STUDENT WORKBOOK ON

GERIATRIC MEDICINE

Department of Medicine
Faculty of Medicine
Sabaragamuwa University of Sri Lanka

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CLINICAL APPOINTMENT IN GERIATRIC MEDICINE

1. Name of the student

……

2. Year passed GCE Advanced level Examination

……..

3. Duration of the appointment

From: ……/……/…… To: ……../……/…….

4. Name of the consultant

……

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PREFACE

Students of the Faculty of Medicine, Sabaragamuwa University of Sri Lanka, study Geriatric Medicine as a separate appointment of one week at Teaching Hospital, Rathnapura. During this period, they will be attached to a general medical ward under the Consultant Physician appointed by the Ministry of Health.

This workbook in Geriatric Medicine is compiled to help students achieve essential knowledge and skills in the subject, expected from an undergraduate when they qualify to work in medical wards as intern house officers. Thus, the workbook will guide the student during their Geriatric Medicine short appointment.

This Workbook is a joint effort between academic staff of the Department of Medicine, SUSL and Consultant Physicians in Teaching Hospital Ratnapura. Students are expected to organize their classes and do self-studies in order to complete the tasks set out.

We value your feedback to improve the Workbook.

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CHAPTER 1

INTRODUCTION

Dear Students,

We have prepared a series of workbooks to guide you during your medical appointments. These include 3rd year workbook, 4th year workbook and workbook for each short appointment and a workbook for the professorial appointment.

The appointments in finer specialties are organized based on the University Grants Commission guidelines and according to the needs of the Ministry of Health.

The short appointment in Geriatric medicine will give you the opportunity to study Geriatric medicine with exposure to specific case scenarios in more detail. This workbook is prepared to provide guidance to the students during the Geriatric medicine appointment to cover the essential areas expected from an undergraduate. You are expected to learn the management plans in further detail. This includes the investigation, treatment of common medical conditions, management of common emergencies, which are essential clinical topics for an intern medical officer. This knowledge, skills and experience you gather during the short appointments will help you to understand patient problems in greater depth.

Your continuous assessments will be based on these workbooks.

Learning Outcomes in Geriatric Medicine

At the end of the appointment students will be able to,

1. Describe the anatomical and physiological basis and pathogenesis of disorders affecting the elderly and the scientific basis of management.

2. Obtain a history from an older person including
    a. Information on age-related health problems
    b. Physical and mental functions
    c. Living arrangements
    d. Access to health and social services and family support
    e. Functional capacity, physical activities of daily living (Barthel index validated Sinhala version), MMS (Minicog)
    f. Undisclosed medical problems ("system review"),
    g. Inquire about features more relevant to older patients: Polypharmacy, vision and hearing, falls, incontinence of bowel/bladder, and memory failure

3. Perform clinical examination in an older person taking the age-related health problems, limitations of physical and mental functions, gait balance, vision and hearing into consideration

4. Perform comprehensive geriatric assessment and request relevant investigations to make accurate diagnosis and plan management.

5. Formulate a list of problems, differential diagnoses and a plan of management taking the above factors into consideration.

6. Obtain histories, elicit physical signs and interpret physical signs, describe pathophysiology, principles of management and prognosis of patients having the following conditions.
    a. Syncope and dizziness
    b. Gait disturbances, falls and injuries
    c. Frailty
    d. Urinary and bowel incontinence
    e. Visual impairment
    f. Sleep problems in the elderly
    g. Hearing impairment
    h. Pressure ulcers,
    i. Malnutrition and oral disease
    j. Multi-drug therapy and poly-pharmacy
    k. Higher co-morbidity

7. Describe the emergency management of acute states of confusion, stroke and falls.

8. Identify specific health related problems and needs in the elderly in view of planning and implementing interventions at home, primary healthcare level and institutions providing care for the elderly.

9. Learn appropriate dosages, appreciate that there is a narrow margin between therapeutic and toxic doses. review prescriptions for poly-pharmacy and improve compliance.

10. Communicate under supervision, prognosis and options for care to patients having serious neurocognitive disabilities and other illnesses.

11. Demonstrate skills of documentation in case notes, daily status, referrals, discharge summaries, clinic notes and prescriptions.

12. Demonstrate empathy.

13. Resolve ethical dilemmas related to care of the elderly and maintain high ethical standards.

14. Be an effective member of the healthcare team and know the health facilities and social support available to care for elderly.

15. Know the support provided by the health system, the social service sector and informal carers towards provision of care for patients in hospital, and in the community in Sri Lanka.

CHAPTER 2

CORE CLINICAL KNOWLEDGE AND SKILLS

At the end of the appointment, you should be competent in the technique of history taking, physical examination, comprehensive geriatric assessment and clinical reasoning at a level of a student about to enter the Final Year.

In addition to the cases, you are allocated during the appointment, you are advised to see the following presentations given in the next section on "Topics to cover during Geriatrics Appointment"

2.1 Clinical Presentations: Geriatric medicine appointment

These are some of the key presentations that ought to be 'covered' during the Geriatrics appointment.

- Falls in elderly
- Frailty
- Acute confusion in elderly
- Incontinence

2.2 Emergencies

Following is a list of common Geriatric emergencies.

- Falls
- Delirium
- Sepsis (Aspiration pneumonia, Urinary sepsis)
- Bone fractures

2.3 Topics in Geriatric Medicine

These topics are often termed as the theoretical aspects of geriatrics and require didactic teaching (e.g., lectures) or self-studies using standard textbooks.

1. Geriatric assessment
2. Cognitive decline
3. Falls
4. Infections in the elderly
5. Frailty
6. Ethical issues (e.g., limits of care, a 'good death')

CHAPTER 3

HISTORY TAKING

History taking in elderly follows the conventional history taking concepts highlighting areas more relevant for elderly. Elderly patients usually have multiple medical problems and may require multiple drug therapies. Clinical presentation can be different from a young adult with the same condition and therefore diagnosis could be difficult.

Patients might have memory impairments making it difficult in recalling past illnesses, hospitalizations, medication usage. You may need to get collateral history from a family member, friend or the carers. When you interview with them you may get a better understanding of the patient's activities of daily living, psychological state, habits of alcohol consumption, recreational activities, and participation in social and family events.

Patients may hide information as they fear hospitalization, interventions and sometimes may fear death itself.

You have to actively look for common conditions like depression and you might need to do a Mini Mental State Examination (MMSE). They might have impaired cognition and when making informed decisions you will have to assess their decision-making capacity.

During your interview with the patient, find out their mental state. See whether the patient is sad, in tears, having a low voice, anxious, in fear, hopeless and felling lonely.

PRESENTING COMPLAINT

Some of the unique and common presentations in elderly are alteration of consciousness, dizziness, syncope, falls, gait disturbances, mobility problems, weight loss, loss of appetite, fatigue, urinary or fecal incontinence, constipation, shortness of breath, chest pain, fever, problems of poor memory, hearing, visual or functional decline.

HISTORY OF PRESENTING COMPLAINT

The concept of this section is similar to any other discipline, but should include special sections like, activities of daily living, functional status, psychological status and patient concerns.

Activities of daily living are the basic activities necessary for independent living at home and categorized using standard questionnaires: Activities of Daily Living (ADLs) and Instrumental Activities of Daily Living (IADLs)

Activities of Daily Living (ADLs)

- **Personal hygiene**
  Bathing, grooming, oral, nail and hair care
- **Continence management**
  A person's mental and physical ability to properly use the bathroom
- **Dressing**
  A person's ability to select and wear proper clothes for different occasions, physically dress and undress oneself, ability to get on and off the toilet and clean oneself
- **Feeding**
  Whether a person can feed themselves or needs assistance (though not necessarily the capability to prepare food)
- **Ambulating/ transfer/mobility**
  The extent of a person's ability to change from one position to another and to walk independently. Ability to stand from sitting position, get out of bed, walk independently

Instrumental Activities of Daily Living (IADLs)

Person's ability to live independently and thrive. However, in Sri Lanka a large proportion of elderly live with their children.

- **Companionship and mental support**
  This is a fundamental and a much-needed IADL. It reflects on the help that may be needed to keep a person in a positive frame of mind.
- **Transportation and shopping**
  How much a person can go around or obtain their grocery and pharmacy needs without help, ability to use public transport, drive or cycle, ability to make appropriate food and clothing purchasing decisions.
- **Preparing meals**
  Planning and preparing various aspects of meals, including cooking, cleaning up, ability to use kitchen equipment and utensils safely, shopping and storing groceries
- **Managing a person's household/ house work**
  Cleaning, tidying up, removing trash and clutter, and doing laundry and folding clothes, washing dishes, dusting

- **Managing medications**
  How much help may be needed to keep medications up to date and taking medicine on time and in the right dosages. Is the person able to read the names of the medicines in the prescriptions and can the individual medicine be recognized?
- **Communicating with others**
  Managing the household's phones (Mobile and regular phone). In affluent homes there may be access to email, internet, and generally making the home hospitable and welcoming for visitors.
- **Managing finances**
  How much assistance a person may need in managing bank balances and cheque books and paying bills on time

SYSTEMIC REVIEW

- **General**- Weight changes, appetite, fatigue, pain, or disability.
- **Cardiovascular system**- Palpitation, shortness of breath on excretion, chest pain, chest pain on excretion, dizziness,
- **Respiratory system**, Shortness of breath, cough, wheezing
- **Gastro intestinal system**- Abdominal pain, constipation, loose stools, pain full defecation, bleeding per rectum, melena
- **Genito urinary system**- Dysuria, frequency, smell of urine, painful or difficult micturition.
- **Neurological**- Gait, numbness of peripheries, weakness of limbs, conscious level, sleep pattern, memory status, tinnitus, cognitive impairment, visual or hearing impairment.
- **Musculoskeletal system**- Joint pain and swelling, myalgia, back pain or deformities, risk of falls.

Ask specific questions to review malignancies- Post menopausal bleeding, prostatic symptoms, back pain, alterations of bowel habits, pre rectal bleeding, melena, difficulty in swallowing, haemoptysis

PAST MEDICAL HISTORY

Ask about past medical illnesses, the control and the duration of these illnesses, complications and frequency of hospital admissions, and previous admissions to the emergency department or ICUs. Any surgical procedures undergone or any diagnosis of malignancies and recurrent infections.

History of immunization specially to influenzas, hepatitis B, COVID-19.

DRUG HISTORY

Find out the drugs used and current doses, frequency and the prescriber, and when was the last visit to the doctor, and the compliance.
Explore for polypharmacy, any adverse effects or allergies for drugs. Find out any dietary supplements' patient use and herbal remedies, over the counter medications and local applications.

NUTRITIONAL HISTORY

Question the patient about the number of main meals, frequency, type and quantity of food intake. Find out about any special diets, content of fiber and vitamin, and details of food supplements and vitamins. Find out the patient's interest on food, appetite, chewing or swallowing difficulties, feeling of taste, smell. How it affects his nutrition and what are the measures taken to overcome above mentioned problems.

SOCIAL AND PERSONAL HISTORY

It is very important to get a detailed social history from an elderly patient. The living arrangements at home is questioned in detail. The health status of the care giver, financial status of the family, understanding of the family about conditions the patient is suffering from, are important things to search during you interview.

Obtain information on the housing environment in detail (e.g., whether single storied house or multi storied house), the arrangement of steps at home, floor of the house (e.g., slippery or not), living room, how many people live in the room, ventilation, space, distance to the toilet, whether the toilet has a commode or a squatting pan or whether there are steps to the toilet, dining room or to the kitchen. Question the patient on how he obtains food, who cooks or buys the meals.

Get details on the distance to the shopping area, hospital and mode of transport and travelling time.
Find out whether there are pets at home and details of leisure activities, exercises, interest in reading books, newspapers, or watching television.
If the patient is confined to bed, find out the way to communicate with the care giver, by phone, ringing a bell, or calling loud.

Assess the health of the care giver, care giver burden in caring the patient, care giver's financial or employment issues. Find out the relationship with the neighborhood. Ask about how frequently he meets friends, do family visits, and religious or spiritual activities. Ask about engagement in religious ceromancies and activities.

Explore the patient's attitude towards family members and family members attitude towards the patient. Abuse of elders and torture are not uncommon and you might need to inquire it appropriately.

Alcohol, Smoking and recreational drug usage is also important.
If a smoker, whether one has stopped now, calculate pack years, if takes alcohol, the frequency, alcohol type, amount, dependency and complications. Use the CAGE or AUDIT questionnaires

Ask whether the patient has any properties and living wills, and who could be participated in making medical decisions. Ask these questions in a culturally sensitive manner.

CHAPTER 4

PHYSICAL EXAMINATION OF AN ELDERLY PATIENT

General examination

Observing patients when entering your examination area. Observe the gait, ability to sit on the chair, whether patient looks dyspneic, tired. Observe for personal hygiene.

See whether patient is comfortable, nutritional states, hydration states, pallor, jaundice, cyanosis. Look for ankle edema, bruises, echometric patches ulcers, bed sores, swelling and tenderness of joints, deformities, wasting of muscles, kyphoscoliosis. Check the nails for in-growing nails and paronychia.

If they are examined at bedside, look for protective padding or a protective mattress, bedside rails (partial or full), restraints, a urinary catheter, or an adult diaper.

Examine the oral cavity, look for nutritional deficiencies, fungal infections, teeth and problems due to dentures.

Check BMI

Perform breast examination look for lumps, ulcers and distortion of nipple.

Depending on the patient's presenting problem examine for vital signs and perform relevant examinations

Perform detail examination of cardiovascular system, respiratory system abdomen and nervous system pelvic and rectal examination

In rectal examination, assess for prostate, fecal impaction, rectal prolapse, hemorrhoids, anal tone. A PR is essential especially in cases of bleeding (to examine for growths) or constipation (to detect impacted feces)

In pelvic examination look for rectal or uterine prolapse and atrophic changes

Comprehensive Geriatric Assessment

In some Geriatric Units the assessment of patients is done objectively by using a standard form or check-list called the **Comprehensive Geriatric Assessment**

Components of Comprehensive Geriatric Assessment

Comprehensive geriatric assessment includes assessment of health (Physical, Mental and Cognitive), assessment of functional ability and assessment of socio environment of the patient.

Medical Assessment

- Problem list
- Co-morbid conditions
- Medication review
    a. Polypharmacy
- Nutritional status/swallowing
    a. BMI
    b. Mini Nutritional Assessment

Assessment of Function

- Basic activities of daily living

    Katz Index of Independence in Activities of Daily Living

- Instrumental activities of daily living

    Lawton Instrumental Activities of Daily Living Scale (Self-Rated Version)

- Barthel index

- Vision, Hearing
    a. Whispering test for hearing
    b. Snellen Chart for vision
- Gait & Balance
    a. Gait-time up and go test
    b. Gait speed
    c. Grip strength
- Sitting balance- Standing balance: Static and Dynamic

- Falls Assessment
    a. Intrinsic factors- Patient factors
    b. Extrinsic factors- Environmental factors

- Psychological assessment
    a) Mental states (Cognitive testing)
    b) Mood (Testing for depression)
        i. MMSE Score
        ii. Geriatric depression score
- Social Assessment
    a) Informal support needs
    b) Care resource/ caregiver stress
    c) Financial assessment

- Environmental assessment
    a) Home safety
    b) Transport

CHAPTER 5

COMMON INVESTIGATIONS

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1. A 78 years old male patient is admitted with drowsiness. He was found to be drowsy in the morning and his son could not get him to wake up and go to the washroom. He was previously well and not on any medication

a. What are the common disorders you wish to consider? List at least 5 such causes
b. What are the investigations you would request (other than radiological)?
c. Give reasons for requesting the above investigations and expected findings?
d. What is the radiological investigation you would do and draw the expected findings?

2. An 81 years old patient is admitted with fever and confusion
a. Write 5 possible causes
b. State the investigations you do to differentiate each cause

3. A 79 years old patient was admitted with pain in the hip after a fall.
a. What could be the cause of the pain?
b. What is the investigation you would immediately request?
c. Draw the expected findings

CHAPTER 6

EXERCISES

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1. **Falls in elderly**
   a. Take a history of an elderly patient admitted after a fall in patient's own language and translate it to English
   b. Give 5 risk factors of falls under the following domains
      I. Intrinsic
      II. Extrinsic
      III. Behavioral
   c. How do you assess risk of falls in elderly (Describe how you test)?
   d. Write five environmental modifications that you recommend to prevent elderly from falls
   e. What are the five domains of Fried phenotypic frailty assessment?

2. **Acute confusion in elderly (Delirium)**
   a. What is delirium?
   b. List its subtypes
   c. Write five predisposing factors
   d. Write five precipitating factors
   e. Outline the management of delirium
   f. Write five differences between dementia and delirium

3. **Urinary incontinence**
   a. Write four main types of urinary incontinence and its way of presentation
   b. Write the pathophysiology of each type
   c. Briefly write the management of each type you mentioned

4. **Cognitive decline**
   a. What are the components of Mini Mental State Examination (MMSE)
   b. What is the component of Montreal Cognitive Assessment (MoCA)
   c. What do you understand the term "Mental Capacity"? (IS THIS CORRECT?)
   d. How it is relevant in care of elderly?

5. **Multi-disciplinary team**
   a. Write a brief history of an elderly patient admitted with a stroke

b. Who are the members of a multidisciplinary team that should provide care to your patient?
c. What are the roles of each member?

6. Advanced care planning

a. Take a history of a patient with a progressive neurological disorder such as Parkinsonism or dementia
b. What is the key in care planning of the patient?
c. What are the advantages you get by discussing a care plan with the patient's carers?

7. Care giver strain

a. Mention five factors that lead to "care giver strain" in caregivers who look after frail elderly patients.
b. How would you address and minimize each factor?

CHAPTER 7

CASE SCENARIOS

In this section we expect you to write histories (minimum of 3 cases as complete documentations) of patients that you encountered during your Geriatric appointment.

This book is peer reviewed and recommended as a teaching and learning material for the Department of Medicine, Faculty of Medicine Sabaragamuwa University of Sri Lanka, by the following experts,

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