

UNIVERSITY OF ESWATINI
FACULTY OF HEALTH SCIENCES ~ GENERAL NURSING SCIENCE
MNSc FAMILY NURSE PRACTITIONER PROGRAMME
FINAL EXAMINATION: MAY 2019

COURSE CODE: GNS618
COURSE NAME: CARE OF THE ADULT AND ELDER
TIME ALLOWED: THREE (3) HOURS
PAGES: 13 INCLUDING COVER PAGE
MARKS: 100

INSTRUCTIONS:

- THERE ARE FIVE (5) CASES IN THIS EXAM.
- EACH CASE IS WORTH 20 MARKS.
- ANSWER ALL QUESTIONS FOR ALL CASES.
- START EACH CASE ON A NEW PAGE.
- WRITE LEGIBLY

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CASE 1
48-YEAR-OLD MAN WITH A COUGH

TOTAL 20 MARKS

Subjective:

CC: cough times five days.

HPI: Mr. Kunene, a 48-year-old man, enters with history of cough times 5 days with production of greenish, thick mucus. This is the third episode he has had of the same symptoms this year. He is not sure if he has had a fever. The cough is constant though worse at night and does keep him from sleeping. He wakes at night 2-3 times sweating. He complains of a sharp pain on the left lower lateral chest that is worse when he takes a deep breath.

PMH: Hospitalized once for pneumonia last year. States he has never been tested for HIV. He denies allergies to medications or food. He is currently taking no medications.

FH: Non-contributory.

SH: Not currently married. Does not have a place of his own to live. States that he does not like to be "tied down." Lives various places with various relatives. Smokes one pack a day for at least 20 years.

ROS: positive for chills and sweats at night; shortness of breath; cough (productive thick yellow sputum); unable to sleep the past few nights.

Objective:

T: 38°C BP: 150/98 Heart rate: 110 Respiratory rate: 22 O₂ sat 88%

General: Appears in mild-moderate distress. Sitting in a tri-pod position; use of accessory muscles to breathe.

HEENT: Within normal limits.

Lungs: Scattered coarse rhonchi. +tactile fremitus and + whispered pectoriloquy left lower lateral chest.

Heart: Regular rate and rhythm; no murmurs, gallops or rubs appreciated.

Answer the following questions regarding this case.

Short Answer Questions

1. (4 MARKS) My impression is that the main diagnosis is:

Based on this evidence:

Other possibilities are:

Based on:

2. (3 MARKS) List three (3) investigations you will order to differentiate the possible diagnoses.

3. (3 MARKS) Give three (3) possibilities for Mr. Kunene's underlying chronic problems.

4. (3 MARKS) Would you treat him for his blood pressure today? Why or why not?

If yes, what drug would you use? If not, what action would you take regarding his blood pressure?

5. (1 MARK) How would you express his smoking history in pack-years on his history?

Multiple Choice, 1 MARK EACH

6. What does his O₂ sat level indicate?

- A. It is within normal limits.
- B. Hypoxia.
- C. Anaemia.
- D. Hyperoxygenation.

7. If his level of blood pressure remained around 150/98 once his illness was resolved, how would you categorize his blood pressure?

- A. Normal
- B. Stage 1.
- C. Stage 2.
- D. Stage 3.

8. Typically, but not always, pulmonary tuberculosis is located in the lung

- A. Bases.
- B. Apices.
- C. Scattered throughout the lung.
- D. Left middle lobe.

9. What is the significance of the findings of +tactile fremitus and + whispered pectoriloquy?

- A. They both indicate consolidation of the lung tissue or parenchyma.
- B. Fremitus is auscultated while pectoriloquy is palpated.
- C. Neither is a significant finding in the context of this patient.
- D. They rule out pneumonia as a cause of his symptoms.

10. Mr. Kunene's pain is worse with a deep breath. This is likely due to

- A. Psychological causes.
- B. An underlying heart condition.
- C. Musculoskeletal strain.
- D. Stretching of irritated pleura surrounding the lung.

11. What is the most effective method for addressing Mr. Kunene's smoking?

- A. Apply the Ask/Assess/Advise/Agree/Assist Model.
- B. Advise him that he is likely to die early if he does not stop smoking immediately.
- C. Most smokers are aware of the dangers and choose to smoke anyway. It is pointless to advise him to stop at this point.
- D. Recommend a nicotine substitute to deal with the addictive aspect of smoking.

CASE 2
85-YEAR-OLD FRAIL WOMAN

TOTAL 20 MARKS

Subjective:

CC: Confusion

HPI: Thembe is an 85-year-old woman brought in by her daughter for assessment of confusion. Her functional abilities have been declining slowly over the past few months, but over the past three days she has become increasingly confused. Her daughter found her this morning trying to dispose of rubbish by lighting it on fire in their Mbabane apartment.

Thembe states that she feels tired but has no other complaints.

PMH: She has a history of type 2 diabetes for which she takes metformin 500 mg orally twice a day. Hospitalized for a respiratory infection earlier this year; had a "small" stroke last year for which she was hospitalized. She did well in her recovery and has only minor weakness to her right arm and leg as a residual. Allergic to penicillin-rash and trouble breathing.

FH: Both parents died in their 40s, cause unknown. She has an 83-year-old sister who has diabetes and congestive heart failure.

SH: She is a widow. She lives with her daughter and stays alone at home during the day while her daughter works. She formerly did all the cooking and cleaning at home but has become increasingly "tired" lately and leaves chores undone. Her daughter has also become concerned that she is not using the stove safely as she has left the burner on several times lately. She does not drink alcohol nor does she smoke.

Activities of Daily Living: Over the past month has been able to get in and out of bed, feed, dress, and toilet by herself. As of the past month or so she has stopped bathing unless her daughter reminds her. The daughter must assist in bathing by setting up and getting her started with the bath. This morning she was unable to feed or dress herself.

ROS: Loss of appetite today, no nausea or vomiting; no neurological signs other than those mentioned; denies fever or chills; sleeping well except that she must get up several times at night to urinate. This has increased in frequency over the past three days. Daughter has also noticed new urinary incontinence and that she is urinating small amounts frequently.

Objective:

T: 37°C BP: 95/60 Heart rate: 120 Respiratory rate: 22

General: Thin, elderly woman who appears comfortable. She is conversant.

HEENT: Within normal limits.

Lungs: Clear to auscultation.

Heart: Regular rate and rhythm; no murmurs, gallops or rubs appreciated.

Musculoskeletal: Muscle strength 3+ right upper and 4+ right lower limb, 5+ on the left upper and lower.

Neurological: No focal neurological signs. Reflexes equal throughout. Mini-cog: patient is able to draw a circle when asked to draw a clock. She can enter the numbers 12-3-6-9. She cannot properly place the hands to indicate 10 minutes after 11. She registers three words but is unable to remember them after 5 minutes.

Answer the following 7 questions regarding this case.

Short Answer Questions

1. (2 MARKS) What is your first impression of Thembe's presenting problem? Briefly describe what you think is going on.
2. (3 MARKS) Thembe's blood pressure is on the low side and she has tachycardia. Explain how you will use this information to come up with a list of differentials for her.
3. (3 MARKS) Give three differentials for her acute problem.
4. (2 MARKS) What is her score on the Mini-cog and what does it indicate?
5. (2 MARKS) What factors in her history put her at risk for dementia?
6. (6 MARKS) State four (4) investigations you will do today or additional history you will gather to diagnose her problem and the rationale for each (1 MARK for each investigation; ½ MARK for rationale).

Multiple Choice, 1 MARK EACH

7. One common side effect of metformin when used as monotherapy for diabetes is
 - A. Hypoglycaemia.
 - B. Hyperglycaemia.
 - C. Heart burn.
 - D. Thirst.
8. As an older person with dementia begins to lose the ability to care for themselves, they tend to lose independence in self-care skills in the reverse order in which they acquired them as a young child. This means that the first self-care skill they lose is usually
 - A. Feeding.
 - B. Talking.
 - C. Cooking.
 - D. Bathing.

55-YEAR-OLD WITH HEADACHESubjective:

CC: A 55-year-old man presents with a three-day history of headache. He developed some weakness in his face and on the right side today, so he decided that he should come in to clinic.

HPI: Headache started at the back of his head and then moved forward until the entire head was involved. He describes this pain as being a generalized dull ache. He has not had headaches in the past. He describes a mild nausea that accompanies this headache. He denies visual changes or any focal neurological signs. He states that he was seen one month ago for an upper respiratory infection at which time his blood pressure was 150/90. He was told to have it rechecked but has not been back into clinic.

PMH: He has been healthy most of his life. He was told one year ago that he had a borderline blood sugar reading and was advised to lose weight. Since then he has gained three kilos.

FH: His father died at age 50 of a heart attack; his mother is alive and well at age 78. She has diabetes that is well managed on oral medication. He has 5 children ages 28, 25, 22, 20 and 12. They are all well and have no chronic diseases.

SH: Teaches fifth grade at a public elementary school. He lives with his wife and three of his children and one grandchild, who is 6 months old. Patient formerly smoked 1 pack per day for 20 years but quit 6 months ago.

ROS: Denies aura with the headache; difficulty swallowing liquids this morning; vision unchanged; denies cough, shortness of breath; denies palpitations; slight nausea, denies vomiting; no changes in urination; noted weakness in the right leg and arm since yesterday accompanied by numbness and tingling.

Objective:

T: 37 °C BP: 160 / 95 Heart rate: 92 Respiratory rate: 18 O₂ sat: 92%

Waist circumference: 120 cm Height: 180 cm. Weight: 110 kg BMI: 34 kg/m²

General: Middle-aged male who appears worried; walks into office with slight limp on the right.

HEENT: within normal limits.

Lungs: Clear to auscultation.

Heart: RRR, no murmurs or gallops appreciated.

Neurological: CN II-VII grossly intact except for facial and lip drooping on the right (CN VII) and decreased sensation on right cheek and jaw (CN V).

Answer the following 4 questions regarding this case.

1. My impression is the most likely diagnosis is

A. (3 MARKS) _____

B. (2 MARKS) Based on the following data _____.

2. These three (3) diagnoses are also possible:

A. (2 MARKS) _____.

Based on (1 MARK) _____.

B. (2 MARKS) _____.

Based on (1 MARK) _____.

C. (2 MARKS) _____.

Based on (1 MARK) _____.

3. (2 MARKS) Your consulting physician states that the patient now has stage 2 hypertension based on the two elevated readings and today's level. Will you start him on antihypertensives now (yes or no)? Why or why not?

4. (4 MARKS) You order a full blood count, blood glucose, electrolytes and urinalysis. Indicate whether the results are normal. If abnormal, what do they indicate?

A. Full blood count: RBC: $5.2 \times 10^{12}/L$ WBC: $7.2 \times 10^9/L$ Hb: 12.8 g/dl Hct: 0.4 L/L

B. Random blood glucose:

C. Creatinine: 300 mmol/L with GFR 29 ml/minute.

D. Urinalysis: specific gravity 1.015; leukocytes negative; nitrites negative; blood negative.

25-YEAR-OLD WITH TOE AND BACK PAINSubjective:

CC: 25-year-old soccer player presents to clinic with a 2-year history of back pain with new complaint of right toe pain times three days.

HPI: Patient played soccer on Saturday and had a sore right great toe the entire game. He does not remember sustaining trauma as he generally kicks with his left foot. Over the past few days it has gotten worse and last night he could not even cover his foot with a sheet because it was painful. He has never had this before. He treated himself with ibuprofen he had left over from a visit to the clinic last year for his back pain. It has helped a little but he still complains of severe pain.

PMH: Patient sustained a soccer injury two-years ago and since that time has had lower back pain, especially after working. He works for an auto mechanic and his job entails heavy lifting over many hours each day. He takes ibuprofen plus paracetamol on a daily basis. HIV status unknown.

FH: Non-contributory.

SH: Unmarried; plays soccer with his friends every Saturday;

ROS: c/o stomach pains when he takes the ibuprofen; denies vomiting; denies discoloured stools.

Objective:

T: 37°C BP: 120 / 70 Heart rate: 55 Respiratory rate: 16 O₂ sat 99%

General: Young, healthy-looking male enters clinic limping, unable to bear much weight on his right foot. Wearing open-toed shoes.

HEENT: Within normal limits.

Lungs: Clear to auscultation.

Heart: RRR; no murmurs, gallops, or rubs.

Abdomen: Scaphoid. Normal liver span. Diffuse tenderness to palpation. No rebound tenderness. Bowel sounds normal and active in all four quadrants.

Spine: Limited range of motion with flexion (unable to touch toes) and extension; pain is reproduced by twisting motion; tap tenderness to lumbo-sacral area. No obvious signs of deformity, no redness or swelling over tender area.

Neurological: lower extremity DTRs equal and of normal power bilaterally; patient able to walk on toes and on heels.

Right great toe: Bright red in colour; swollen as compared to the left; the lightest touch results in exquisite pain.

You decide that today you will deal with his acute problem and have him return to deal with his chronic low back pain.

Answer the following 10 questions regarding this case.

1. (3 MARKS for diagnosis; 2 MARKS for rationale) Based on the information given, my impression is the most likely **acute** musculoskeletal problem that this patient has is: _____
Based on these findings: _____

2. (1 MARK) Which lab test will you order to further evaluate the cause of his toe pain?

3. (1 MARK) Would you expect the lab test done in #4 to be elevated or decreased?

4. (4 MARKS) This patient also has chronic back pain. List four red flags for back pain.

5. (4 MARKS) Back pain with radiculopathy, or signs of nerve impingement, should be referred to a specialist. What are four physical exam assessments you can do in the office to determine if a patient has nerve impingement from a spinal injury?

Multiple Choice (1 MARK each)

6. In terms of our case study patient's back pain, it is critical that the FNP consider that

- A. It is of little consequence because back pain in young adults is generally not serious.
- B. It should be fully assessed, including x-rays, HIV test and TB screening.
- C. The patient should be given exercises to stretch the back.
- D. It is common in soccer players and likely something the patient will have to live with.

7. Common side effects of non-steroidal anti-inflammatory medications (NSAIDs) include

- A. Renal impairment and GI bleeding.
- B. Liver toxicity.
- C. Benign, mild abdominal pain.
- D. Idiosyncratic exacerbation of pain.

8. A 30-year-old pregnant woman presents with complaint of her hands becoming numb at night. The sensation wakes her several times and is relieved by opening and closing her hands several times. On physical exam you will perform which test(s) to further assess the problem with her hands?

- A. Drawer and Apley.
- B. McMurray's
- C. Allen
- D. Phalen and Tinel.

9. The most common cause of acute bursitis is

- A. Inactivity.
- B. Joint overuse.
- C. fibromyalgia.
- D. Bacterial infection.

10. The most common symptom of osteoporosis is

- A. Generally there are no symptoms.
- B. Pain in the affected bones at rest.
- C. Pain in the affected bones with activity.
- D. Swelling and erythema.

33-YEAR-OLD WOMAN WITH ABDOMINAL PAINSubjective:

CC: Phiwa is a 33-year-old woman who presents with a 2-week history of upper abdominal pain.

HPI: States that pain started in the mid-upper abdominal area and was intermittent at the beginning. The pain is now constant, although its intensity varies throughout the day.

PMH: She is generally healthy. She does take aspirin almost daily for various joint pains. Without this she finds that she cannot keep working.

FH: non-contributory.

SH: Born in Siteki. Lives with her 12-year-old son and 14-year-old daughter and her mother. Cleans houses for a living. Does not smoke nor does she drink alcohol. Drinks two cups of tea a day.

ROS: Admits to dry cough, especially in the morning; mild nausea and loss of appetite since this began; she notices that she feels full shortly after starting her meal; denies dark stools or blood in the stool.

Objective:

T: 37°C BP: 110/60 Heart rate: 78 Respiratory rate: 18 O₂ sat 97% BMI: 17 kg/m²

General: Thin woman who appears older than her stated age; no acute discomfort.

Skin: No jaundice.

HEENT: Within normal limits except for pale conjunctiva.

Lungs: Clear to auscultation; no signs of consolidation.

Heart: RRR with murmurs, gallops, or rubs.

Abdomen: Normal bowel sounds. Tenderness to palpation in the epigastric area with slight guarding. No rebound tenderness.

Back: Full range of motion. No deformities noted.

Neurological: Within normal limits.

Answer the following 5 questions regarding this case.

1. (4 MARKS) At this point we can say that Phiwa has dyspepsia. What are four possible causes of dyspepsia?
2. (3 MARKS) Identify three alarm symptoms for dyspepsia.
3. (4 MARKS) Name investigations will you order as an initial step to work-up her abdominal problem.
4. (2 MARKS) If you exclude the alarm symptoms, how will you treat Phiwa today? Give one pharmacological and one non-pharmacological treatment.

5. Matching (7 MARKS)

Match the location of abdominal pain with likely pathology. Indicate the letter of the likely pathology next to the location of the abdominal pain.

Location of pain	Likely pathology
I. Right upper quadrant _____	A. Appendicitis; cancer of cecum; Crohn's disease; ovarian cyst; ectopic pregnancy.
II. Epigastrium _____	B. Small bowel obstruction; early appendicitis; referred pain from chest.
III. Left upper quadrant and umbilical _____	C. Cystitis; acute urinary retention.
IV. Right or left flank _____	D. Diverticulitis; cancer of sigmoid colon; ulcerative colitis; constipation, ovarian cyst; ectopic pregnancy.
V. Suprapubic _____	E. Gall bladder or liver disease; lower lobe pneumonia.
VI. Right iliac fossa _____	F. Dyspepsia; peptic ulcer; pancreatitis; referred pain from MI or pneumonia.
VII. Left iliac fossa _____	G. Ureteric colic; leaking abdominal aortic aneurysm.