Mental disorders are believed to be a sign of mental weakness among elders. Depression is co-existed with many of their medical illness.

Geriatric Depression 17%-37% in primary care settings & 30% have major depression, Most of the time GD go undetected leading to major illness & death

Risk factors

- *Advancement in age* - Living in longterm care settings
- *Women* - Co-morbid physical illness/disability
- *Unmarried* - Lack of social support/death of spouse
- *Urban area* - Low socioeconomic status

Common signs and symptoms

- Apathy
- Lack of interest in pleasurable activities
- Withdrawal from friends
- Anorexia resulting in weight loss No
- pleasure in life
- Not sleeping well
- Feeling of worthlessness/hopelessness

- Increased dependency
- Multiple vague somatic complaints
- Other behavioral changes: Grief reaction/crying spells

Physical illness

- Metabolic disorders
- Endocrine disorders
- Neurological disorders
- Cancer
- Cardio-vascular changes
- Pulmonary changes
- Anemia
- Collagen vascular diseases

Management

Ensure client safety (Self-destructive behaviors/suicidal ideations)

• Meet the physical needs

• Empathizing the emotional responses of the individuals

• Group format interventions

• Psychopharmacologic based drug a

• Teaching alternative coping skills

Client education

- Assertiveness, problem solving, & stress management techniques
- Include family members when possible
- Use group format
- Provide ongoing educational sessions

Suicide(risk)

76% elders who attempted suicide have diagnosis of affective diseases

• Passive/sub-intentioned suicides are common among elders

– Refusing necessary medications

– Ignoring the necessary life-saving measures

– Involve in risk-related behaviors (driving recklessly)

Risk factor

- Age - (75-85),
- Socio income status
- Male gender Living alone
- Chronic illnesses Chronic pain
- Substance misuse
- Recent personal loss
- Economic/social/prestige loss
- Family History of suicide Un employment/widow
- Prior attempts/threats
- Social isolation
- Chronic sleep problems like Depression

Defining characteristics

- Hopelessness/helplessness
- Psychomotor agitation/retardation
- Verbalization of suicidal ideation
- Ruminations about death
- Hostile behavior
- Impulsive behavior
- Social isolation; withdrawn behavior
- Cognitive disturbances/impaired concentration

Management

- Focusing on current hazard/crisis to which the client is responding (eg; Loss of loved one etc)
- Limit any immediate danger (removing implements, providing close supervision)
- Discuss the situation with the family/caregivers

Negotiating a no-suicide contract

MEDICATIONS AND ELDERLY

Introduction

An increasing number of chronic conditions affect older people, so they use more medications than any other age group. Approximately 94% of adults between the ages of 65 and

74 yrs take some type of medicines. Although medications improve health and well being, relieving pain, adverse drug reactions are common because of medication interactions and the use of multiple medications.

Drug interactions and adverse effects

- The potential for drug - drug interactions increases with increased medication use and with multiple coexisting diseases that affect the absorption, distribution, metabolism and elimination of medications.
- Medication can affect the appetite cause nausea and vomiting , irritate the stomach, cause constipation or diarrhea and decreased absorption of nutrients.
- They also alter electrolyte balance as well as carbohydrate and fat metabolism.
- Combining multiple medications with alcohol as well as herbal medications further complicates gastro intestinal problems.

Altered pharmacokinetics

Pharmacokinetics is the study of the following

- Absorption: How the drugs get in to the body
- Distribution: where the drugs goes in the body
- Metabolism: How the drug is handled in the body
- Excretion: How the drug is removed from the body
- The physiologic changes can affect drug action in the body.
- The changes can affect the ultimate effects of the drug once its reach the receptor and acts.
- The changes can affect the adherence to a drug regimen

Absorption

Absorption is the process by which the drug gets from the external environment into the body. In older adults several factors often alter absorption of drugs administered by oral, subcutaneous routes

- Changes in the quantity and quality of digestive enzymes or gastric acid secretion.
- Increased gastric PH
- Decreased in the number of absorbing cells
- Decreased GI motility
- Decreased intestinal blood flow and GI emptying time

Distribution

Drug distribution is the process by which drugs move from the circulation system out in to the tissues. Age related changes in the body composition include relatively increase fat and decreased body water, which alter the distribution patterns for most drugs.

- ◉ Decrease cardiac output
- ◉ Dehydration
- ◉ Increased body fat
- ◉ Decreased plasma protein, Inactivity and prolonged bed rest
- ◉ Electrolyte and mineral imbalances

Metabolism

Drug metabolism is the process by which drugs are chemically changed by enzymes. It takes place in the liver and GI tract. Alterations in the drug metabolism increase the risk of drug accumulation and toxicity.

- ◉ Decreased hepatic mass
- ◉ Decreased enzyme activity
- ◉ Decreased hepatic blood flow
- ◉ Decreased microsomal metabolism of drug

Excretion

Clearance is another pharmacokinetic term that describes the elimination of a drug from the body. A drug is usually cleared from the body by liver metabolism. It can be renally excreted.

- ◉ Decreased renal excretion of drug
- ◉ Decreased renal blood flow
- ◉ Decreased GFR
- ◉ Decreased tubular secretion
- ◉ Decreased creatinine clearance

How age affects drug action

- ✔ ody composition
- ✔ Digestive system
- ✔ Hepatic system
- ✔ Renal system

Nursing implications

- Explain the Purpose, side effects and dosage of each medication.
- Provide the medication schedule in writing
- Encourage the use of standard containers without safety lids.
- Destroy old unused medications
- Review the medications schedule periodically and update it as necessary.
- Encourage the patient to take all medications with him or her regularly when visiting the primary health care provider.
- Encourage the patient to inform the primary health center provider about the use of over-the-counter medications and herbal agents, alcohol, and recreational drugs.
- Recommend using one supplier for prescriptions, pharmacies frequently tract patients and are likely to notice a prescription problem such as duplication or contraindications in the treatment regimen.
- Identify a reliable family member or friend who might monitor the patient for adherence.

STRESS AND COPING IN OLDER PEOPLE

Stress is a natural part of life. It is a biological term which refers to the consequences of the failure of a human or animal body to respond approximately to emotional or threat to organism, whether actual or imagined. It autonomic response to environmental stimulus.

Definition

STRESS

Stress is a state of mental tension and worry caused by problems in the life, work etc.

COPING

Coping is the process of contending with life difficulties in an effort to overcome or work through them.

common sources of stress

- Normal aging changes that impair physical function, activities and appearance.
- Disabilities and chronic illness.
- Social and environmental losses of income, roles and activities

- Death or illness of significant others
- Physical and sexual abuse
- Depression, heavy drinking, or insufficient sleep.
- Social issues such as social defect, or relationship conflict

coping with stress

Coping patterns and the ability to adapt to stress are developed over the course of a lifetime and remain consistent with those of earlier life.

Some of the following suggestions may help immediately when stress is constant. It may require more attention.

1. Take one thing at a time
2. Be realistic – learn to say 'No'
3. Visualization –imagination can manage a stressful situation
4. Meditation – 5 to 10 minute of meditation can bring some relief
5. Exercise – 30 minutes of physical activity daily will help to reduce stress
6. Hobbies – take a breath and do something for enjoy to reduce stress.
7. Adopt a healthy life style – rest, food, exercise, avoidance of alcohol
8. Share your feelings with family members or friends – don't try to cope alone.
9. Be flexible and calm.
10. Don't be overly critical

HEALTH PROBLEMS AMONG OLDER ADULTS

Cardiovascular system

- Hypertension
- Ischemic heart disease
- Heart failure
- Peripheral vascular disease
- Varicose veins
- Stroke attack

Nursing intervention:

• Exercise regularly, pace activities

- Avoid smoking
- Eat a low fat, low salt diet
- Weight control
- Check blood pressure regularly
- Participate in stress reduction activities
- Regular medication

RESPIRATORY SYSTEM

- Chronic pneumonia
- Obstructive pulmonary disease
- Dyspnoea
- Breathlessness

Nursing intervention

- Deep breathing exercise regularly
- Avoid smoking
- Take adequate fluids
- Prevent pulmonary infections
- Avoid crowds during cold and flu season
- Wash hands frequently

NEUROLOGIC BEHAVIORAL

- Parkinsonism-characterized by tremor, rigidity, slowness of movement
- Alzheimer disease- loss of short term memory, deterioration in behavior and slowness of thought
- Dementia- it is a chronic or persistent disorder of behavior and higher intellectual function due to organic brain disease.
- Depression, anxiety
- Sleep disturbance

Nursing intervention:

- Advice for hospitalization and encourage visitors
- Teach fall prevention technique

• Environmental safety like sufficient light, proper chairs for seating, elevated toilet seats
• Encourage slow rising from a resting position
• Reduce the risk of falls

GASTROINTESTINAL SYSTEM

- ◉ Problem with speech, chewing and swallowing
- ◉ Constipation
- ◉ Colon gas and fecal impaction
- ◉ Diarrhea
- ◉ Gastro esophageal reflux or hernia
- ◉ Fecal incontinence, prolapsed rectum
- ◉ Dysphagia, anorexia

Nursing intervention:

• Use ice chips
• Mouth wash, brush, massage gums daily
• Eat small quantity, frequent meals
• Eat high fiber, low fat diet, limit laxatives
• Toilet regularly
• Drink adequate fluid
• For appetite serve food attractively and different types of foods

URINARY SYSTEM

- ◉ Renal insufficiency
- ◉ Urinary incontinence
- ◉ Urinary tract infection
- ◉ Enlarged prostate
- ◉ Sexual dysfunction

Nursing intervention:

• Regular supervision is necessary
• Ready access to toilet
• Drink adequate fluids

• Avoid bladder irritants e.g. alcohol, caffeine

• Practice pelvic floor muscle exercise

• Maintain perineal hygiene

• Skin should be clean and dry. Apply cream

• Clean underclothes

REPRODUCTIVE SYSTEM

- Female- breast cancer, cervical cancer
- Vaginal bleeding, vaginal itching and irritation
- Male- prostate cancer

Nursing intervention:

• Health and sexual counseling

• Advice about personal hygiene Delayed erection

MUSCULOSKELETAL SYSTEM

- Paget's disease
- Osteoporosis
- Osteomalacia
- Rheumatoid arthritis
- Spondilosis
- Complaints of back pain and joint pain
- Stiffness of joints
- Fractures
- Foot pathology gait disturbance

Nursing intervention:

• Exercise regularly

• Eat high calcium diet

• Limit phosphorus intake

• Hormones and calcium supplements may be prescribed

SPECIAL SENSE: VISION AND HEARING

- ◉ Visual impairment
- ◉ Hearing impairment
- ◉ Diminished smell or taste

Nursing intervention:

- Wear eye glasses or sun glasses
- Use adequate indoor lighting with area light and night light
- Use magnifier for reading
- Use large lettering to label medication
- Avoid night driving
- Advice for hearing examination
- Allow the individual more time to adjust to the environment
- Use gestures and object to help with verbal communication
- Speak slowly and clearly

DERMATOLOGIC

- ◉ Pressure sores
- ◉ Herpes zoster
- ◉ Dermatitis
- ◉ Pruritus
- ◉ bone structure is prominent

Nursing intervention

Avoid solar exposure

- Cloth dress appropriately for temperature
- Maintain a safe indoor temperature
- Excessive use of soap should be avoided
- Apply cream for lubricate skin

PSYCHOLOGICAL

Memory functioning

- Short term memory deteriorate with age, long term memory does not show similar changes.
- A well educated and mentally active person does not exhibit such changes in faster rate.
- The time required for memory scanning is longer for both recent and remote recall among older people.

• This can be attributed to social or health factors (stress, fatigue, illness), but it can also occur with certain physiological changes due to aging. (decreased blood flow to the brain)

Intellectual functioning

• Fluid abilities or abilities involved in solving novel problems, tend to decline from adult period to old age.

• High degree of regularity in intellectual function present on most of the old age people

• Intellectual abilities of older people do not decline, but do become obsolete.

• Their formal educational experience is reflected in their intelligence performance

◉ Learning ability

• The ability to learn is not decline by age.

• The slowing of reaction time with age and over arousal of central nervous system are noted in old age. It may lead to lower level of performance in tasks which requires high efficiency.

• Ability to learn continue throughout the life, although strongly influenced by personal interests and preferences.

• Accuracy of performances diminishes.

◉ Loss and grief

• By the time individuals reach 60-70 yrs of age , they have experienced numerous losses, and mourning has become a life long process.

• It is impossible for some of the older age people to complete the grief process in response to one loss before the other loss occurs.

• Because the Grief is cumulative, this can result in bereavement over load.

• This can further predispose to depression. Attachment to others

• The need for attachment is consistent through out the life span

• Well being of senior citizens can be contributed through socialization and companionship.

◉ Dealing with death

• Death anxiety among the elderly is more of a myth than reality

• The feeling of abandment, pain and loss may leads to fear or anxiety in elderly

Psychiatric disorders

• The later life constitute a time of especially high risk for emotional distress

• Dementia, depressive disorders, delirium, sleep disorders etc are the most common psychiatric illness seen among elderly

SEXUAL ASPECTS

Changes in female

• Menopause may begin anytime during the 40s or early 50s

• Gradual decline in the functioning of the ovaries and subsequent reduction in the production of estrogen.

• The walls of the vagina become thin and inelastic and vaginal lubrication decreases.

• Orgasmic uterine contractions become spastic.

• All these changes result in vaginal burning, pelvic aching, irritability etc

• In some women these changes result in avoidance of sexual intercourse

• These symptoms are more likely to occur with infrequent intercourse of only one time a month or less

• Regular and more frequent sexual activity result in a greater capacity for sexual performance

Changes in male

• Testosterone production decline gradually as the age increases

• As a result of these hormonal changes the erection takes place slowly and requires more genital stimulation to achieve.

• The volume of ejaculate decreases and the force of ejaculation lessens

• The testis become smaller, but most men continue to produce viable sperm well in to old age.

HEALTH PROMOTION IN ELDERLY

Introduction :

Health maintenance and health promotion is very important. In health care of elderly following points are included:

• Exercise and activity:

• Nutrition and diet:

• Stress management:

• Self care and responsibility :

• Community services:

Exercise and activity:

Balance between exercise and activity is most important for elder person as it decrease risk of many health issues. Exercise also improve nutrition and reduce stress. In addition it decrease risk of hypertension or maintain blood pressure in hypertensive elder person. It increase oxygen saturation and increase lungs capacity. Elder person should do exercise on regular basis as tolerated. They should do light exercise like walking and slow running.

Nutrition and diet:

Maintenance of nutritional status in elder persons are also important because with increase in age digestive capacity diminish. The nutrition should be well balance that has higher amount of calcium, iron and other essential nutrients. Following things should be considered by elder person regarding diet

• Meal time should be kept simple and calm.

• Food is cut in to small pieces to prevent choking.

• Liquids food may be easier to swallow.

• Temperature of the food should be checked to prevent burns.

• Encourage for good mouth care.

• Avoid alcohol.

• Review all prescription and over the counter medication with patient and evaluate nutritional status.

Stress management:

By the time individuals reach 60-70 yrs of age , they have experienced numerous losses, and stress has become a life long process. In addition hormonal changes also cause stress among elderly. So stress management is essential for them. Long term stress cause hypertension, stroke and heart disease. Explain older person about stress management techniques like yoga, exercise meditation etc

Self care and responsibility:

• Older person also need to learn about self care and responsibility. So following instruction can be given to them about self care:

• Monitor blood pressure and blood sugar regularly.

• Diet control and balance diet.

• Stop alcohol consumption and smoking

• Get vision and hearing checked periodically.

• Advice to take proper rest and sleep.

• Exercise regularly.

Community services:

Many community supports exist that help the older person maintain independence. Informal sources of help, such as family, friends, the mail carrier, church members, and neighbors, can all keep an informal watch. Area Agencies on Aging perform many community services, including telephone reassurance, friendly visitors, home repair services, and homedelivered meals. Homemaker and chore services can be obtained at an hourly rate through these agencies or through local community nursing services.

Most commonly used services are as follow:

• Group counseling centre

• Adult day centre

• Rehabilitation centre

• Hospice care

• Ambulatory care centre