TERMINAL ILLNESS

Definition

- A terminal illness is a condition that cannot be cured and is expected to lead to a person's death. It may also be referred to as a life-limiting illness. An illness is considered terminal if it is incurable and expected to result in death. There is no specific list of terminal illnesses; individuals with a terminal condition may have a single illness or multiple conditions (Marie Curie Organization UK, 2022).

HUMAN IMMUNODEFICIENCY VIRUS (HIV)

Definition

- HIV, or human immunodeficiency virus, is the pathogen responsible for causing acquired immunodeficiency syndrome (AIDS).
- When someone is infected with HIV, the virus targets and damages cells that are essential for fighting infections, leading to a weakened immune system. As a result, the individual becomes more susceptible to other infections and diseases, including life-threatening infections and certain types of cancer (HIV.gov, 2013; Vyas, 2023).

HIV-1

- HIV-1, which was discovered first, is the most widespread type worldwide.
- HIV-1 has four groups:
  - Group M (Major)
    - This group is responsible for the HIV pandemic. Nearly 90% of all HIV-1 cases stem from this group.
    - The group has nine named strains: A, B, C, D, F, G, H, J, and K.
  - Groups N, O, and P
    - N (New, Not-M, or Not O group)
    - O (Outlier group) – This group has almost as many variations as the M group.
    - P group – newest group of HIV-1; It was given its own name because of how different it is from the M, N, and O strains

HIV-2

- HIV-2 is most common in western Africa and is becoming more common in India, although numbers there are still relatively small.
- HIV-2 is less fatal and progresses more slowly than HIV-1.
- Groups C and D have been found in two people from Liberia, groups E and F have been

Etiology

- It is primarily transmitted through contact with specific bodily fluids:
  - Blood
  - Semen
  - Pre-seminal fluid
  - Rectal fluids
  - Vaginal fluids
  - Breast milk
- This typically occurs during unprotected sex or by sharing injection drug equipment. It can also be spread from mother to child during childbirth and through contaminated blood transfusions or needle stick injuries (HIV.gov, 2013; Vyas, 2023).

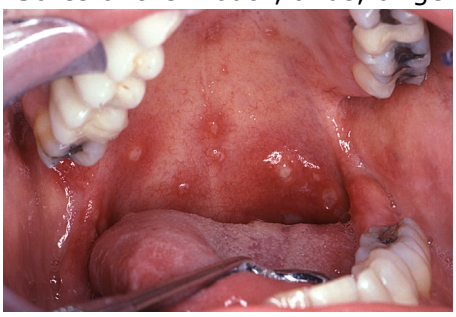
discovered in two people from Sierra Leone, and groups G and H have been detected in two people from the Ivory Coast.	
Prevalence Locally: ● The estimated HIV prevalence in the Philippines for ages 15 to 49 is 0.3% in the year 2022. Globally, in 2017, 1.8 million people were infected with HIV, and 940,000 died of AIDS-related causes. Internationally: ● At the end of 2023, approximately 39.9 million people globally were living with HIV, with estimates ranging between 36.1 and 44.6 million. Around 0.6% of adults aged 15–49 worldwide are affected by HIV, though the impact of the epidemic still differs significantly across various countries and regions (WHO, n.d.)	**Incidence** Locally: ● The Philippines is experiencing the fastest growing HIV epidemic in the Western Pacific region with a 411 percent increase in daily HIV incidence between 2012 and 2023. Internationally: ● HIV impacts individuals of all races and ethnicities in the United States, but certain groups are disproportionately affected relative to their population size. Black/African American and Hispanic/Latino individuals are especially impacted, accounting for over 70% of estimated new HIV infections in 2022 (CDC.gov, 2024). ● In 2023, approximately 1.3 million people [range: 1 million–1.7 million] were newly infected with HIV, and 630,000 [range: 500,000–820,000] people died due to AIDS-related illnesses (WHO, n.d.)

Signs, Symptoms, and Pathophysiology

- According to HIV.gov (2022), HIV presents with varying symptoms depending on what stage of the disease they are in.
- However, the only way of truly determining HIV is through **HIV Testing**. Early and swift testing allows for increased potential for treatment and mitigation of disease progression.
    - Stage 1 (Acute HIV Infection) - within 2 to 4 weeks after infection with HIV; most will present with **flu-like symptoms**, but some may not present with any symptoms.
        - Fever
        - Chills and Night sweats
        - Rashes
        - Muscle aches
        - Sore throat and Mouth ulcers
        - Fatigue
        - Swollen lymph nodes
    - Stage 2 (Clinical Latency/Chronic HIV Infection)
        - May **not present with any symptoms**, but the virus continues to multiply in the body at low levels
    - Stage 3 (Progression to AIDS) - following untreated HIV, a patient may progress to AIDS, showing symptoms that may include:
        - Rapid weight loss
        - Recurring fever or profuse night sweats
        - Extreme and unexplained tiredness
        - Prolonged swelling of lymph glands in the armpits, groin, or neck



- Diarrhea that lasts for more than a week
- Sores of the mouth, anus, or genitals




- Pneumonia
- Red, brown, pink, or purplish blotches on or under the skin or inside the mouth, nose, or eyelids


- Memory loss, depression, and other neurologic disorders

Structural and Anatomical Changes Related to the Condition

- Montoya (2023) states that HIV, being a viral infection, "targets and gradually weakens the body's immune system by **damaging cells called CD4 T cells**." (According to HIV.gov (n.d.), these cells help coordinate immune responses by stimulating other immune cells.) In doing so, the infected individual is more susceptible to other diseases and infections, particularly respiratory and cardiovascular infections, as well as infections that target the digestive system. Pietrangelo and Cherney (2023) also state that visible changes may also be seen on the individual's skin, as the individual's weaker immune system makes them **more vulnerable to viruses** like herpes and shingles, and have a greater risk for skin cancer.

Possible SLP Areas Affected and Their Characteristics

Cognition	• HIV-associated Dementia (according to Mitra & Sharman (2024)) - appears during the chronic phase of infection (white matter is affected) ○ Impairments in executive function, attention, and concentration ○ Memory Problems and Forgetfulness ○ Depressive Symptoms and Apathy

	○ Difficulties with reading ○ Difficulties with **Psychomotor Functions**
Feeding & Swallowing	● Dysphagia due to discoordination between oral structures ● According to HIV.gov (2021), HIV may also cause a Loss of Appetite, Nausea, or Diarrhea
Articulation	● According to Lopez et al. (1994), patients were shown to exhibit **Ataxic Dysarthria** ○ Irregular Articulatory Breakdowns in Consonant-Vowel Timings ○ Slowly-timed decision-making ○ Impaired Procedural Learning ○ Action-Intention Tremors ○ Ataxic Gait (incoordination of muscular movement, variable step length and placement, higher risk of falls) ● According to Mathew and Bhat (2010), "Of all the parameters [tested in the Frenchay Dysarthria Assessment], the **functions of tongue, larynx, reflex and respiration were affected in most of the participants**, though functioning of lips and intelligibility of speech as affected only in some participants" ○ The authors state potential attribution of these symptoms as "a sign of **extrapyramidal dysfunction** in the early stages of the HIV infection." ● Narayanan and Kalappa (2017) states that a child born with HIV [but was typically developing] exhibited: ○ Regression and slurring of speech ○ Restricted mobility and strength of articulators (supporting the potential presence of brain damage)
Voice & Resonance	Ivanova et al. (2023) cite Bhat & Matthew (2007), stating that patients with HIV may present with: ● Shortness of Breath ● Shorter Phonation ● Mild Vocal Tremors
Hearing	● According to Kallail et al. (2014), in a study of 82 HIV-AIDS patients, a common issue exhibited was that of Hearing Problems, particularly related to **Central Auditory Processing** (brainstem disturbance). Another study also indicates a high prevalence of **Sensorineural Hearing Loss** for patients with more advanced stages of the disease.

Types

HIV-1	● HIV-1 is the most common type globally and is responsible for the vast majority of HIV infections (Murphy, 2024).
HIV-2	● HIV-2 is mainly found in West Africa but is gradually spreading to other regions, including the United States, Europe, and India. HIV-2 generally progresses more slowly than HIV-1 and is less transmissible, but it can still lead to AIDS if untreated (Murphy, 2024).

Progression of the Condition

- HIV infection develops in three stages: acute HIV, chronic HIV, and AIDS. In the acute stage, the virus replicates quickly. As the infection transitions to the chronic stage, the rate of viral replication slows, and HIV levels decrease. However, as chronic HIV progresses, the virus begins to multiply more rapidly again, leading to a drop in CD4 cell counts. A decrease in CD4 cells signifies greater damage to the immune system (HIV.gov, n.d.).

Outcome if Left Treated and/or Untreated

- If treated
  - HIV medications lower the amount of the virus in the body, which also decreases the risk of transmitting HIV. One of the primary objectives of HIV treatment is to reduce a person's viral load to an undetectable level, meaning the virus is so minimal in the blood that it cannot be detected by standard tests. Individuals with HIV who consistently maintain an undetectable viral load have virtually no risk of sexually transmitting the virus to HIV-negative partners (HIV.gov, n.d.).
- If left untreated
  - Without treatment, nearly all individuals infected with HIV will eventually develop AIDS. For some, this progression happens within a few years, while others may stay healthy for a decade or even two (Vyas, 2023).

Medical/Surgical Management

- HIV can be diagnosed through rapid diagnostic tests that provide same-day results.
- HIV medicine is called antiretroviral therapy, or ART. If taken as prescribed, ART reduces the amount of viral load to a very low level, which keeps the immune system working and prevents illness. This is called viral suppression. However, there is no cure for HIV infection.

SLP Therapy

- Persons living with HIV may present with disorders in the areas of language, phonology, voice and swallowing.
  - **Speech and language** – phonological errors, raspy and strained vocal quality exacerbated with candidiasis in the oral-laryngeal cavity, expressive language delays, and receptive language delays
  - **Swallowing** – swallowing disorders have been found in 20.8% of people with HIV.
- Given the advances in pharmacological management of HIV, SLPs need to be knowledgeable of how medications can impact communication and swallowing.
- Many aspects of intervention for patients with HIV are the same as intervention for any other individual exhibiting a communication disorder. However, 2 unique elements – the need for collaboration and communication across health care team and monitoring medical status of the patient– are present.

Areas for Evaluation	Evaluation Materials	Treatment Strategies
Cognition	• **Mini-Mental State Exam (MMSE) -** an 11-question measure that tests five areas of cognitive function:	• **Cognitive Exercises** - mnemonics, categorization tasks, and memory-focused speech therapy

	orientation, registration, attention and calculation, recall, and language. It is effective as a screening tool for cognitive impairment with older, community dwelling, hospitalized and institutionalized adults. • **Montreal Cognitive Assessment (MOCA) -** highly sensitive tool for early detection of mild cognitive impairment (MCI) • **Mini-CogTM -** serves as an effective triage tool to identify individuals in need of more thorough evaluation and differentiate patients with dementia from those without dementia. It takes up to only 3 minutes to administer.	• **Compensatory Strategies -** Calendars, note-taking, and memory aids • **Environmental Modifications** • **Routine and Structure** • **Memory Games and Activities** • **Mindfulness and Relaxation**
Feeding & Swallowing	• **Swallowing Screening -** a procedure to identify individuals who require a comprehensive assessment of swallowing function or a referral for other professional and/or medical services (ASHA, 2004). • **Non-instrumental Swallowing Assessment -** to determine the presence (or absence) of signs and symptoms of dysphagia, with consideration for factors such as fatigue during a meal, posture, positioning, and environmental conditions. • **Instrumental Swallowing Assessment -** to evaluate oral, pharyngeal, laryngeal, upper esophageal, and respiratory function as they apply to normal and abnormal swallowing.	• **Prophylactic dysphagia treatment** include exercises that may reduce impairment, maintain function, and assist in recovery. • **Compensatory Strategies and Postural Modifications** • **Swallow maneuvers** are specific strategies that clinicians use to change the timing or strength of swallowing. • **Diet modifications** include changes to the viscosity and texture of the food.
Articulation	• **The Oral Speech Mechanism Screening Examination Revised** -	• **Exercise-based (resistance) training** is targeted at improving

	provides a standardized template for review of oral structure and function. • **The Assessment of Intelligibility of Dysarthric Speech** - quantifies singleword and sentence intelligibility • **Newcastle Dysarthria Assessment Tool (N-DAT)** - evaluates various speech subsystems including respiration, phonation, articulation, and resonance.	strength and range of motion of oral structures to improve articulatory precision, combat the effect of trismus (muscle spasms in the TMJ), and improve quality of life. <u>For Ataxic Dysarthria:</u> • **Rate Control -** Control of speaking rate as a means of maximizing speech intelligibility
Voice & Resonance	• **Perceptual Voice Evaluation** • **Consensus Auditory-Perceptual Evaluation of Voice (CAPE-V) -** describe the severity of auditory-perceptual attributes of a voice problem	• **Physiologic voice therapy** programs strive to balance the three subsystems of voice production (respiration, phonation, and resonance) as opposed to working directly on isolated voice symptoms • The **accent method** is designed to increase pulmonary output, improve glottic efficiency, reduce excessive muscular tension, and normalize the vibratory pattern during phonation.
Hearing	• **Pure tone audiometry (PTA)**: A test that uses an audiometer to produce a range of beeps and whistles for the patient to indicate when they hear. PTA is recommended for HIV-positive patients to detect hearing loss at high frequencies early. • **Ling-Madell-Hewitt Sound Test Battery -** a series of functional listening assessments	• **Auditory-verbal therapy (AVT) -** Focuses on developing audition, or speech discrimination, through listening alone. This approach can help build confidence in hearing and facilitate natural speech production • **Total communication therapy -** Teaches client to use a variety of methods to communicate, including

	• **Audiologic Evaluation of Central Auditory System** ○ Auditory discrimination tests ○ Auditory temporal processing and patterning tests ○ Dichotic speech tests ○ Monaural low-redundancy speech tests ○ Binaural interaction tests	sign language, speech, listening, lip reading, finger spelling, facial expression, and gesture. <u>Specific for Central Auditory Processing:</u> • **Direct Skills Remediation** - includes targeted auditory training techniques aimed at remediating auditory processing deficits • **Computer-Based Training** - computer-based training programs that may address auditory and/or language targets. • **Interhemispheric Transfer Training** - Interhemispheric transfer of information underlies binaural hearing and binaural processing.

<u>Educational Management</u>

- Regular HIV-specific medical check-ups and lab tests
- Antiretroviral therapy (ART) management and adherence support
- Opportunistic infection screening and prevention
- Mental health and substance abuse screening and treatment
- Nutritional counseling and support
- Case management for coordinating HIV care and support services
- Peer support programs and support groups
- HIV medication assistance programs
- Sexual health and prevention counseling
- Linkage to specialized HIV care providers and clinics

<u>Critical Members of the Management Team</u>

Primary HIV Care Provider	• provides general healthcare, preventive care, and routine check-up • This is the team leader, the person who plans the treatment and watches your progress. The Primary provider could be a medical doctor (MD, DO), a physician assistant (PA), or a nurse practitioner (NP).
Infectious Disease	• oversee the overall management of the infection, prescribe

Specialist	antiretroviral therapy, monitor the patient's viral load and CD4 counts, and manage any complications related to HIV or its treatment • An infectious disease expert also can watch for other infections that are more likely to develop if you have HIV, including hepatitis C, tuberculosis, and certain types of pneumonia.
Nurses	• work closely with doctors to manage and monitor HIV treatment • They help provide and coordinate care during your doctor visits and may take blood samples and do other tests.
Psychiatrist and Psychologist	• offer counseling, therapy, and medication management to support mental well-being
Dietitian	• provide dietary guidance to help manage weight, prevent nutritional deficiencies, and optimize overall health
OB/GYN	• manage reproductive health, pregnancy, and childbirth, working to reduce the risk of mother-to-child transmission
Speech-Language Pathologist	• Difficulty swallowing, or dysphagia, is a common symptom of HIV/AIDS, but it often goes untreated. SLPs can help improve the assessment and treatment of dysphagia in this population. • HIV can cause speech, language, and motor control issues in children, especially during the second year of life. SLPs can help children with HIV reach their full potential by addressing developmental issues. • Speech-language, cognitive, and hearing issues are common in HIV/AIDS patients, but they are rarely tested for in medical settings. SLPs can use a battery of tests to identify communication deficits.

Medical Precautions Regarding Speech-Language Therapy

Before	During	After
- Practice proper hand hygiene and sanitation of therapy tools before therapy commences - Monitor Vital Signs to identify baseline levels of functioning before engaging in therapy tasks.	Narayanan and Kalappa (2017) quote ASHA (1989, 1999) in stating precautions to follow when treating patients with HIV, including: - Avoiding contact with the blood and bodily fluids of the patient; use PPE like gloves, masks, and face shields when attending to the patient - Ensure clean food is used when undergoing feeding therapy - patients are at a higher risk for foodborne illness	Narayanan and Kalappa (2017) quote ASHA (1989, 1999) in stating precautions to follow when treating patients with HIV, including: - Properly dispose of used gloves and sanitize therapy areas, restrooms, and therapy materials after every use - Educate the family on the patient's condition and encourage them to support the patient.

	Other Precautions: - Monitor vital signs throughout the session to ensure patient's optimal condition during therapy	Other Precautions: - Monitor vital signs to ensure optimal patient condition before leaving the clinic/therapy areas

PULMONARY FIBROSIS

Definition

- Pulmonary fibrosis is a condition characterized by scarring of the lungs, which leads to difficulty breathing. The scarring thickens and stiffens the lung tissues, impairing the ability to absorb oxygen into the bloodstream.
- It falls under the category of interstitial lung diseases, which are a group of disorders that cause inflammation and scarring around the alveoli, the tiny air sacs in the lungs (American Lung Association, n.d.)

Etiology

- Pulmonary fibrosis can be triggered by inhaling harmful chemicals
- It may also result from certain diseases, medications, or genetic factors.
    - Certain Diseases
        - Rheumatoid arthritis
        - Systemic Sclerosis
        - Sjögren's syndrome
        - Gastroesophageal reflux disease (GERD)
    - Medications
        - Cancer chemotherapy drugs (Bleomycin)
        - Heart condition drugs (Amiodarone)
        - Immunosuppressant drugs (Methotrexate)
        - Antibiotics (Nitrofurantoin)
- However, in many cases, the exact cause remains unknown (American Lung Association, n.d.)

Prevalence

Locally:

- There is a dearth of studies looking into the prevalence of Pulmonary Fibrosis in the Philippines.

Internationally:

- There is considerable variability in idiopathic pulmonary fibrosis prevalence estimates, especially between countries, but the universal prevalence is estimated to be around 494.5 cases per 100,000 people in 2011.

Incidence

Locally:

- There is a dearth of studies looking into the incidence of Pulmonary Fibrosis in the Philippines.

Internationally:

- In 22 studies covering 12 countries, The adjusted incidence estimates (per 10,000 of the population) for idiopathic pulmonary fibrosis ranged from 0.35 to 1.30 in Asia-Pacific countries, 0.09 to 0.49 in Europe, and 0.75 to 0.93 in North America.

Signs, Symptoms and Pathophysiology

- According to Mayo Clinic (2024), a patient with pulmonary fibrosis may present with:
    - Shortness of breath
    - Dry cough
    - Extreme tiredness
    - Weight loss that's not intended
    - Aching muscles and joints

- Widening and rounding of the tips of the fingers or toes, also called clubbing
- Cleveland Clinic (2021) also states the potential for **cyanosis** around the mouth or eyes due to insufficient oxygen intake

Structural and Anatomical Changes Related to the Condition

- Mayo Clinic (2024) states that the scarring and damage associated with pulmonary fibrosis causes there to be "thickened, stiff tissue" in the lungs. Because of this thickened tissue, the lungs are unable to efficiently deliver oxygen into the bloodstream, causing shortness of breath that requires more exertion.

Possible SLP Areas Affected and Their Characteristics

Feeding and Swallowing	• Dysphagia following discoordination between respiration and swallowing function. Alamer et al. (2022) state that patients with idiopathic pulmonary fibrosis were observed to exhibit: ○ Disruptions in the swallowing process from laryngeal elevation onwards ○ Airway penetration, with one patient exhibiting aspiration of liquid without a cough response • Loss of Appetite often due to breathlessness or side effects of antifibrotic treatments (*Eating Well with Pulmonary Fibrosis*, n.d.)
Voice and Resonance	• Inadequate breath for speech (American Lung Association, 2022) • Inflammation of vocal folds due to persistent cough (*Managing a Pulmonary Fibrosis Cough*, n.d.)
Cognition	• Declining cognitive function in terms of **verbal memory, cognitive flexibility, and information processing speed** were exhibited in patients even with mild Idiopathic Pulmonary Fibrosis (Annaka et al., 2024) • Mild cognitive impairment in terms of visuospatial abilities, language, and working memory were found in patients with IPF, with Obstructive Sleep Apnea (OSA) being a potential predictor. (Tudorache et al., 2019)

Types

IDIOPATHIC PF	• This means this type of PF has no known cause.
PF FROM DISEASES	• Some cases of PF are caused by autoimmune diseases like rheumatoid arthritis, scleroderma or Sjogren's syndrome.
FAMILIAL PF	• PF is considered familial when two or more members within the same family have idiopathic pulmonary fibrosis (IPF) or any other form of idiopathic interstitial pneumonia (IIP).
PF FROM EXPOSURES	• PF can be caused by exposure to hazardous materials

Progression of the Condition

- Patients with pulmonary fibrosis experience different rates of disease progression. Some may have a gradual decline and manage

Outcome if Left Treated and/or Untreated

- If treated
  - There is no cure for pulmonary fibrosis at present. The focus of current treatments is

the condition for many years, while others may experience a faster deterioration. At times, patients may undergo a sudden worsening of their symptoms, called an acute exacerbation, triggered by events that rapidly accelerate the scarring process. As scarring worsens, breathing becomes increasingly difficult, and the lung damage from an acute exacerbation is usually permanent (American Lung Association, n.d.).	to prevent further lung scarring, alleviate symptoms, and help maintain an active and healthy lifestyle. Your doctor might suggest medications, oxygen therapy, pulmonary rehabilitation, a lung transplant, and/or changes in lifestyle to manage the condition (American Lung Association, n.d.). • If left <u>untreated</u> ○ There is no cure for pulmonary fibrosis, and it ultimately leads to death. The duration and quality of life with the condition can vary significantly. The disease may progress rapidly within months or very slowly over several years. However, newer medications may help slow the progression of the disease (Cleveland Clinic, n.d.).

<u>Medical/Surgical Management</u>

- To diagnose pulmonary fibrosis, one or more of the following tests may be conducted:
  - Chest X-ray
  - Computerized tomography (CT) scan
  - Echocardiogram

- Pulmonary function tests must also be done to monitor how well the patient's lungs are working.
  - Spirometry
  - Lung volume test
  - Lung diffusion test
  - Pulse oximetry
  - Exercise test
  - Arterial blood gas test

- The lung scarring and thickening that occurs in pulmonary fibrosis cannot be repaired but treatment to stop the disease from worsening over time include:
  - Medicine (pirfenidone or nintedanib)
  - Oxygen therapy
  - Pulmonary rehabilitation
  - Lung transplant

SLP Therapy

Areas for Evaluation	Evaluation Materials	Treatment Strategies
Feeding and Swallowing	• **Swallowing Screening -** a procedure to identify individuals who require a comprehensive assessment of swallowing function or a referral for other	• **Prophylactic dysphagia treatment** include exercises that may reduce impairment, maintain

	professional and/or medical services (ASHA, 2004). • **Non-instrumental Swallowing Assessment -** to determine the presence (or absence) of signs and symptoms of dysphagia, with consideration for factors such as fatigue during a meal, posture, positioning, and environmental conditions. • **Instrumental Swallowing Assessment -** to evaluate oral, pharyngeal, laryngeal, upper esophageal, and respiratory function as they apply to normal and abnormal swallowing.	function, and assist in recovery. • **Compensatory Strategies and Postural Modifications** • **Swallow maneuvers** are specific strategies that clinicians use to change the timing or strength of swallowing. • **Diet modifications** include changes to the viscosity and texture of the food.
Voice and Resonance	• **Perceptual Voice Evaluation** • **Consensus Auditory-Perceptual Evaluation of Voice (CAPE-V) -** describe the severity of auditory-perceptual attributes of a voice problem	• **Physiologic voice therapy** programs strive to balance the three subsystems of voice production (respiration, phonation, and resonance) as opposed to working directly on isolated voice symptoms • The **accent method** is designed to increase pulmonary output, improve glottic efficiency, reduce excessive muscular tension, and normalize the vibratory pattern during phonation.
Cognition	• **Mini-Mental State Exam (MMSE) -** an 11-question measure that tests five areas of cognitive function: orientation, registration, attention and calculation, recall, and language. It is effective as a screening tool for cognitive impairment with older, community dwelling, hospitalized	• **Cognitive Exercises** - mnemonics, categorization tasks, and memory-focused speech therapy • **Compensatory Strategies -** Calendars, note-taking, and memory aids • **Environmental Modifications** • **Routine and Structure** • **Memory Games and**

	and institutionalized adults. • **Montreal Cognitive Assessment (MOCA) -** highly sensitive tool for early detection of mild cognitive impairment (MCI) • **Mini-CogTM -** serves as an effective triage tool to identify individuals in need of more thorough evaluation and differentiate patients with dementia from those without dementia. It takes up to only 3 minutes to administer.	**Activities** • **Mindfulness and Relaxation**

Educational

- Regular pulmonary function tests (PFTs)
- Oxygen therapy assessment and management
- Medication management (e.g., antifibrotic drugs)
- Pulmonary rehabilitation programs
- Breathing exercises and techniques training
- Nutritional counseling
- Vaccinations (e.g., flu, pneumonia)
- Monitoring for disease progression and complications
- Coordination with pulmonologists and other specialists
- Patient education on symptom management and lifestyle adaptations

Critical Members of the Management Team

PULMONOLOGIST	• specialist in lung diseases who diagnoses and manages pulmonary fibrosis
RESPIRATORY THERAPIST	• provides therapy to help manage breathing difficulties
PRIMARY CARE PHYSICIAN	• provides overall health care and coordinates with specialists
SPEECH LANGUAGE PATHOLOGIST	• Speech pathology can help people with pulmonary fibrosis who are having trouble with communication or swallowing. Speech pathologists can assess swallowing skills, provide advice to make eating and drinking safer and more enjoyable, teach safe swallowing strategies, and educate patients on the relationship between chronic pulmonary disease and oral health, reflux, voice, and swallowing.

Medical Precautions Regarding Speech-Language Therapy

Before	During	After
- Understand the patient's condition, including risk factors, medications taken, etc. - Note the patient's baseline vital signs to ensure optimal capacity for the therapy session.	- Avoid treatment of patients if you are sick. - Ensure proper hygiene and cleanliness when treating the patient. - Monitor the patient's vital signs, with **special attention to their O_2 levels**, as this may affect their ability to speak and participate in Speech Therapy.	- Wash hands and therapy materials after every use - Educate the family on the patient's condition and encourage them to support the patient. - Monitor vital signs to ensure optimal patient condition before leaving the clinic/therapy areas

ALZHEIMER'S DISEASE

Definition

- Alzheimer's disease is a progressive brain disorder marked by the accumulation of specific proteins that cause the brain to shrink and brain cells to die.
- It is the most prevalent cause of dementia, which involves a gradual deterioration in memory, thinking, behavior, and social abilities. These cognitive changes impact a person's capacity to perform daily functions (Mayo Clinic, n.d.).

Etiology

- The exact causes of Alzheimer's disease are not completely understood, but it involves the malfunction of brain proteins, which disrupts the normal functioning of brain cells, or neurons. This leads to a series of damaging events where neurons lose their connections and eventually die.
- Scientists believe that, for most individuals, Alzheimer's results from a mix of genetic, lifestyle, and environmental factors that gradually impact the brain. In fewer than 1% of cases, specific genetic mutations almost ensure the development of the disease, which typically begins in middle age (Mayo Clinic, n.d.).

Prevalence

Locally:

- There is a dearth of information on prevalence rates of Alzheimer's disease in the Philippines.
- In 2023, there were 906 deaths due to Alzheimer's Disease or 0.1% of deaths in the country, making it the 42nd cause of death in the Philippines.

Internationally:

- Alzheimer's disease is the most common type of dementia and may account for 60–70% of cases
- An estimated 6.9 million Americans age 65 and older are living with Alzheimer's in 2024.

Incidence

Locally:

- As of 2021, the estimated dementia incidence in the Philippines was at 16 per 1,000 with an estimated increase in dementia cases to 1,474,588 by 2030, 1,972,067 by 2040, and 2,529,436 by 2050.
- The most common subtype of dementia was Alzheimer's Disease, making up 85.5% of cases.

Internationally:

- Globally, the incidence of Alzheimer's disease and other dementias increased by 147.95% from 1990 to 2019, with 2.92 million cases (95% UI: 2.49 to 3.37) in

Seventy-three percent are age 75 or older. ● About 1 in 9 people (10.8%) age 65 and older have Alzheimer's disease.	1990 and 7.24 million cases (95% UI, 6.22 to 8.23) in 2019

Signs, Symptoms and Pathophysiology

- According to Mayo Clinic (2024), the following are symptoms of a patient with Alzheimer's Disease:
  - Memory loss that affects one's ability to function at work or home (e.g., repeating statements over and over, forgetting items, places, and appointments, word-finding difficulties, forgetting once-familiar names)
  - Difficulty concentrating and thinking, especially with abstract concepts (i.e., multitasking, managing finances, etc.)
  - Difficulty making sensible decisions and judgments for everyday life
  - Difficulty planning and maintaining once-familiar routines and life tasks
  - Changes in personality and behavior (e.g., mood swings, depression, social withdrawal, anger or aggression, loss of inhibitions)

Structural and Anatomical Changes Related to the Condition

- Baddeley et al. (2015) state that post-mortem brain tissue examinations of individuals diagnosed with Alzheimer's Disease note abnormally high instances of amyloid plaques and neurofibrillary tangles, resulting from defective protein production. The production of beta-amyloid in the brain (which is toxic to neurons) builds up in the brain tissue, leading to clumps of plaque, while abnormal protein formation within the neuron itself results in the twisting and collapse of microtubules that ultimately lead to cell death.

Possible SLP Areas Affected and Their Characteristics

Cognition	Cleveland Clinic (2022) states that Alzheimer's Disease affects cognition greatly depending on the severity of one's condition. They may exhibit: ● Memory Impairment ○ Increasing or Total Memory Loss and Growing Confusion (i.e., difficulties remembering events or details about one's life) ○ Misplacing objects, difficulty recognizing familiar persons, places, and objects ○ Poor Short-Term Memory ● Deficits in Learning ○ The Alzheimer's Association (2024) states that "the most common early symptom of Alzheimer's is difficulty remembering newly learned information" ○ Cleveland Clinic (2022) also states that "the most common early symptom is **forgetting newly learned information**, especially recent events, places and names." ● Visuospatial Skill Impairments ○ Disorientation and Difficulty Following Directions ○ Unawareness of Surroundings (Disorientation) ○ Monacelli et al. (2003) state that "Patients with Alzheimer's disease (AD) and many older adults become lost even in familiar surroundings", reflected in impaired spatial cognition.

	• Executive Dysfunction
	  ○ Difficulties with Problem Solving and Decision Making
	  ○ Difficulties with Planning and Organizing
	  ○ Loss of Ability to do Activities of Daily Living (ADL)
	• Behavior
	  ○ Changes in personality
	  ○ Irritability
	  ○ Depressive Symptoms
	  ○ Symptoms of Anxiety
	  ○ Apathy

Fluency	• Vigo et al. (2022) state that even in the early stages of Alzheimer's Disease, a **loss of verbal fluency** is a common symptom, with this loss progressing rapidly in more severe stages. • Ben-Aharon (2021) states that patients may commonly **stutter**, **repeat** words/sentences, suddenly **halt** speech, and **use verbal fillers** (i.e., "um") even in the early stages of Alzheimer's disease, with this progressively worsening at more severe stages.

Language	• Klimova et al. (2015) state that language may be significantly affected in a patient with Alzheimer's Disease depending on the severity of their condition.
	  ○ Difficulties comprehending and producing written and spoken language
	  ○ Difficulties with object naming and word-finding
	  ○ Difficulty with pragmatics and social aspects of communication (i.e., talking too much at inappropriate times, speaking too loudly, difficulty with topic maintenance)
	  ○ Circumlocutions, filler speech, and talking around a target word/concept
	• Ben-Aharon (2021) states that in the most severe stages of the condition, the patient may be restricted to **repeating phrases** they hear from others or have speech that is "oftentimes incoherent or illogical."
	• Weekes (2020) also states that Alzheimer's Disease and Other Dementias (ADOD) often lead to some form of aphasia, one of which may be **Primary Progressive Aphasia**

Articulation	• Larrazabal (2023) states that damage to the cerebellum associated with Alzheimer's disease may result in **ataxic dysarthria**, which presents as uncoordinated, shaky, and slow speech.

Types

ATYPICAL ALZHEIMER'S	• A type of Alzheimer's disease that does not cause memory problems at first.
LOGOPENIC APHASIA	• Mostly affecting language

POSTERIOR CORTICAL ATROPHY	• Causing problems with vision and working out where things are in relation to each other • Affects vision and spatial awareness
FRONTAL VARIANT ALZHEIMER'S DISEASE	• Affects behavior and thinking
CORTICOBASAL SYNDROME	• Causes problems with movement and sensation as well as thinking, perception, and language
ALZHEIMER'S STAGES	
PRECLINICAL ALZHEIMER'S DISEASE	• Alzheimer's disease begins long before any symptoms become apparent. • This stage of Alzheimer's can last for years, possibly even decades. • Although you won't notice any changes, new imaging technologies of the brain can identify amyloid plaques and neurofibrillary tangles. • The tangles develop when tau proteins change shape and organize into structures. • These are hallmarks of Alzheimer's disease.
MILD COGNITIVE IMPAIRMENT D/T ALZHEIMER'S DISEASE *Early-Stage Alzheimer's*	• People with mild cognitive impairment have mild changes in their memory and thinking ability. • People with MCI may have memory lapses when it comes to information that is usually easily remembered. This may include conversations, recent events or appointments. • People with MCI also may have trouble judging the amount of time needed for a task. • They may have trouble judging the number or order of steps needed to complete a task. • The ability to make sound decisions can become harder.
MILD DEMENTIA D/T ALZHEIMER'S DISEASE *Early-Stage Alzheimer's*	• Alzheimer's disease is often diagnosed in the mild dementia stage. • This is when it becomes clear to family and doctors that a person is having significant trouble with memory and thinking. The symptoms impact daily functioning.
MODERATE DEMENTIA D/T ALZHEIMER'S DISEASE *Middle-Stage Alzheimer's*	• During the moderate dementia stage of Alzheimer's disease, people grow more confused and forgetful. They begin to need more help with daily activities and self-care. • They may confuse family members or close friends with one another or mistake strangers for family. • They may wander, possibly in search of surroundings that feel more familiar. These behaviors make it unsafe to leave them on their own.
SEVERE DEMENTIA D/T ALZHEIMER'S DISEASE *Late-Stage Alzheimer's*	• In the late stage of the disease, called severe dementia due to Alzheimer's disease, mental function continues to decline. • The disease also has a growing impact on movement and physical capabilities.

	• Individuals can no longer converse or speak in ways that make sense. They may only occasionally say words or phrases. • Total assistance with eating, dressing, using the bathroom and all other daily self-care tasks.

Progression of the Condition

- Alzheimer's disease typically progresses slowly and deteriorates over a span of several years. As the disease advances, it impacts nearly all areas of the brain, affecting memory, cognition, judgment, language, problem-solving abilities, personality, and motor functions (Mayo Clinic, n.d.).

Outcome if Left Treated and/or Untreated

- If treated
  - Alzheimer's has no cure, but certain medicines can help manage symptoms of the disease and some can slow down disease progression. Medicines for Alzheimer's disease may slow or help manage changes in memory, reasoning and other thinking skills (Mayo Clinic, n.d.).
- If left untreated
  - There is no cure for Alzheimer's disease. In its advanced stages, significant loss of brain function can lead to complications such as dehydration, malnutrition, or infections, which can ultimately result in death (Mayo Clinic, n.d.).

Medical/Surgical Management

- There is no cure for dementia but some medications can help manage dementia symptoms:
  - Cholinesterase inhibitors
  - NMDA receptor antagonists like memantine for severe Alzheimer's disease and vascular dementia
  - Medicine to control blood pressure
  - Selective serotonin reuptake inhibitors (SSRIs) can help symptoms of depression

SLP Therapy

Areas for Evaluation	Evaluation Materials	Treatment Strategies
Cognition	• **Mini-Mental State Exam (MMSE) -** an 11-question measure that tests five areas of cognitive function: orientation, registration, attention and calculation, recall, and language. It is effective as a screening tool for cognitive impairment with older, community dwelling, hospitalized and institutionalized adults. • **Montreal Cognitive**	• **Cognitive Exercises** - mnemonics, categorization tasks, and memory-focused speech therapy • **Compensatory Strategies -** Calendars, note-taking, and memory aids • **Environmental Modifications** • **Routine and Structure** • **Spaced Retrieval** • **Chaining (Task Analysis)**

	Assessment (MOCA) - highly sensitive tool for early detection of mild cognitive impairment (MCI) • **Mini-CogTM -** serves as an effective triage tool to identify individuals in need of more thorough evaluation and differentiate patients with dementia from those without dementia. It takes up to only 3 minutes to administer. • **Cognitive Linguistic Quick Test** Plus or CLQT+ - quickly identifies strength/weaknesses of adults with neurological impairment due to head injury or dementia. It assesses attention, memory, executive functions, language, and visuospatial skills.	
Fluency	• **Stuttering Severity Instrument–Fourth Edition (SSI-4)** - a reliable and valid norm-referenced stuttering assessment that can be used for both clinical and search purposes.	• **Word Retrieval Intervention** • **Script Training** • **Compensatory-based Approaches**
Receptive and Expressive Language	• **Arizona Battery for Communication Disorders of Dementia** - A tool that can be used to assess language and communication in dementia • The **Sydney Language Battery (SYDBAT)** - a short but comprehensive measure of expressive and receptive language abilities.	• Optimize retained abilities to teach the use of memory aids and compensatory memory strategies that will improve the patient's cognitive/communicative function as well as establish patterns that will be helpful in the future

Articulation	• **The Oral Speech Mechanism Screening Examination Revised** - provides a standardized template for review of oral structure and function. • **The Assessment of Intelligibility of Dysarthric Speech** - quantifies singleword and sentence intelligibility	• **Exercise-based (resistance) training** is targeted at improving strength and range of motion of oral structures to improve articulatory precision, combat the effect of trismus (muscle spasms in the TMJ), and improve quality of life.

Educational

- Regular cognitive assessments and monitoring
- Medication management for Alzheimer's and related symptoms
- Coordination with neurologists and geriatric specialists
- Safety assessments for home and living environment
- Caregiver support and education programs
- Memory care and cognitive stimulation activities
- Assistance with activities of daily living (ADLs)
- Nutritional guidance and meal planning support
- Fall prevention strategies and mobility assistance
- Management of co-existing medical conditions
- Behavioral and psychological symptom management
- End-of-life care planning and advance directives assistance

Critical Members of the Management Team

GERIATRICIAN	• physicians skilled in assessing and managing the medical problems that affect older adults
NEUROLOGIST	• specialists in the diseases of the nervous system
PSYCHIATRIST/ GERIATRIC PSYCHIATRIST	• specialize in the assessment and treatment of mental disorders
NEUROPSYCHOLOGIST	• psychologists who are specially trained to evaluate cognitive disorders
SPEECH LANGUAGE PATHOLOGIST	• play an important role in helping cognitively impaired individuals affected by communication and/or swallowing difficulties
OCCUPATIONAL THERAPIST	• helpful in assessing home safety, suggesting environmental modifications to increase safety, and planning activities to facilitate the care of cognitively impaired people

PHYSICAL THERAPIST	• gait difficulties, balance problems, recovery from injury or surgery, and planning of a physical activity program are all special skills that Physical Therapists can contribute to a treatment program

Medical Precautions Regarding Speech-Language Therapy

Before	During	After
- Be aware of any medications the patient may be taking - Take note of the patient's potential triggers - Note the patient's baseline vital signs to ensure optimal capacity for the therapy session.	- Start and maintain a routine with the patient for therapy sessions, which include regular breaks and feeding schedules - Ensure hazardous materials and electrical wires are out of reach - Keep the therapy area clean and clear of potential distractions - Monitor vital signs throughout the session to ensure patient's optimal condition during therapy - Continually **monitor and assess the patient's orientation** throughout the therapy session to ensure they are aware of the current situation. - Use simple, concise language when interacting during therapy in order to prevent cognitive overload and confusion.	- Communicate with the family members on ways to facilitate effective interaction with the patient, particularly when the patient may exhibit confusion and disorientation. - Monitor vital signs to ensure optimal patient condition before leaving the clinic/therapy areas

MULTIPLE SCLEROSIS

Definition

- Multiple sclerosis is a potentially disabling condition affecting the brain and spinal cord.
- In MS, the immune system mistakenly attacks the protective myelin sheath surrounding nerve fibers, leading to communication issues between the brain and the rest of the body. Over time, this can result in permanent damage or deterioration of the nerve fibers (Mayo Clinic, n.d.).

Etiology

- The exact cause of multiple sclerosis is not known.
- It is regarded as an immune-mediated disorder where the body's immune system mistakenly targets its own tissues.
- In multiple sclerosis, this immune response damages the protective fatty substance surrounding nerve fibers in the brain and spinal cord (Mayo Clinic, n.d.).

Prevalence

Locally:

- In 2016, the Philippines was reported to have 2,989 prevalent cases of MS (GBD 2016 Multiple Sclerosis Collaborators, 2016)
- According to WHO in 2020, Multiple Sclerosis Deaths in the Philippines reached 31 or 0.00% of total deaths.

Incidence

Locally:

- Data on incidence rates, mortality and disability timelines of MS in the Philippines is severely lacking (Cheong et al., 2018).

Internationally:

- The global incidence of multiple sclerosis

Internationally: ● In the United States, almost 1 million people have received a diagnosis of Multiple Sclerosis, according to a 2019 prevalence study.	(MS) is 2.1 cases per 100,000 people per year, which means that someone is diagnosed with MS every five minutes.

Signs, Symptoms, and Pathophysiology

- According to Love and Webb (2017), the symptoms of MS vary depending on where one is in the timeline of the disease.
    - Early Signs
        - Transient paresthesias of the extremities
        - Transient Diplopia (blurring of vision)
        - Mild Weakness or Clumsiness
        - Mild vertigo
    - Severe Signs
        - Marked difficulty with gait
        - Dysarthria
        - Significant weakness
        - Visual disturbances
        - Nystagmus
        - Bladder disturbance
        - Personality changes (d/t frontal lobe involvement)
        - Impairments in perceptual-motor functioning
        - Mild intellectual deficiencies (i.e., memory)

Structural and Anatomical Changes Related to the Condition

- The National Health Service (2022) states that MS, being an autoimmune condition, "attacks the myelin sheath in the brain and spinal cord", leading to the inflammation of the myelin sheath resulting in the disruption of neural impulses going through the brain and spinal cord. This leads to the common symptoms associated with MS, like muscle spasms and mobility problems.

Possible SLP Areas Affected and Their Characteristics

Articulation	● The National Multiple Sclerosis Society (n.d.) states that dysarthria is commonly associated speech problem for patients with MS, manifesting in slurred speech resulting from weakness and/or poor coordination of muscles for speech (typically spastic-ataxic dysarthria)
Voice and Resonance	● The National Multiple Sclerosis Society (n.d.) states that dysphonia is a common speech problem in patients with MS. manifesting as: ○ Harsh, hoarse, strangled-sounding, or breathy voice quality ○ Poor respiration for speech and voicing ○ Poor volume control ○ Hypernasality ○ Halting, monotone, and uncontrolled use of voice (Ataxic speech)
Feeding and Swallowing	● Melinosky (2024) states that "People with multiple sclerosis, or MS, often have trouble swallowing, a problem called **dysphagia**", resulting from damage to the nerves in the brain and spinal cord

	responsible for swallowing.
Cognition	• Staff et al. (2009) state that "cognitive dysfunction is a common feature of multiple sclerosis (MS)", with symptoms including deficits in memory, attention, information-processing speech, executive function, and visuospatial perception. • The National Multiple Sclerosis Society (n.d.) further states that MS can affect cognition, manifesting in: ○ Difficulties with Learning ○ Information Processing Deficits ○ Executive dysfunction (i.e., planning, organizing, problem solving and decision-making) ○ Attention deficits ○ Word-finding difficulties ○ Difficulties with visuospatial perception ○ Difficulties with Numbers and Mathematics

Types

RELAPSING REMITTING MS	• defined by temporary periods called relapses, flare-ups, or exacerbations when symptoms appear • The most common type of MS, accounting for about 85% of diagnoses. • Symptoms appear in temporary periods called relapses, and then go away or get better (remission). Remissions can last from weeks to months or years. Over time, this type often develops into secondary progressive MS.
SECONDARY PROGRESSIVE MS	• RRMS may advance to the secondary progressive phase: secondary progressive MS (SPMS) • Symptoms slowly worsen over time, without the distinctive remissions, flare-ups, or plateaus of RRMS. SPMS can develop years to decades after the initial onset of symptoms.
PRIMARY PROGRESSIVE MS	• steadily worsen with no periods of remission and flare-ups • Symptoms steadily worsen with no periods of remission and flare-ups. This is less common than the other types of MS.
MARBURG'S VARIANT	• An aggressive form of MS that advances very quickly and relentlessly. It is also referred to as acute or fulminant MS.
BALO'S CONCENTRIC SCLEROSIS	• A rare subtype of demyelinating disease that is usually grouped as one of the atypical forms of MS.
CLINICALLY ISOLATED SYNDROME (CIS)	• The earliest form of MS, which refers to a single episode of neurological symptoms suggestive of multiple sclerosis.

Progression of the Condition	**Outcome if Left Treated and/or Untreated**
• Most individuals with multiple sclerosis experience the condition with a gradual deterioration of symptoms from the onset.	• If treated ○ Multiple sclerosis is a chronic condition with no cure. Despite this, current treatments

In primary progressive MS, symptoms steadily worsen and accumulate over several years without distinct periods of remission. However, individuals often experience intervals where their condition seems to stabilize (NHS, n.d.).	are highly effective in managing symptoms and reducing the frequency of flare-ups. Nonetheless, MS can result in disability over time, potentially making it challenging to perform everyday tasks without help (Mayo Clinic, n.d.). ● If left <u>untreated</u> ○ If untreated, multiple sclerosis generally becomes progressive, leading to a gradual decline in health over many years (Yale Medicine, n.d.).

<u>Medical/Surgical Management</u>

- There is no cure for multiple sclerosis. Treatment often focuses on speeding recovery from attacks, reducing new radiographic and clinical relapses, slowing the progression of the disease, and managing the symptoms.
- Treatment to modify progression include:
  - Injectable, oral and infusions medications (i.e., interferon beta medications, glatiramer acetate, and monoclonal antibodies)
  - Injectable Medications:
    - **Interferon beta medicines-** interferes with diseases that attack the body. They may decrease inflammation and increase nerve growth. Interferon beta medicines are injected under the skin or into muscle. They can reduce the number of relapses and make them less severe.
      - Side Effects: Flu-like symptoms, injection-site reactions, liver damage, development of antibodies that reduce how well the emdicine works
    - **Glatiramer acetate (Copaxone, Glatopa)** - may help block your immune system's attack on myelin.
      - Side Effects: skin irritation at the injection site and swelling.
    - **Ofatumumab (Kesimpta, Arzerra)** - targets cells that damage the nervous system. These cells are called B cells.
      - Possible side effects are infections, local reactions to the injection site and headaches.
  - Oral Medications:
    - **Teriflunomide (Aubagio).** This once-daily oral medicine can reduce relapses.
      - Teriflunomide can cause liver damage, hair loss and other side effects. This medicine is linked to birth defects when taken by both men and women.
    - **Diroximel fumarate (Vumerity).** This twice-daily capsule is similar to dimethyl fumarate but typically causes fewer side effects. It's approved for the treatment of relapsing forms of MS.
    - **Siponimod (Mayzent).** This once-daily oral medicine can reduce relapse rates and help slow progression of MS. It's also approved for secondary-progressive MS. Possible side effects include viral infections, liver damage and low white blood cell count.
  - Infusion Treatments:

- **Natalizumab (Tysabri).** This is a monoclonal antibody that has been shown to decrease relapse rates and slow down the risk of disability.
    - Natalizumab is designed to block the movement of potentially damaging immune cells from your bloodstream to your brain and spinal cord. It may be considered a first-line treatment for some people with relapsing-remitting MS or as a second-line treatment in others.
- **Ocrelizumab (Ocrevus).** This medicine is approved by the FDA to treat both the relapsing-remitting and primary-progressive forms of MS.

- Bruton's tyrosin kinase (BTK) inhibitor, an emergent therapy being studies in relapsing-remitting MS
    - Treatment with CNS-penetrant BTK inhibitors might curtail disease progression by targeting immune cells on both sides of the blood–brain barrier.
- Physical and/or occupational therapy
- Muscle relaxants

SLP Therapy

Areas for Evaluation	Evaluation Materials	Treatment Strategies
Articulation	• **The Oral Speech Mechanism Screening Examination Revised** - provides a standardized template for review of oral structure and function. • **The Assessment of Intelligibility of Dysarthric Speech** - quantifies singleword and sentence intelligibility	• **Exercise-based (resistance) training** is targeted at improving strength and range of motion of oral structures to improve articulatory precision, combat the effect of trismus (muscle spasms in the TMJ), and improve quality of life.
Voice and Resonance	• **Perceptual Voice Evaluation** • **Consensus Auditory-Perceptual Evaluation of Voice (CAPE-V) -** describe the severity of auditory-perceptual attributes of a voice problem	• **Physiologic voice therapy** programs strive to balance the three subsystems of voice production (respiration, phonation, and resonance) as opposed to working directly on isolated voice symptoms • The **accent method** is designed to increase pulmonary output, improve glottic efficiency, reduce excessive muscular tension, and normalize the vibratory pattern

		during phonation.
Feeding and Swallowing	• **Swallowing Screening -** a procedure to identify individuals who require a comprehensive assessment of swallowing function or a referral for other professional and/or medical services (ASHA, 2004). • **Non-instrumental Swallowing Assessment -** to determine the presence (or absence) of signs and symptoms of dysphagia, with consideration for factors such as fatigue during a meal, posture, positioning, and environmental conditions. • **Instrumental Swallowing Assessment -** to evaluate oral, pharyngeal, laryngeal, upper esophageal, and respiratory function as they apply to normal and abnormal swallowing.	• **Prophylactic dysphagia treatment** include exercises that may reduce impairment, maintain function, and assist in recovery. • **Compensatory Strategies and Postural Modifications** • **Swallow maneuvers** are specific strategies that clinicians use to change the timing or strength of swallowing. • **Diet modifications** include changes to the viscosity and texture of the food.
Cognition	• **Mini-Mental State Exam (MMSE) -** an 11-question measure that tests five areas of cognitive function: orientation, registration, attention and calculation, recall, and language. It is effective as a screening tool for cognitive impairment with older, community dwelling, hospitalized and institutionalized adults. • **Montreal Cognitive Assessment (MOCA) -** highly sensitive tool for early detection of mild cognitive impairment (MCI) • **Mini-CogTM -** serves as an effective triage tool to identify individuals in need of more thorough evaluation and differentiate patients with dementia from those without dementia. It	• **Cognitive Exercises** - mnemonics, categorization tasks, and memory-focused speech therapy • **Compensatory Strategies -** Calendars, note-taking, and memory aids • **Environmental Modifications** • **Routine and Structure** • **Spaced Retrieval** • **Chaining (Task Analysis)**

	takes up to only 3 minutes to administer. • **Cognitive Linguistic Quick Test** Plus or CLQT+ - quickly identifies strength/weaknesses of adults with neurological impairment due to head injury or dementia. It assesses attention, memory, executive functions, language, and visuospatial skills.	

Educational

- Regular neurological assessments and MRI scans
- Disease-modifying therapy management
- Symptom management (e.g., for fatigue, pain, cognitive issues)
- Physical therapy and rehabilitation services
- Occupational therapy for daily living adaptations
- Speech and swallowing therapy when needed
- Mental health support and counseling
- Nutritional guidance specific to MS
- Coordination with multiple specialists (neurologists, urologists, ophthalmologists)
- MS medication assistance programs
- Adaptive equipment assessments and provision
- Patient education on MS management and lifestyle modifications
- Fatigue management programs
- Cognitive rehabilitation services
- Support group facilitation or referrals

Critical Members of the Management Team

NEUROLOGIST	• monitor disease progression, discuss treatment options, make recommendations, and generally help you understand the disorder
PRIMARY CARE PHYSICIAN	• maintain general health and manage any coexisting diseases or conditions
UROLOGIST	• people with MS frequently experience bladder and urinary issues, including difficulty urinating or urgent or frequent urination, which the urologist can potentially address with medications, surgery, or other techniques
OCCUPATIONAL THERAPIST	• help with activities related to daily living including bathing, dressing, and eating
PHYSICAL THERAPIST	• help with mobility and moving around, and with improving strength and range of motion

SPEECH LANGUAGE PATHOLOGIST	• assess, diagnose, and treat problems that MS patients may experience with speech and swallowing (dysphagia) due to muscle weakness and neurological problems in the face and jaw
NEURO-OPHTHALMOLOGIST	• MS can damage the optic nerves, which connect the eyes to the brain, which the neuro-ophthalmologist can help with

Medical Precautions Regarding Speech-Language Therapy

Before	During	After
- Prepare appropriate therapy materials based on the patient's current skills and abilities - Note the patient's baseline vital signs to ensure optimal capacity for the therapy session.	- Keep the therapy area clear and remove potential tripping hazards and things that may pose potential distractions - Monitor vital signs throughout the session to ensure patient's optimal condition during therapy	- Coordinate with the family members to allow for carry-over and educate on the patient's current condition and progress. - Monitor vital signs to ensure optimal patient condition before leaving the clinic/therapy areas.

General Guidelines for Caring for Terminally Ill Patients

- Educate and counsel the patient and the family regarding the patient's condition and prognosis
- Advocate for the patient in planning for their future
- Communicate with the rest of the management team regarding the patient's Plan of Care

SUPPORT SYSTEMS

ALZHEIMER'S DISEASE

Philippines

- **Alzheimer's Disease Association of the Philippines (ADAP)** is an association based in Quezon City which has been a member of Alzheimer's Disease International since 2002.

International

- The **Alzheimer's Association** leads the way to end Alzheimer's and all other dementia — by accelerating global research, driving risk reduction and early detection, and maximizing quality care and support

PULMONARY FIBROSIS

Philippines

- The **Lung Center of the Philippines** provides high quality health services and state of the art facilities for the diagnosis and management of respiratory and chest diseases, and promotion of lung health for the Filipino people with excellence and compassion, regardless of creed, color, sex, socio-economic status, and political affiliation.

International

- **Pulmonary Fibrosis Foundation** is the largest nonprofit organization dedicated to funding research and advocating for important issues for the PF community.

HIV

Philippines

- **AIDS Healthcare Foundation** works with the Department of Health (DOH) at the central level, coordinates with the the DOH regional offices and local health offices to ensure that its programs, projects and activities are aligned with that of the national response.

International

- **The Rocket Fund** is the Elton John AIDS Foundation's transformative $125 million campaign to redouble the fight against AIDS everywhere.

MULTIPLE SCLEROSIS

Philippines

- **National Multiple Sclerosis Society of the Philippines** is a nonprofit organization that serves as a support group for MS patients in the Philippines.

International

- **MS Australia** is Australia's national multiple sclerosis (MS) not-for-profit organisation that empowers researchers to identify ways to treat, prevent and cure MS, seeks sustained and systemic policy change via advocacy, and acts as the champion for Australia's community of people affected by MS.

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