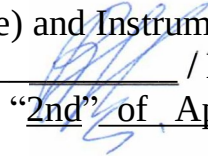


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Federal State Budget Educational Institution  
of Higher Education  
Pacific State Medical University  
of the Ministry of Health of the Russian Federation

APPROVED BY

Director of the Institute of Therapy (Internal  
Medicine) and Instrumental Diagnostics

 / Nevzorova V.A./  
“2nd” of April 2026

## COLLECTION OF ASSESSMENT TOOLS

### B1.C.30 Faculty therapy of the basic educational program of Higher Education

|                                    |                                                                                                                                                                                                                     |
|------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Specialty</b>                   | <b>31.05.01 General Medicine (English-language program)</b><br>(code, name)                                                                                                                                         |
| <b>Degree</b>                      | Specialist's degree                                                                                                                                                                                                 |
| <b>Profile</b>                     | 02 "Healthcare"<br>(in the field of providing primary health care to the population in medical organizations: polyclinics, outpatient clinics, inpatient/outpatient facilities of the municipal health care system) |
| <b>Mode of study</b>               | <b>Full-time</b>                                                                                                                                                                                                    |
| <b>Period of mastering the BEP</b> | <b>6 years</b><br>(nominal length of study)                                                                                                                                                                         |
| <b>Institute</b>                   | of Therapy (Internal Medicine) and Instrumental Diagnostics                                                                                                                                                         |

Vladivostok, 2026

## 1. INTRODUCTION

**1.1. Collection of Assessment Tools** is a document that regulates the format, content, and types of assessment tools for continuous assessment, interim examination and final (state final) examination, and graded criteria for each type of assessment tools.

**1.2. Assessment tools allows to evaluate the development of universal, general professional, and professional competencies (UCs, GPCs and PCs respectively) outlined in Federal State Educational Standard of Higher Education and defined in the basic educational program of higher education for the specialty 31.05.01 General Medicine (English-language program), profile 02 "Healthcare" (in the field of providing primary health care to the population in medical organizations: polyclinics, outpatient clinics, inpatient/outpatient facilities of the municipal health care system).**

([BEP HE for the 31.05.01 General Medicine \(English-language program\)](#)), section 3. Learning Outcomes Requirements of the Basic Educational Program of Higher Education)

## 2. DOCUMENT BODY

### 2.1. Types of Assessment, Formats of Assessment Tools

| No. | Types of assessment          | Assessment Tools Format    |
|-----|------------------------------|----------------------------|
| 1   | <b>Continuous assessment</b> | <b>Interview Questions</b> |
|     |                              | <b>Tests</b>               |
|     |                              | <b>Mini-Case Studies</b>   |
|     |                              | <b>Checklists</b>          |
| 2   | <b>Interim assessment</b>    | <b>Interview Questions</b> |
|     |                              | <b>Tests</b>               |
|     |                              | <b>Mini-Case Studies</b>   |
|     |                              | <b>Checklists</b>          |

**3. The contents of assessment tools** for continuous and interim examination are prepared by the teacher of the course

#### Interview questions

|   | Code     | Competence description / name of labor function / name of work activity / text                                                                                                                                                                                                                |
|---|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| S | 31.05.01 | 31.05.01 General Medicine (English-language program)                                                                                                                                                                                                                                          |
| C | GPC-4    | Able to use medical devices included in the healthcare guidelines, as well as perform medical examination to make a diagnosis                                                                                                                                                                 |
| C | GPC-7    | Able to prescribe treatment and monitor its efficacy and safety                                                                                                                                                                                                                               |
| C | PC-3     | Ability and readiness to collect and analyze complaints that a patient presents with, anamnestic data, examination results, results of laboratory and instrumental tests, biopsy and other studies in order to identify patient's condition or establish the presence or absence of a disease |
| C | PC-4     | Ability and readiness to identify main pathological conditions, syndromes, symptoms of diseases, specific diseases of a patient in accordance with International Statistical Classification of Diseases and Related Health Problems                                                           |
| F | A/02.7   | Examination of the patient in order to make a diagnosis                                                                                                                                                                                                                                       |

|   |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|---|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| I |  | <p><b>ANSWER THE QUESTIONS</b></p> <p><b>PULMONOLOGY</b></p> <ol style="list-style-type: none"> <li>1. Definition of the term "respiratory failure" (RF). Classification of RF by pathogenesis, severity, and anatomical principle. Instrumental and laboratory diagnostics of RF.</li> <li>2. Pneumonia. Definition. Classification of pneumonia. Community-acquired pneumonia (CAP). Etiology and probable pathogens in patients of various clinical groups.</li> <li>3. Community-acquired pneumonia (CAP). The main pathogenetic mechanisms of CAP development. The pathomorphology of CAP depending on the clinical and radiological picture and the causative agent (bacterial, viral, viral-bacterial, atypical pathogens, etc.).</li> <li>1. Community-acquired pneumonia (CAP). Clinical presentation, instrumental and laboratory examination methods for CAP. Diagnostic criteria and formulation.</li> <li>2. Community-acquired pneumonia (CAP). Risk factors for protracted pneumonia. Pulmonary and extrapulmonary complications, diagnostic criteria, differential diagnosis, and formulation of a clinical diagnosis.</li> <li>4. Community-acquired pneumonia (CAP). Treatment site selection. Antibacterial therapy tactics for CAP.</li> <li>5. Community-acquired pneumonia (CAP). Criteria for severe progression. Issues of pneumococcal infection prevention.</li> <li>6. Chronic obstructive pulmonary disease (COPD). Definition. Risk factors for the development and progression of COPD.</li> <li>7. Chronic obstructive pulmonary disease (COPD). Pathogenesis of COPD. Pathophysiology of COPD: obstructive mechanisms, pulmonary hyperinflation and air trapping, gas exchange disorders.</li> <li>8. COPD. Systemic manifestations, comorbidity issues.</li> <li>9. Chronic obstructive pulmonary disease (COPD). Spirometry criteria for diagnosis. Spirometry methodology.</li> <li>10. Chronic obstructive pulmonary disease (COPD). Clinical presentation and COPD phenotypes. Laboratory and instrumental studies in COPD.</li> <li>11. Chronic obstructive pulmonary disease (COPD). COPD classification: severity assessment, symptom assessment, and exacerbation risk categories. COPD diagnosis formulation according to A, B, E.</li> <li>12. Chronic obstructive pulmonary disease (COPD). Treatment of stable COPD, main drug groups, and initial drug therapy.</li> <li>13. Chronic obstructive pulmonary disease (COPD). COPD exacerbations, assessment of exacerbation severity, indications for hospitalization, respiratory support.</li> <li>14. Bronchial asthma (BA). Definition. Etiology of BA. Risk factors for BA development.</li> <li>15. Bronchial asthma (BA). Pathogenesis of BA. Airway hyperreactivity in BA, mechanisms of bronchial obstruction in BA.</li> <li>16. Bronchial asthma (BA). Clinical presentation of BA. Laboratory and instrumental research methods in BA. Diagnostic criteria for BA.</li> <li>17. Bronchial asthma (BA). Spirometry and peak flowmetry for the diagnosis of bronchial asthma. Concepts of reversibility and variability of bronchial obstruction.</li> <li>18. Bronchial asthma (BA). Classification of BA. Asthma phenotypes.</li> <li>19. Bronchial asthma (BA). Degree of control and assessment of severity. Formulation of a clinical diagnosis.</li> </ol> |
|   |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

20. Bronchial asthma (BA). Treatment goals and objectives. Principles of step-down asthma therapy. Treatment monitoring.
21. Asthma exacerbation. Severity classification. Principles of diagnosis and medical care.
22. Severe asthma attack. Diagnostic criteria. Emergency care.
23. Life-threatening asthma attack. Status asthmaticus (AS). Diagnostic criteria. Emergency care.

### **CARDIOLOGY**

1. Hypertension (AH). Definition. Etiology and risk factors. Pathogenesis of AH, dysfunction of regulatory mechanisms of systems that maintain normal blood pressure.
2. Hypertension. Target organ damage in hypertension and its diagnosis.
3. Hypertension (AH). Classification of AH by stages and degrees. Assessment of individual risk (risk stratification). Principles of formulating a clinical diagnosis.
4. Methods of measuring blood pressure (BP): office BP measurement, self-monitoring of BP, 24-hour BP monitoring.
5. Hypertension. Diseases associated with elevated blood pressure. The main risk factors for vascular accidents.
6. Hypertension. General principles of patient management. Target blood pressure levels. Indications for initiating antihypertensive therapy.
7. Hypertension (AH). Treatment goals. Non-drug treatments. General principles of drug therapy.
8. Hypertension. Pharmacotherapy of hypertension: primary and additional classes of antihypertensive drugs.
9. Hypertensive crises. Definition. Triggers for sudden increases in blood pressure. Typical manifestations. Treatment strategies. Emergency treatment considerations.
10. Chronic heart failure (CHF). Definition. Etiology. Pathogenesis of CHF. Causes of chronic heart failure.
11. Chronic heart failure (CHF). Functional classes of CHF. Stages of CHF.
12. Characteristics of chronic heart failure depending on the left ventricular ejection fraction.
13. Chronic heart failure (CHF). Clinical presentation of CHF: typical clinical signs and symptoms. Pathogenesis of symptoms.
14. Chronic heart failure (CHF). Diagnostic criteria. Laboratory and instrumental diagnostic studies for CHF. 6-minute walk test.
15. Treatment of patients with chronic heart failure (CHF). Main drug groups. Therapy selection based on left ventricular ejection fraction.
16. The main classes of drugs for the treatment of patients with CHF with reduced left ventricular ejection fraction. Their mechanism of action in CHF.
17. Chronic heart failure (CHF). Life-threatening conditions associated with decompensated heart failure, diagnosis, and treatment strategies. Indications for emergency hospitalization.
18. Stable coronary artery disease (SCAD). Definition. Etiology. Pathogenesis. Risk factors. Classification of stable CAD.
19. Stable coronary artery disease (SCAD). Clinical presentation, pain characteristics. Functional classes of angina.
20. Stable coronary artery disease (SCAD). Instrumental and laboratory diagnostic methods. Principles for selecting diagnostic methods in stable CAD.
21. Stable coronary artery disease (SCAD). Risk factor modification. Principles of drug treatment for stable CAD.

23. A
24. Myocardial necrosis markers. Role in the diagnosis of non-ST-segment elevation acute coronary syndrome (NSTEMI-ACS).
25. ST-segment elevation myocardial infarction (STEMI). Definition. P
26. Typical clinical presentation of ST-segment elevation myocardial infarction (STEMI). Pain characteristics.
27. Laboratory and instrumental methods for diagnosing myocardial infarction.
28. ECG diagnostics of ST-segment elevation myocardial infarction at various stages. Topical diagnostics.
29. Complications of myocardial infarction: cardiogenic shock. Pathogenesis. Clinical presentation, diagnosis, and treatment strategy.
30. Complications of myocardial infarction: acute left ventricular failure, pulmonary edema. Pathogenesis. Clinical presentation, diagnosis, and treatment strategy.
31. Atrial fibrillation (AF). Definition. Etiology. Pathogenesis. Clinical presentation. ECG criteria for AF.
32. Atrial fibrillation (AF). Criteria for establishing the diagnosis of AF. Instrumental diagnostic studies.
33. Atrial fibrillation (AF). Drug therapy for AF: heart rate control, heart rhythm control. The role of anticoagulant therapy.
34. Infective endocarditis. Definition. Etiology. Pathogenesis. Classification.
35. Infective endocarditis. Clinical manifestations. Characteristics of heart valve damage. Laboratory and instrumental examination methods.
36. Infective endocarditis. Etiotropic therapy. Indications for surgical treatment. Prognosis.

### **RHEUMATOLOGY**

1. Rheumatoid arthritis. Definition. Pathogenesis. Classification.
2. Rheumatoid arthritis. Clinical presentation. Diagnostic criteria and formulation.
3. Rheumatoid arthritis. Treatment principles. General recommendations. Disease-modifying drugs.
4. Osteoarthritis (osteoarthrosis). Definition. Etiology. Pathogenesis. Nature and stages of pathological changes in cartilage and bone tissue in osteoarthritis. Risk factors for osteoarthritis.
5. Osteoarthritis (osteoarthrosis). Diagnostic criteria. Classification. Characteristics of the joint syndrome. Clinical manifestations of osteoarthritis.
6. Osteoarthritis (osteoarthrosis). Laboratory and instrumental diagnostic methods. Radiographic stages.
7. Osteoarthritis therapy. Symptomatic agents. Hormonal drugs. Disease-modifying drugs. Non-drug treatment.
8. Gout. Definition. Etiology. Pathogenesis. Clinical presentation. Typical form of the first attack. Tophi. Laboratory and instrumental diagnostic methods. Diagnostic criteria.
9. Clinical and radiological manifestations of chronic gouty arthritis.
10. Gout treatment. Recommendations for non-drug therapy. Treatment of an acute gout attack.
11. Gout treatment. Treatment of chronic gouty arthritis. Correction of hyperuricemia in a patient with gout.
12. Systemic lupus erythematosus (SLE). Etiology. Pathogenesis. Clinical manifestations of SLE. Variants of skin and mucous membrane lesions.

13. Systemic lupus erythematosus (SLE). Features of articular syndrome. Diagnostic criteria for SLE (clinical, immunological).
14. Systemic lupus erythematosus (SLE). Systemic manifestations: lung damage, heart and vascular damage, nervous system damage, lupus nephritis, hematological manifestations.
15. Systemic lupus erythematosus (SLE). Laboratory diagnostics of SLE. Treatment principles.
16. Chronic rheumatic heart disease. Definition. Pathogenesis. Classification.
17. Chronic rheumatic heart disease. Clinical presentation. Diagnostic criteria and formulation.
18. Chronic rheumatic heart disease. Treatment principles. General recommendations. Disease-modifying drugs.

#### **KIDNEY DISEASES**

1. Glomerulonephritis. Classification. Main clinical and laboratory syndromes in glomerulonephritis. Acute nephritic syndrome. Nephrotic syndrome.
2. Chronic glomerulonephritis (CGN). Clinical course variants of CGN. Diagnostic methods.
3. Chronic glomerulonephritis (CGN). Treatment principles. Main medications and approaches to therapy.
4. Chronic pyelonephritis. Definition. Etiology. Pathogenesis. Classification. Clinical presentation.
5. Chronic pyelonephritis. Laboratory and instrumental diagnostic methods. Treatment principles.
6. Chronic kidney disease (CKD). Definition. Risk factors for the development and progression of CKD. Markers of kidney damage. Diagnostic criteria and staging.
7. Chronic kidney disease (CKD). CKD diagnostic algorithm. Kidney function assessment methods. Albuminuria/proteinuria assessment. CKD diagnosis formulation.
8. Chronic kidney disease (CKD). Treatment strategies depending on the stage of CKD. Nephroprotective strategy.
9. Acute kidney injury (AKI). Definition. Causes of AKI. Prerenal, renal, and postrenal AKI.
10. Acute kidney injury (AKI). Diagnostic criteria and staging. Principles of managing patients with AKI. Prevention of AKI.

#### **DISEASES OF THE DIGESTIVE SYSTEM**

1. Peptic ulcer disease. Definition. Etiology. Pathogenesis. Pathomorphology. Classification of peptic ulcer disease.
2. Peptic ulcer disease. Main clinical syndromes. Laboratory and instrumental studies. Differential diagnosis.
3. Peptic ulcer disease. Treatment during an exacerbation: dietary therapy and drug therapy. Monitoring treatment effectiveness. Preventive drug therapy for peptic ulcer exacerbations. Indications for surgical treatment. Prognosis.
4. Functional dyspepsia. Definition. Classification. Clinical presentation. Differential diagnosis. Treatment.
5. Chronic pancreatitis. Definition. Etiology. Pathogenesis. Main clinical syndromes.
6. Chronic pancreatitis. Laboratory and instrumental studies. Diagnostic criteria. Differential diagnosis.
7. Chronic pancreatitis. Complications. Treatment. Prognosis.

#### **DISEASES OF THE BLOOD SYSTEM**

|  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|--|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  |  | <ol style="list-style-type: none"> <li>1. Iron deficiency anemia. Clinical presentation of IDA: manifestations of anemic and sideropenic syndromes. Specific aspects of history taking, physical examination, and clinical laboratory examination.</li> <li>2. Iron deficiency anemia. Blood picture of iron deficiency anemia. Changes in biochemical laboratory parameters. Interpretation of laboratory test results.</li> <li>3. Iron deficiency anemia. Diagnostic search for the causes (diseases) underlying iron deficiency anemia. Treatment strategy and examination plan.</li> <li>4. Prevention of iron deficiency anemia. Treatment principles.</li> <li>5. Vitamin B12 deficiency anemia: causes, clinical manifestations, and laboratory diagnostics. Treatment strategies and principles.</li> <li>6. Folic acid deficiency anemia: causes, clinical manifestations, and laboratory diagnostics. Differential diagnosis, examination plan, treatment strategy, and principles of treatment.</li> </ol> |
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### Test questions

|   | Code     | Competence description / name of labor function / name of work activity / text                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|---|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| S | 31.05.01 | General Medicine (English-language program)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| C | GPC-4    | Able to use medical devices included in the healthcare guidelines, as well as perform medical examination to make a diagnosis                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| C | GPC-7    | Able to prescribe treatment and monitor its efficacy and safety                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| C | PC-3     | Ability and readiness to collect and analyze complaints that a patient presents with, anamnestic data, examination results, results of laboratory and instrumental tests, biopsy and other studies in order to identify patient's condition or establish the presence or absence of a disease                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| C | PC-4     | Ability and readiness to identify main pathological conditions, syndromes, symptoms of diseases, specific diseases of a patient in accordance with International Statistical Classification of Diseases and Related Health Problems                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| F | A/02.7   | Examination of the patient in order to make a diagnosis                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| I |          | <b>ANSWER LEVEL 1 TEST QUESTIONS (ONE CORRECT ANSWER)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|   |          | <ol style="list-style-type: none"> <li>1. The most significant risk factor for the development of chronic bronchopulmonary diseases is <ol style="list-style-type: none"> <li>a) *smoking</li> <li>b) frequent viral respiratory infections</li> <li>c) air pollution</li> <li>d) bronchial hyperreactivity</li> </ol> </li> <li>2. A common clinical feature for the emphysematous and bronchitis phenotypes of COPD is <ol style="list-style-type: none"> <li>a) *dyspnea</li> <li>b) hypercapnia</li> <li>c) polycythemia</li> <li>d) chronic cough</li> </ol> </li> <li>3. Round stamped defects in the epiphyses of bones are observed in <ol style="list-style-type: none"> <li>a) *gout</li> <li>b) psoriatic arthritis</li> <li>c) multiple myeloma</li> </ol> </li> </ol> |

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|--|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  |  | <p>d) systemic lupus erythematosus</p> <p>4. B12 deficiency anemia is characterized by</p> <ol style="list-style-type: none"> <li>*hyperchromia, macrocytosis, cytopenia</li> <li>hypochromia, microcytosis</li> <li>normochromia, normocytosis</li> <li>the presence of blast cells</li> </ol> <p>5. Zimnitsky's urine analysis involves determining</p> <ol style="list-style-type: none"> <li>*volume and specific gravity of urine every three hours during the day</li> <li>volume and specific density of daily urine</li> <li>volume and specific density of morning urine</li> <li>urine protein concentrations every three hours during the day</li> </ol> <p>6. A 46-year-old female patient develops attacks of chest pain at night, during which a transient ST segment elevation is recorded on the electrocardiogram. The most likely diagnosis is</p> <ol style="list-style-type: none"> <li>*variant angina</li> <li>acute coronary syndrome with ST elevation</li> <li>acute pericarditis</li> <li>pulmonary embolism</li> </ol> <p>7. A change in the blood characteristic of the acute stage of myocardial infarction is</p> <ol style="list-style-type: none"> <li>*increased troponin levels</li> <li>increased amylase activity</li> <li>decrease in the De Ritis coefficient</li> <li>increased activity of gamma-glutamyl transferase</li> </ol> <p>8. In iron deficiency anemia, the following characteristics of red blood cells are observed in a general blood test</p> <ol style="list-style-type: none"> <li>*hypochromia</li> <li>hyperchromia</li> <li>microspherocytosis</li> <li>ocanthocytosis</li> </ol> <p>9. The typical form of myocardial infarction is</p> <ol style="list-style-type: none"> <li>*anginal</li> <li>cerebral</li> <li>arrhythmic</li> <li>asthmatic</li> </ol> <p>10. The post-infarction period is characterized by the presence of an ECG</p> <ol style="list-style-type: none"> <li>*deep Q wave</li> <li>monophasic curve</li> <li>two-phase "R" wave</li> <li>negative P wave</li> </ol> <p>11. For diagnosing the functional class of chronic heart failure, the simplest and most informative method is</p> <ol style="list-style-type: none"> <li>*6-minute walk distance</li> <li>weighing</li> </ol> |
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- c) EchoCG
  - d) bicycle ergometry
12. The main sign of infective endocarditis on echocardiography
- a) \*vegetation on valve flaps
  - b) left ventricular aneurysm
  - c) aortic insufficiency
  - d) aortic stenosis
13. Cytolysis syndrome in chronic hepatitis of any etiology is characterized by
- a) \*increased transaminase levels
  - b) increased alkaline phosphatase levels
  - c) increased cholesterol levels
  - d) increased levels of direct bilirubin
14. The leading criterion of nephrotic syndrome
- a) \*proteinuria > 3.5 g/l in combination with hypoalbuminemia
  - b) proteinuria > 3.5 g/l in combination with hyperalbuminemia
  - c) the presence of Bence-Jones protein in urine
  - d) proteinuria <3.5 g/l combined with hypoalbuminemia
15. The key method for diagnosing pneumonia is
- a) \*chest x-ray
  - b) fiberoptic bronchoscopy
  - c) computed tomography
  - d) study of external respiratory function
16. The main drug method of pathogenetic therapy for myocardial infarction with ST segment elevation in patients admitted no later than 6 hours from the onset of the disease
- a) \*thrombolytic therapy
  - b) intravenous heparin infusion
  - c) intravenous infusion of selective beta-blockers
  - d) intravenous infusion of nitroglycerin
17. The cardiac-specific isoenzyme is
- a) \*creatine phosphokinase MB
  - b) aspartic transaminase
  - c) creatine phosphokinase BB
  - d) lactate dehydrogenase-3
18. Sign of left ventricular heart failure
- a) \*attacks of cardiac asthma
  - b) swelling of the legs
  - c) hepatomegaly
  - d) visible pulsation of the veins in the neck
19. Creatorrhea is characteristic of
- a) \*chronic pancreatitis
  - b) Crohn's disease
  - c) ischemic colitis
  - d) irritable bowel syndrome

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|  |  | <p>20. The patient, a 60-year-old woman, presented with mild arterial hypertension. She had significant proteinuria (up to 18-20 g/day) and an elevated plasma protein concentration (95 g/L). The probable diagnosis was</p> <ul style="list-style-type: none"> <li>a) *multiple myeloma</li> <li>b) amyloidosis</li> <li>c) chronic glomerulonephritis</li> <li>d) chronic pyelonephritis</li> </ul> <p>21. When the ulcer penetrates into the pancreas, the level increases</p> <ul style="list-style-type: none"> <li>a) *amylases</li> <li>b) lipases</li> <li>c) glucose</li> <li>d) alkaline phosphatase</li> </ul> <p>22. A decrease in the size of the kidney, deformation of the renal pelvis-calyceal system, uneven contours of the small calyces, obliteration of small vessels of the renal cortex are the most characteristic</p> <ul style="list-style-type: none"> <li>a) *for a shriveled kidney</li> <li>b) for tuberculosis of the kidneys</li> <li>c) for renal hypoplasia</li> <li>d) for kidney tumor</li> </ul> <p>23. Peak flowmetry allows</p> <ul style="list-style-type: none"> <li>a) *to assess the variability of PSV over a period of time</li> <li>b) assess the function of external respiration in children under 2 years of age</li> <li>c) evaluate FVC</li> <li>d) estimate FEV1</li> </ul> <p>24. Characteristic changes in spirometric parameters during exacerbation of bronchial asthma are</p> <ul style="list-style-type: none"> <li>a) *decrease in forced expiratory flow rate in the first second</li> <li>b) decreased forced vital capacity of the lungs</li> <li>c) increase in the Tiffeneau index</li> <li>d) decreased inspiratory power</li> </ul> <p>25. Rheumatoid arthritis is a joint disease.</p> <ul style="list-style-type: none"> <li>a) *inflammatory</li> <li>b) degenerative</li> <li>c) metabolic</li> <li>d) reactive</li> </ul> <p>26. The cause of arterial hypertension in tumors localized in the adrenal glands</p> <ul style="list-style-type: none"> <li>a) *primary hyperaldosteronism</li> <li>b) paraganglioma</li> <li>c) renin-secreting tumor</li> <li>d) Cushing's disease</li> </ul> <p>27. On the ECG, the duration of the PQ interval is more than 0.20 sec. This is typical for</p> <ul style="list-style-type: none"> <li>a) *first degree atrioventricular block</li> <li>b) complete atrioventricular block</li> </ul> |
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|  |  | <p>c) second-degree atrioventricular block<br/>d) bundle branch block</p> <p>28. With first degree atrioventricular block</p> <p>a) *a slowing of atrioventricular conduction is recorded, which is manifested on the ECG by a constant prolongation of the PQ interval<br/>b) the loss of individual ventricular contractions is not accompanied by a gradual prolongation of the PQ(R) interval<br/>c) a gradual slowing of conduction along the AV node is observed from one complex to another, up to a complete delay of one electrical impulse<br/>d) Samoilov-Wenckebach periods are observed.</p> <p>29. Skin in cardiogenic shock</p> <p>a) *pale, damp<br/>b) cyanotic, dry<br/>c) pale, dry<br/>d) pink, wet</p> <p>30. Atherogenic class of lipoproteins are</p> <p>a) *low-density lipoproteins<br/>b) high-density lipoproteins<br/>c) chylomicrons<br/>d) phospholipids</p> <p>31. The irreversible component of bronchial obstruction is</p> <p>a) *peribronchial fibrosis<br/>b) bronchospasm<br/>c) inflammatory swelling of the bronchial mucosa<br/>d) dysfunction of the mucociliary apparatus of the bronchi</p> <p>32. The following FVD indicators are characteristic of severe COPD:</p> <p>a) *FEV1/FVC &lt; 0.70; FEV1 &lt; 30% predicted or FEV1 &lt; 50% predicted in combination with chronic respiratory failure<br/>b) FEV1/FVC &lt; 0.70; FEV1 &gt;60% of predicted<br/>c) FEV1/FVC &lt; 0.70; 50% &lt; FEV1 &lt; 70% of predicted<br/>d) FEV1/FVC &lt; 0.70; 60% &lt; FEV1 &lt; 80% of predicted</p> <p>33. Name one of the main clinical criteria of chronic kidney disease</p> <p>a) *albuminuria/proteinuria<br/>b) decreased renal concentration function<br/>c) hematuria<br/>d) cylindruria</p> <p>34. Which systemic connective tissue disease is characterized by laboratory changes such as increased ESR, anemia, lymphopenia, determination of antinuclear factor, anti-SM antibodies, and a false-positive Wasserman reaction?</p> <p>a) *systemic lupus erythematosus<br/>b) systemic scleroderma<br/>c) diffuse eosinophilic fasciitis<br/>d) Sharp syndrome</p> |
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|  |  | <p>35. Skin changes represented by maculopapular rashes on the face, in the area of the zygomatic arches and the bridge of the nose (the “butterfly” symptom) are characteristic of</p> <ol style="list-style-type: none"> <li>*systemic lupus erythematosus</li> <li>systemic scleroderma</li> <li>Sharp syndrome (mixed connective tissue disease)</li> <li>diffuse (eosinophilic) fasciitis</li> </ol> <p>36. Absolute contraindication for the use of angiotensin-converting enzyme inhibitors and angiotensin II receptor blockers</p> <ol style="list-style-type: none"> <li>*bilateral significant stenosis of the renal arteries</li> <li>chronic kidney disease</li> <li>hypokalemia</li> <li>Conn's syndrome</li> </ol> <p>37. Improves the prognosis in patients with coronary heart disease who have had a myocardial infarction</p> <ol style="list-style-type: none"> <li>*beta blockers</li> <li>nitrates</li> <li>dihydropyridine calcium antagonists</li> <li>digoxin</li> </ol> <p>38. To slow the heart rate in paroxysmal atrial fibrillation in patients with myocardial infarction, it is possible to use</p> <ol style="list-style-type: none"> <li>*beta blockers</li> <li>ivabradine</li> <li>cardiac glycosides</li> <li>propafenone</li> </ol> <p>39. The most proven effect of anticoagulants in patients with myocardial infarction is</p> <ol style="list-style-type: none"> <li>*reduction in the incidence of thromboembolic complications</li> <li>antianginal action.</li> <li>limitation of the infarction zone</li> <li>reduction in the frequency of reinfarction</li> </ol> <p>40. Side effect of statin therapy</p> <ol style="list-style-type: none"> <li>*myopathy</li> <li>thyroid dysfunction</li> <li>headaches</li> <li>impotence</li> </ol> <p>41. In order to monitor the safety of statin therapy, the level should be assessed</p> <ol style="list-style-type: none"> <li>*creatine phosphokinase</li> <li>troponin</li> <li>alkaline phosphatase</li> <li>amylase</li> </ol> <p>42. Characteristic radiographic signs of osteoarthritis</p> <ol style="list-style-type: none"> <li>*subchondral sclerosis and osteophytes</li> <li>erosion</li> <li>cystic enlightenment</li> <li>osteolysis</li> </ol> |
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|  |  | <p>43. In rheumatoid arthritis, the joints are most often affected.</p> <ul style="list-style-type: none"> <li>a) *interphalangeal</li> <li>b) knee</li> <li>c) sacroiliac joints</li> <li>d) maxillofacial</li> </ul> <p>44. In the diagnosis of infective endocarditis, a decisive role is played by</p> <ul style="list-style-type: none"> <li>a) *vegetation on the valves during echocardiography</li> <li>b) increased ESR</li> <li>c) auscultatory dynamics of heart murmurs</li> <li>d) worsening heart failure</li> </ul> <p>45. The most common complication in the first hours of acute myocardial infarction</p> <ul style="list-style-type: none"> <li>a) *rhythm disturbance</li> <li>b) cardiogenic shock</li> <li>c) pulmonary edema</li> <li>d) heart rupture</li> </ul> <p>46. The most reliable confirmation of pancreatitis is</p> <ul style="list-style-type: none"> <li>a) *high blood amylase levels</li> <li>b) girdle-like pain</li> <li>c) hyperglycemia</li> <li>d) steatorrhea</li> </ul> <p>47. Melena in the presence of hepatosplenomegaly is suspicious</p> <ul style="list-style-type: none"> <li>a) *bleeding from esophageal varices</li> <li>b) bleeding duodenal ulcer</li> <li>c) ulcerative colitis</li> <li>d) mesenteric artery thrombosis</li> </ul> <p>48. Portal hypertension can be observed in</p> <ul style="list-style-type: none"> <li>a) *liver cirrhosis</li> <li>b) chronic hepatitis</li> <li>c) metastatic liver cancer</li> <li>d) chronic pancreatitis</li> </ul> <p>49. Indicate the most common location of thrombus formation that causes pulmonary artery thromboembolism</p> <ul style="list-style-type: none"> <li>a) *inferior vena cava system (deep veins of the lower extremities and pelvis)</li> <li>b) superior vena cava system</li> <li>c) right atrium</li> <li>d) left atrium</li> </ul> <p>50. To which of the following categories should a patient be assigned who walks a distance of 350 m during the 6-minute walk test?</p> <ul style="list-style-type: none"> <li>a) *NYHA functional class II</li> <li>b) NYHA functional class I</li> <li>c) NYHA functional class III</li> <li>d) NYHA functional class IV</li> </ul> |
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|  |  | <p>51. Select a medication prescribed for the treatment of B12 deficiency anemia</p> <ul style="list-style-type: none"> <li>a) *cyanocobalamin</li> <li>b) prednisolone</li> <li>c) heparin</li> <li>d) methyldopa</li> </ul> <p>52. Thrombolysis in acute myocardial infarction is effective in the first</p> <ul style="list-style-type: none"> <li>a) *6 hours</li> <li>b) 14 hours</li> <li>c) 16 hours</li> <li>d) only in the first 2 hours</li> </ul> <p>53. Improvement of the long-term prognosis in patients who have suffered a large-focal myocardial infarction is possible</p> <ul style="list-style-type: none"> <li>a) *<math>\beta</math>-blockers</li> <li>b) indirect anticoagulants</li> <li>c) nitrates</li> <li>d) antibiotics</li> </ul> <p>54. Select a research method that is crucial in the differential diagnosis of myocarditis and coronary heart disease</p> <ul style="list-style-type: none"> <li>a) *coronary angiography</li> <li>b) electrocardiography</li> <li>c) echocardiography</li> <li>d) intracardiac electrophysiological study</li> </ul> <p>55. A laboratory indicator that suggests the presence of nephrotic syndrome is</p> <ul style="list-style-type: none"> <li>a) *the amount of proteinuria and the level of serum cholesterol</li> <li>b) blood creatinine level</li> <li>c) glomerular filtration rate</li> <li>d) blood hemoglobin level</li> </ul> <p>56. Daily proteinuria of more than 3.5 g, the presence of Bence-Jones protein, hyperproteinemia are characteristic of</p> <ul style="list-style-type: none"> <li>a) *multiple myeloma</li> <li>b) nephrotic syndrome</li> <li>c) Waldenstrom's macroglobulinemia</li> <li>d) benign monoclonal gammopathy</li> </ul> <p>57. Enlarged lymph nodes, enlarged spleen and leukocytosis with lymphocytosis are characteristic of</p> <ul style="list-style-type: none"> <li>a) *chronic lymphocytic leukemia</li> <li>b) chronic myeloid leukemia</li> <li>c) lymphogranulomatosis</li> <li>d) acute lymphoblastic leukemia</li> </ul> <p>58. The criterion for complete clinical and hematological remission in acute leukemia is the number of blasts in the sternal puncture of less than</p> <ul style="list-style-type: none"> <li>a) *5%</li> <li>b) 1%</li> <li>c) 7%</li> </ul> |
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|  |  | <p>d) 10%</p> <p>59. Iron deficiency anemia is characterized by</p> <p>a) *hypochromia, microcytosis, increased iron-binding capacity of serum</p> <p>b) hypochromia, microcytosis, decreased iron-binding capacity of serum</p> <p>c) hypochromia, microcytosis, sideroblasts in sternal punctate</p> <p>d) microcytosis, target erythrocytes</p> <p>60. The appearance of Bence Jones protein in urine is characteristic of</p> <p>a) *myeloma nephropathy</p> <p>b) lupus nephritis</p> <p>c) dysmetabolic nephropathy</p> <p>d) drug-induced nephropathy</p> <p>61. Radiographic signs of rheumatoid arthritis include:</p> <p>a) *erosions of the articular surface</p> <p>b) osteophytosis</p> <p>c) intervertebral ossifications</p> <p>d) unilateral sacroiliitis</p> <p>62. Pathogenetic therapy of uremic anemia includes the appointment of</p> <p>a) *erythropoietin preparations</p> <p>b) intravenous iron preparations</p> <p>c) folic acid</p> <p>d) cyanocobalamin</p> <p>63. A clinical sign characteristic of patients with bronchial obstruction syndrome is</p> <p>a) *exhalation disorder</p> <p>b) acrocyanosis</p> <p>c) respiratory failure</p> <p>d) hyperthermia</p> <p>64. The most likely diagnosis for a 35-year-old woman who has been taking oral contraceptives for over a year and complains of shortness of breath, low-grade fever, blood-streaked sputum when coughing, and pain in the left side of the chest is</p> <p>a) *pulmonary embolism</p> <p>b) spontaneous pneumothorax</p> <p>c) acute coronary syndrome</p> <p>d) bronchiectasis</p> <p>65. The patient has symmetrical chest movements, a box-like sound on percussion, and weakened vesicular breathing with a prolonged expiration. The most likely diagnosis</p> <p>a) *pulmonary emphysema</p> <p>b) pleurisy</p> <p>c) hydropneumothorax</p> <p>d) pneumonia</p> <p>66. Signs of unstable angina include:</p> <p>a) *changes in the duration and intensity of pain attacks</p> |
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|  | <p>b) diffuse cyanosis</p> <p>c) reduction of blood pressure without antihypertensive therapy</p> <p>d) the appearance of a pathological Q wave on the ECG</p> <p>67. Contraindications for the administration of antiplatelet agents are</p> <p>a) *uncontrolled hypertension</p> <p>b) angina pectoris</p> <p>c) unstable angina</p> <p>d) acute myocardial infarction</p> <p>68. The main radiographic sign of pneumonia is</p> <p>a) *pulmonary infiltrate</p> <p>b) atelectasis</p> <p>c) increased airiness of the lungs</p> <p>d) cellularity of the pulmonary pattern</p> <p>69. In adults, the most common cause of pyloric stenosis is</p> <p>a) *peptic ulcer</p> <p>b) stomach cancer</p> <p>c) hypertrophy of the pyloric muscles</p> <p>d) prolapse of the mucous membrane through the pyloric canal</p> <p>70. A reliable clinical sign of pyloric stenosis is</p> <p>a) *vomiting food eaten the day before</p> <p>b) vomiting bile</p> <p>c) bloating</p> <p>d) diarrhea</p> <p>71. The most common cause of death in patients with nephrotic syndrome and preserved renal function is</p> <p>a) *thrombosis and embolism</p> <p>b) hypovolemic shock</p> <p>c) steroid diabetes mellitus</p> <p>d) drug-induced immunosuppression</p> <p>72. Complaints of weakness and pain in the spine, blood hemoglobin 65 g / l, proteinuria 22 g per day, serum albumin level 43 g / l and blood creatinine 280 <math>\mu\text{mol} / \text{l}</math> are most typical for</p> <p>a) *multiple myeloma</p> <p>b) CGN in the uremia stage</p> <p>c) secondary amyloidosis with kidney damage</p> <p>d) chronic pyelonephritis</p> <p>73. The etiologic factor of uncomplicated urinary tract infections is most often</p> <p>a) *Escherichia coli</p> <p>b) saprophytic staphylococci</p> <p>c) Pseudomonas aeruginosa</p> <p>d) Proteus</p> <p>74. Chronic kidney disease stage 5 is recorded at a glomerular filtration rate</p> <p>a) *less than 15 ml/min</p> <p>b) 89-60 ml/min</p> |
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|  |  | <p>c) 59-30 ml/min<br/>d) 29-15 ml/min</p> <p>75. Bence Jones proteinuria is characteristic of<br/>a) *multiple myeloma<br/>b) chronic glomerulonephritis, nephrotic form<br/>c) rapidly progressive glomerulonephritis<br/>d) hypernephromas</p> <p>76. The main cause of death in patients undergoing hemodialysis treatment is<br/>a) *cardiovascular disease<br/>b) acute viral hepatitis<br/>c) bacterial pneumonia<br/>d) dialysis amyloidosis</p> <p>77. The combination of early involvement of the metatarsophalangeal joint of the big toe, during the period of exacerbation, sharp redness, defiguration of the joints, fever, nephropathy, attacks of renal colic, subcutaneous nodules on the auricles and elbows are characteristic of<br/>a) *gout<br/>b) rheumatoid arthritis<br/>c) rheumatic polyarthritis<br/>d) deforming osteoarthritis</p> <p>78. Tophi are<br/>a) *deposition of urates in tissues<br/>b) cholesterol deposition in tissues<br/>c) osteophytes<br/>d) compaction of subcutaneous tissue</p> <p>79. Frequent clinical symptoms of anemia, regardless of genesis, include<br/>a) *shortness of breath, pallor<br/>b) bleeding, bone pain<br/>c) enlargement of the spleen and lymph nodes<br/>d) neurological disorders</p> <p>80. The combination of anemia and arterial hypertension is observed in<br/>a) *chronic renal failure<br/>b) Itsenko-Cushing syndrome<br/>c) acromegaly<br/>d) B12-deficiency anemia</p> <p>81. If arterial hypertension is diagnosed for the first time at 150/110 mm Hg and proteinuria of 0.8 g/l is detected in a general urine analysis, the examination plan should include<br/>a) *daily proteinuria and blood creatinine test<br/>b) bicycle ergometry<br/>c) urine vanillylmandelic acid test<br/>d) determination of thyroid hormones</p> <p>82. Further tactics for treating infective endocarditis after normalization of body temperature, but with increasing symptoms of severe heart failure is</p> |
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|  |  | <p>a) *referral for surgical treatment</p> <p>b) change of antibiotic</p> <p>c) plasmapheresis procedure</p> <p>d) increasing the dose of diuretics and adding beta-blockers</p> <p>83. The "major" diagnostic DUKE criteria for infective endocarditis are</p> <p>a) *vegetations/destruction of heart valves and positive blood culture</p> <p>b) heart defect and glomerulonephritis</p> <p>c) intravenous drug use and febrile fever</p> <p>d) febrile fever and heart defect</p> <p>84. Cytolytic syndrome in chronic hepatitis is the main indicator</p> <p>a) *activity of the pathological process</p> <p>b) mesenchymal inflammation</p> <p>c) hepatocellular insufficiency</p> <p>d) portohepatic insufficiency</p> <p>85. The main difference between bronchial asthma and COPD is</p> <p>a) *reversibility of bronchial obstruction</p> <p>b) response to treatment with inhaled glucocorticosteroids</p> <p>c) severity of broncho-obstructive disorders</p> <p>d) response to treatment with prolonged anticholinergics</p> <p>86. For posterior diaphragmatic localization of acute transmural myocardial infarction, the most typical changes are observed in the following leads on the ECG</p> <p>a) *II, III, aVF</p> <p>b) I, II, aVL</p> <p>c) I, V5 and V6</p> <p>d) AVL, V1 through V4</p> <p>87. In the event of an acute attack of pain in the epigastric region and behind the sternum in middle-aged men, the examination should begin with</p> <p>a) *ECG</p> <p>b) gastric intubation</p> <p>c) fluoroscopy of the gastrointestinal tract</p> <p>d) gastroduodenoscopy</p> <p>88. The most correct tactic for acute anterior transmural myocardial infarction complicated by the development of complete atrioventricular block with a ventricular rhythm rate of 24 per minute is</p> <p>a) *installation of an endocardial electrode and temporary cardiac pacing</p> <p>b) administration of adrenergic agents</p> <p>c) administration of atropine</p> <p>d) Lasix administration</p> <p>89. A regular ventricular rhythm with a heart rate of 40 bpm, a regular atrial rhythm with a heart rate of 88 bpm, and a ventricular rhythm independent of the atrial rhythm are signs</p> <p>a) *third-degree atrioventricular block</p> <p>b) first-degree atrioventricular block</p> |
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|  |  | <p>c) second-degree atrioventricular block type Mobitz I</p> <p>d) second-degree atrioventricular block type Mobitz II</p> <p>90. The syndrome that distinguishes liver cirrhosis from chronic hepatitis is</p> <p>a) *portal hypertension</p> <p>b) hepatomegaly</p> <p>c) extrahepatic signs</p> <p>d) cytolytic syndrome</p> <p>91. The indication for the appointment of antibacterial therapy for COPD is</p> <p>a) *fever and purulent sputum</p> <p>b) increased shortness of breath</p> <p>c) an increase in the number of dry wheezes during auscultation</p> <p>d) sputum lymphocytosis</p> <p>92. In the treatment of a patient with pneumonia, two antibiotics are necessary in case</p> <p>a) *severe pneumonia</p> <p>b) the inability to ensure a sufficient frequency of administration of one of the drugs</p> <p>c) protracted course of pneumonia</p> <p>d) combination of bacterial and viral infection</p> <p>93. The main diagnostic criterion for respiratory failure is a decrease</p> <p>a) *oxygen saturation</p> <p>b) carbon dioxide saturation</p> <p>c) peak expiratory flow rate</p> <p>d) hemoglobin</p> <p>94. To determine cardiovascular risk for primary prevention according to the recommendations of the European Society of Cardiology, the index is used</p> <p>a) *SCORE</p> <p>b) Framingham</p> <p>c) AHA/ACC</p> <p>d) NYHA</p> <p>95. Patients with diabetes mellitus and diabetic nephropathy in the absence of known cardiovascular disease are considered to be at risk</p> <p>a) *very high</p> <p>b) high</p> <p>c) moderate</p> <p>d) low</p> <p>96. The drugs of choice for the treatment of arterial hypertension in asymptomatic atherosclerosis of the carotid arteries are</p> <p>a) *ACE inhibitors</p> <p>b) diuretics</p> <p>c) beta-blockers</p> <p>d) alpha blockers</p> |
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|  |  | <p>97. The drugs of choice for the treatment of isolated systolic arterial hypertension in the elderly are</p> <p>a) *diuretics and calcium antagonists</p> <p>b) ACE inhibitors and beta-blockers</p> <p>c) angiotensin 2 receptor antagonists and centrally acting drugs</p> <p>d) beta-blockers and centrally acting drugs</p> <p>98. To control the synthesis of uric acid in gout, use</p> <p>a) *allopurinol</p> <p>b) diclofenac</p> <p>c) hydrochlorothiazide</p> <p>d) cyston</p> <p>99. In uncomplicated hypertensive crisis, an angiotensin-converting enzyme inhibitor is recommended for emergency therapy.</p> <p>a) *captopril</p> <p>b) perindopril</p> <p>c) fosinopril</p> <p>d) lisinopril</p> <p>100. The criterion for hospitalization of a patient with pneumonia is</p> <p>a) *unstable hemodynamics</p> <p>b) detected leukocytosis more than 10 g/l</p> <p>c) upper lobe localization of the lesion</p> <p>d) febrile fever for 3 days</p> |
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**Assessment criteria:**

"**Very good**" – over 80% correct answers of questions of every level

"**Good**" – 70-79% correct answers of questions of every level

"**Satisfactory**" – 55-69% correct answers of questions of every level

"**Unsatisfactory**" – less than 55% correct answers of questions of every level

Standardized case studies and checklists for the **B1.C.30 Faculty therapy** course

Case Study No. 1

|   | Code     | Competence description / name of labor function / name of work activity / text                                                                                                                                                                                                                |
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| S | 31.05.01 | General Medicine (English-language program)                                                                                                                                                                                                                                                   |
| C | GPC-4    | Able to use medical devices included in the healthcare guidelines, as well as perform medical examination to make a diagnosis                                                                                                                                                                 |
| C | GPC-7    | Able to prescribe treatment and monitor its efficacy and safety                                                                                                                                                                                                                               |
| C | PC-3     | Ability and readiness to collect and analyze complaints that a patient presents with, anamnestic data, examination results, results of laboratory and instrumental tests, biopsy and other studies in order to identify patient's condition or establish the presence or absence of a disease |
| C | PC-4     | Ability and readiness to identify main pathological conditions, syndromes, symptoms of diseases, specific diseases of a patient in accordance with International Statistical Classification of Diseases and Related Health Problems                                                           |
| F | A/02.7   | Examination of the patient in order to make a diagnosis                                                                                                                                                                                                                                       |

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| I |   | <p><b>READ THE PROVIDED CASE DESCRIPTION AND GIVE DETAILED ANSWERS TO THE QUESTIONS</b></p> <p>Patient N., 65, complains of shortness of breath when walking and climbing stairs, palpitations, general weakness, poor appetite, numbness in the extremities, and an unsteady gait. She considers herself ill for about 6 months; her medical history includes atrophic gastritis. Objectively: pale skin and mucous membranes with a jaundice tint, icteric sclera. Muffled heart sounds, a blowing systolic murmur at the apex. Pulse is 88 beats per minute. Blood pressure is 140 and 80 mmHg. The tongue is crimson with smoothed papillae, the liver is at the costal margin. Neurological examination revealed impaired deep sensitivity in the distal extremities. Blood test: hemoglobin 73 g/l, erythrocytes 2.03 T/l, platelets 45 g/l, leukocytes 4.7 g/l, leukocyte formula: band neutrophils 6%, segmented neutrophils 68%, lymphocytes 22%, monocytes 4%, ESR 31 mm per hour, erythrocyte indices: MCV 112 fl, MCH 38 pg/er, MCHC 41 g/dl. Serum iron 25.8 µmol/l, total bilirubin 25 µmol/l. In the blood smear: macrocytosis, anisocytosis, poikilocytosis, polysegmentation of neutrophil nuclei, Jolly bodies.</p> |
| Q | 1 | Question:<br>Formulate a tentative diagnosis                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Q | 2 | Question:<br>Please evaluate the laboratory parameters. How can the increased bilirubin be explained?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Q | 3 | Question:<br>What tests can be used to diagnose B12 deficiency?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Q | 4 | Question:<br>How can one explain the patient's complaints of numbness in the limbs and an unsteady gait?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Q | 5 | Question:<br>Describe the treatment tactics.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

#### Case Study No.1 Checklist

|   | Code     | Competence description / name of labor function / name of work activity / text                                                                                                                                                                                                                |
|---|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| S | 31.05.01 | General Medicine (English-language program)                                                                                                                                                                                                                                                   |
| C | GPC-4    | Able to use medical devices included in the healthcare guidelines, as well as perform medical examination to make a diagnosis                                                                                                                                                                 |
| C | GPC-7    | Able to prescribe treatment and monitor its efficacy and safety                                                                                                                                                                                                                               |
| C | PC-3     | Ability and readiness to collect and analyze complaints that a patient presents with, anamnestic data, examination results, results of laboratory and instrumental tests, biopsy and other studies in order to identify patient's condition or establish the presence or absence of a disease |
| C | PC-4     | Ability and readiness to identify main pathological conditions, syndromes, symptoms of diseases, specific diseases of a patient in accordance with International Statistical Classification of Diseases and Related Health Problems                                                           |
| F | A/02.7   | Examination of the patient in order to make a diagnosis                                                                                                                                                                                                                                       |

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|----|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| I  |                   | <p><b>READ THE PROVIDED CASE DESCRIPTION AND GIVE DETAILED ANSWERS TO THE QUESTIONS</b></p> <p>Patient N., 65, complains of shortness of breath when walking and climbing stairs, palpitations, general weakness, poor appetite, numbness in the extremities, and an unsteady gait. She considers herself ill for about 6 months; her medical history includes atrophic gastritis. Objectively: pale skin and mucous membranes with a jaundice tint, icteric sclera. Muffled heart sounds, a blowing systolic murmur at the apex. Pulse is 88 beats per minute. Blood pressure is 140 and 80 mmHg. The tongue is crimson with smoothed papillae, the liver is at the costal margin. Neurological examination revealed impaired deep sensitivity in the distal extremities. Blood test: hemoglobin 73 g/l, erythrocytes 2.03 T/l, platelets 45 g/l, leukocytes 4.7 g/l, leukocyte formula: band neutrophils 6%, segmented neutrophils 68%, lymphocytes 22%, monocytes 4%, ESR 31 mm per hour, erythrocyte indices: MCV 112 fl, MCH 38 pg/er, MCHC 41 g/dl. Serum iron 25.8 µmol/l, total bilirubin 25 µmol/l. In the blood smear: macrocytosis, anisocytosis, poikilocytosis, polysegmentation of neutrophil nuclei, Jolly bodies.</p> |
| Q  | 1                 | <p>Question:</p> <p>Formulate a tentative diagnosis</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| A  |                   | <p>Correct answer:</p> <p>Vitamin B12 deficiency anemia, funicular myelosis.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| R2 | Very good         | Formulates a diagnosis correctly and completely, and can indicate signs of damage to the nervous system instead of the term “funicular myelosis.”                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| R1 | Good/Satisfactory | <p>For a “good” rating: formulates the diagnosis correctly, does not indicate damage to the nervous system;</p> <p>for a “satisfactory” rating: does not formulate a diagnosis completely, indicates anemia or anemic syndrome, but cannot name the cause of the anemia.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| R0 | Fail              | Cannot formulate a diagnosis                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Q  | 2                 | <p>Question:</p> <p>Please evaluate the laboratory parameters. How can the increased bilirubin be explained?</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| A  |                   | <p>Correct answer:</p> <p>The patient has hyperchromic (MCH 38 pg/er, MCHC 41 g/dL) macrocytic (MCV 112 fl) anemia (decrease in hemoglobin to 73 g/L and red blood cell count to 2.03 T/L) combined with leukopenia and thrombocytopenia (pancytopenia). A decrease in hemoglobin level to 73 g/L indicates moderate anemia. There is no iron deficiency (serum iron 25.8 µmol/L). Total bilirubin level is slightly elevated to 25 µmol/L. Increased bilirubin in vitamin B12 deficiency is explained by ineffective erythropoiesis, when a large number of red blood cell precursors are destroyed already in the bone marrow. Intensive destruction of erythroblasts leads to accumulation of unconjugated bilirubin and LDH1 in plasma.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| R2 | Very good         | Lists in full the laboratory criteria for vitamin B12 deficiency anemia identified in the patient, correctly interprets laboratory data, and knows the normal values of laboratory parameters.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

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|----|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| R1 | Good/Satisfactory | For a “good” rating: does not fully list the laboratory criteria for vitamin B12 deficiency anemia, interprets laboratory data with 1-2 errors, knows the normal values of laboratory parameters;<br><br>for a “satisfactory” rating: can evaluate 2-3 laboratory parameters, does not know the reference values of most laboratory parameters.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| R0 | Fail              | Cannot characterize anemia using laboratory criteria, cannot interpret laboratory data.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Q  | 3                 | Question:<br>What tests can be used to diagnose B12 deficiency?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| A  |                   | Correct answer:<br><br>A method for confirming vitamin B12 deficiency is the determination of vitamin B12 in the blood serum. Normal values are 100-250 pg/ml; low values strongly suggest B12 deficiency. Elevated levels of methylmalonic acid (normal 70-279 nmol/L) and homocysteine (normal 5-15 µmol/L) are also detected.<br><br>Additional confirmation of the correct diagnosis is a reticulocyte crisis on the 7-9th day after the first injection of cyanocobalamin.                                                                                                                                                                                                                                                                                                                                                   |
| R2 | Very good         | Knows the types of studies and reference values; may call sternal puncture with detection of megaloblastic type of hematopoiesis a confirmation method                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| R1 | Good/Satisfactory | For a “good” rating: knows methods for diagnosing vitamin B12 deficiency anemia, makes mistakes in reference values;<br><br>for the “satisfactory” rating: indicates the need for laboratory testing of vitamin B12, does not know the reference values and other methods to confirm the diagnosis.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| R0 | Fail              | Does not know any type of additional laboratory or instrumental tests indicated for the patient                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Q  | 4                 | Question:<br>How can one explain the patient’s complaints of numbness in the limbs and an unsteady gait?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| A  |                   | Correct answer:<br><br>The patient's complaints of numbness in the extremities and an unsteady gait, combined with neurological examination findings revealing impaired deep sensation in the distal extremities, are a manifestation of "funicular myelosis"—damage (demyelination) of the posterior and lateral columns of the spinal cord caused by vitamin B12 deficiency. Cyanocobalamin is a coenzyme involved in fatty acid metabolism (the conversion of methylmalonyl-CoA to succinyl-CoA; this reaction is necessary for myelin metabolism in the nervous system). Vitamin B12 deficiency leads to the accumulation of propionic and methylmalonic acids, which are toxic to the nervous system. Therefore, cyanocobalamin deficiency, along with megaloblastic anemia, is accompanied by damage to the nervous system. |
| R2 | Very good         | Knows the pathogenesis and clinical manifestations of damage to the nervous system in vitamin B12 deficiency anemia                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

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|----|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| R1 | Good/Satisfactory | For a “good” rating: knows the clinical manifestations of damage to the nervous system in vitamin B12-deficiency anemia, cannot explain the cause of their occurrence;<br><br>for a "satisfactory" rating: indicates the possibility of damage to the nervous system with vitamin B12-deficiency anemia, does not know the causes, is confused by the symptoms of "funicular myelosis"                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| R0 | Fail              | Does not know the causes and clinical manifestations of damage to the nervous system in vitamin B12 deficiency anemia                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Q  | 5                 | Question:<br>Describe the treatment tactics.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| A  |                   | Correct answer:<br><br>A consultation with a hematologist is recommended.<br>Treatment plan: The patient must be treated and monitored by a hematologist. Vitamin B12 replacement therapy is administered in the form of intramuscular cyanocobalamin injections. For therapeutic purposes, vitamin B12 is administered intramuscularly at 1000 mcg daily until the blood count is normalized, and then this dose is prescribed once a month for the long term (lifetime). Other treatment regimens exist. For example, 1000 mcg daily until hemoglobin levels are normalized, then 1000 mcg once a week for 1-2 months, then 1000 mcg once a month for the long term. If there are no signs of nervous system damage, the cyanocobalamin dosage is 500 mcg.<br>It is recommended to consume animal products (liver, kidneys, eggs, milk); avoid alcohol consumption |
| R2 | Very good         | Knows treatment tactics in accordance with clinical recommendations and is familiar with treatment regimens                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| R1 | Good/Satisfactory | For a “good” rating: prescribes replacement therapy with cyanocobalamin, makes mistakes in treatment regimens and treatment tactics;<br><br>for a “satisfactory” rating: knows about the need for replacement therapy with cyanocobalamin (vitamin B12), does not know the treatment regimens and treatment tactics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| R0 | Fail              | Does not know the drugs used for treatment and cannot prescribe treatment in accordance with clinical guidelines                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

#### Case Study No. 2

|   | Code     | Competence description / name of labor function / name of work activity / text                                                                                                                                                                                                                |
|---|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| S | 31.05.01 | General Medicine (English-language program)                                                                                                                                                                                                                                                   |
| C | GPC-4    | Able to use medical devices included in the healthcare guidelines, as well as perform medical examination to make a diagnosis                                                                                                                                                                 |
| C | GPC-7    | Able to prescribe treatment and monitor its efficacy and safety                                                                                                                                                                                                                               |
| C | PC-3     | Ability and readiness to collect and analyze complaints that a patient presents with, anamnestic data, examination results, results of laboratory and instrumental tests, biopsy and other studies in order to identify patient's condition or establish the presence or absence of a disease |
| C | PC-4     | Ability and readiness to identify main pathological conditions, syndromes, symptoms of diseases, specific diseases of a patient in accordance with                                                                                                                                            |

|   |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|---|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|   |        | International Statistical Classification of Diseases and Related Health Problems                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| F | A/02.7 | Examination of the patient in order to make a diagnosis                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| I |        | <p><b>READ THE PROVIDED CASE DESCRIPTION AND GIVE DETAILED ANSWERS TO THE QUESTIONS</b></p> <p>Patient I., 31, consulted a doctor about general weakness, fatigue, dizziness when changing position, and shortness of breath when walking. Additional complaints included dry skin, brittle and falling hair, and urinary incontinence when coughing.</p> <p>History: adheres to a vegetarian diet, has not eaten meat for the last 10 years; menstrual cycle is 26 days, menstrual flow lasts 7 days, always heavy, with clots.</p> <p>Objectively: pale skin and visible mucous membranes. Height 165 cm, weight 55 kg. Heart sounds are rhythmic, muffled, with a blowing systolic murmur at the apex. Pulse 87 bpm, blood pressure 106 and 70 mmHg. Otherwise: unremarkable.</p> <p>Blood test: hemoglobin 82 g/l, erythrocytes 3.5 T/l, MCV 74 fl, MCH 21 pg/er, MCHC 27 g/dl, serum iron 5.1 <math>\mu\text{mol/l}</math>, TIBC 92 <math>\mu\text{mol/l}</math>, transferrin saturation coefficient with iron 15%, serum ferritin 7.4 <math>\mu\text{g/l}</math>.</p> |
| Q | 1      | Question:<br>Specify the main clinical and laboratory syndrome, how does it manifest itself?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Q | 2      | Question:<br>Formulate a preliminary diagnosis                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Q | 3      | Question:<br>Assess anemia based on laboratory parameters and characterize the patient's iron metabolism parameters                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Q | 4      | Question:<br>What types of anemia should be used for differential diagnosis?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Q | 5      | Question:<br>Prescribe treatment in accordance with clinical guidelines for the treatment of patients with this pathology                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

Case Study No.2 Checklist

|   | Code     | Competence description / name of labor function / name of work activity / text                                                                                                                                                                                                                |
|---|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| S | 31.05.01 | General Medicine (English-language program)                                                                                                                                                                                                                                                   |
| C | GPC-4    | Able to use medical devices included in the healthcare guidelines, as well as perform medical examination to make a diagnosis                                                                                                                                                                 |
| C | GPC-7    | Able to prescribe treatment and monitor its efficacy and safety                                                                                                                                                                                                                               |
| C | PC-3     | Ability and readiness to collect and analyze complaints that a patient presents with, anamnestic data, examination results, results of laboratory and instrumental tests, biopsy and other studies in order to identify patient's condition or establish the presence or absence of a disease |
| C | PC-4     | Ability and readiness to identify main pathological conditions, syndromes, symptoms of diseases, specific diseases of a patient in accordance with International Statistical Classification of Diseases and Related Health Problems                                                           |
| F | A/02.7   | Examination of the patient in order to make a diagnosis                                                                                                                                                                                                                                       |

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|----|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| I  |                   | <p><b>READ THE PROVIDED CASE DESCRIPTION AND GIVE DETAILED ANSWERS TO THE QUESTIONS</b></p> <p>Patient I., 31, consulted a doctor about general weakness, fatigue, dizziness when changing position, and shortness of breath when walking. Additional complaints included dry skin, brittle and falling hair, and urinary incontinence when coughing.</p> <p>History: adheres to a vegetarian diet, has not eaten meat for the last 10 years; menstrual cycle is 26 days, menstrual flow lasts 7 days, always heavy, with clots.</p> <p>Objectively: pale skin and visible mucous membranes. Height 165 cm, weight 55 kg. Heart sounds are rhythmic, muffled, with a blowing systolic murmur at the apex. Pulse 87 bpm, blood pressure 106 and 70 mmHg. Otherwise: unremarkable.</p> <p>Blood test: hemoglobin 82 g/l, erythrocytes 3.5 T/l, MCV 74 fl, MCH 21 pg/er, MCHC 27 g/dl, serum iron 5.1 µmol/l, TIBC 92 µmol/l, transferrin saturation coefficient with iron 15%, serum ferritin 7.4 µg/l.</p> |
| Q  | 1                 | <p>Question:</p> <p>Specify the main clinical and laboratory syndrome, how does it manifest itself?</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| A  |                   | <p>Correct answer:</p> <p>The patient exhibits symptoms of anemia syndrome: weakness, increased fatigue, dizziness when changing position, muffled heart sounds, a blowing systolic murmur at the apex, and shortness of breath. Sideropenic syndrome (tissue iron deficiency) manifests as dry skin, brittle and scaly hair, and urinary incontinence when coughing</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| R2 | Very good         | Correctly names syndromes, fully indicates their clinical manifestations, and always notes the combination of general anemic syndrome with sideropenia syndrome                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| R1 | Good/Satisfactory | <p>For a good rating: knows general anemic and sideropenic syndromes, does not fully list clinical manifestations; does not name all criteria using correct terminology;</p> <p>for a satisfactory rating: correctly names anemic syndrome, does not know its clinical manifestations, does not know the clinical manifestations of sideropenia syndrome</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| R0 | Fail              | Doesn't know main syndromes, does not know their clinical signs and does not have special terminology                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Q  | 2                 | <p>Question:</p> <p>Formulate a preliminary diagnosis</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| A  |                   | <p>Correct answer:</p> <p>Moderate iron deficiency anemia with hypermenorrhea</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| R2 | Very good         | Formulates a diagnosis correctly and completely, indicating the severity; may not include hypermenorrhea (menorrhagia) in the diagnosis                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| R1 | Good/Satisfactory | <p>For a “good” rating: formulates the diagnosis correctly, but does not indicate the severity correctly;</p> <p>for a “satisfactory” rating: formulates a diagnosis of “anemia”, does not know the form of the disease and does not indicate the severity</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| R0 | Fail              | Cannot formulate a diagnosis                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

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| Q  | 3                 | <p>Question:</p> <p>Assess anemia based on laboratory parameters and characterize the patient's iron metabolism parameters</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| A  |                   | <p>Correct answer:</p> <p>Hypochromic (MCH 21 pg/er, MCHC 27 g/dl) microcytic (MCV 74 fl) anemia.</p> <p>The patient has a decreased hemoglobin level to 82 g/L, indicating moderate anemia, and a decrease in the red blood cell count to 3.5 T/L. Iron deficiency is confirmed by changes in iron metabolism parameters: decreased serum iron to 5.1 <math>\mu\text{mol/L}</math>, ferritin (7.4 <math>\mu\text{g/L}</math>), transferrin saturation coefficient (15%), and an increase in total iron-binding capacity of serum to 92 <math>\mu\text{mol/L}</math></p>                                                                                                                                                                              |
| R2 | Very good         | Lists in full the laboratory criteria for anemia and iron deficiency identified in the patient, correctly interprets laboratory data, and knows the normal values of laboratory parameters                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| R1 | Good/Satisfactory | <p>For a “good” rating: does not fully list the laboratory criteria for anemia and iron deficiency, interprets laboratory data with 1-2 errors, knows the normal values of laboratory parameters;</p> <p>for a “satisfactory” rating: can evaluate 2-3 laboratory parameters, does not know the reference values for hemoglobin and red blood cells</p>                                                                                                                                                                                                                                                                                                                                                                                               |
| R0 | Fail              | Cannot characterize anemia using laboratory criteria, does not know iron metabolism indicators                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Q  | 4                 | <p>Question:</p> <p>What types of anemia should be used for differential diagnosis?</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| A  |                   | <p>Correct answer:</p> <p>Red blood cell hypochromia most often occurs in iron deficiency anemia (IDA). Other causes include thalassemia and anemia of chronic disease (ACD).</p> <p>Thalassemia – target-shaped red blood cells in the blood, normal or elevated iron levels in the blood, unconjugated hyperbilirubinemia, reticulocytosis, splenomegaly (not always), icterus of the skin and sclera of the eyes, darkening of the urine.</p> <p>Anemia of chronic disease – in this case, sideropenic syndrome is not observed: changes in the skin and its appendages (dryness, hair loss), changes in the mucous membranes, taste perversion, laboratory parameters: normal iron-binding capacity of the serum, elevated C-reactive protein</p> |
| R2 | Very good         | Can conduct differential diagnosis, it is permissible to conduct differential diagnosis with B-12 deficiency anemia, aplastic, hemolytic anemia                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| R1 | Good/Satisfactory | <p>For a “good” rating: conducts a differential diagnosis with the 2 most common anemias, correctly constructs a diagnostic search, is not accurate in characterizing the clinical and laboratory manifestations of various anemias;</p> <p>for a “satisfactory” rating: names the anemias with which IDA can be differentiated, but cannot make a differential diagnosis</p>                                                                                                                                                                                                                                                                                                                                                                         |

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| R0 | Fail              | Does not know the nosology for differential diagnosis, cannot carry out differential diagnosis                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Q  | 5                 | Question:<br>Prescribe treatment in accordance with clinical guidelines for the treatment of patients with this pathology                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| A  |                   | Correct answer:<br><br>A diet rich in iron (red meat). It's important to remember that iron deficiency anemia cannot be cured without iron supplements.<br>Treatment with oral iron-containing drugs (bivalent and trivalent): Stage 1: elimination of iron deficiency and anemia, Stage 2: replenishment of iron stores, Stage 3: anti-relapse therapy.<br>Treatment of anemia: iron preparations, such as iron polymaltose, chewable tablets 100-150 mg per day orally with food until hemoglobin levels are normalized (1-3 months).<br>Restoration of iron stores: daily doses of iron preparations 50-100 mg daily orally until ferritin levels are normalized (on average 3-4 months).<br>Preventive treatment: 7-10 days after menstruation in therapeutic doses.<br>Consultation and observation with a gynecologist is required |
| R2 | Very good         | Prescribes treatment in accordance with clinical recommendations, knows the forms and dosages of drugs, prescribes iron for therapeutic and prophylactic purposes, and emphasizes the importance of diet                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| R1 | Good/Satisfactory | For a "good" rating: knows the different forms of iron supplements, knows the dosages, indicates the need for oral iron supplements, does not prescribe treatment to restore iron stores, does not prescribe preventive treatment;<br><br>for a "satisfactory" rating: uses iron supplements for treatment, does not know the prescription regimen or dosage, makes mistakes in treatment tactics                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| R0 | Fail              | Unable to prescribe treatment in accordance with clinical guidelines, does not know the iron therapy regimen, and does not know the dosage forms and dosages of iron preparations                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

### Case Study No. 3

|   | Code     | Competence description / name of labor function / name of work activity / text                                                                                                                                                                                                                |
|---|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| S | 31.05.01 | General Medicine (English-language program)                                                                                                                                                                                                                                                   |
| C | GPC-4    | Able to use medical devices included in the healthcare guidelines, as well as perform medical examination to make a diagnosis                                                                                                                                                                 |
| C | GPC-7    | Able to prescribe treatment and monitor its efficacy and safety                                                                                                                                                                                                                               |
| C | PC-3     | Ability and readiness to collect and analyze complaints that a patient presents with, anamnestic data, examination results, results of laboratory and instrumental tests, biopsy and other studies in order to identify patient's condition or establish the presence or absence of a disease |
| C | PC-4     | Ability and readiness to identify main pathological conditions, syndromes, symptoms of diseases, specific diseases of a patient in accordance with International Statistical Classification of Diseases and Related Health Problems                                                           |
| F | A/02.7   | Examination of the patient in order to make a diagnosis                                                                                                                                                                                                                                       |

|   |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|---|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| I |     | <p><b>READ THE PROVIDED CASE DESCRIPTION AND GIVE DETAILED ANSWERS TO THE QUESTIONS</b></p> <p>Patient M., 24, presented to his local general practitioner complaining of headache, general weakness and fatigue, and loss of appetite. His medical history included facial swelling after an acute respiratory infection at age 14, a low-grade fever that persisted for 3-4 months, and changes in his urine (protein and red blood cells). He had been treated by a pediatrician for nephritis for about a year and received prednisolone. He has not seen a doctor since then and has not received any treatment.</p> <p>On examination: normal build, pale, dry skin, facial puffiness. Vesicular breathing, no wheezing. Blood pressure is 145 and 92 mmHg. The abdomen is soft and non-tender to palpation in all areas. The liver and spleen are not enlarged. Percussion of the lumbar region is negative on both sides. The patient reports a decrease in urine output to 700 ml per day.</p> <p>Complete blood count: erythrocytes <math>3.2 \times 10^{12}/l</math>, hemoglobin 105 g/l, leukocytes <math>5.2 \times 10^9/l</math>, band neutrophils 4%, segmented neutrophils 65%, eosinophils 3%, monocytes 5%, lymphocytes 23%, ESR 12 mm/h.</p> <p>Blood biochemistry: total cholesterol 5.0 mmol/l, blood creatinine 170 <math>\mu\text{mol}/l</math>, blood urea 11 mmol/l.</p> <p>Urinalysis: specific gravity 1021, protein 0.32 g/L, leukocytes 2-4 per field of view, erythrocytes 7-10 per field of view, hyaline casts 2-3 per field of view. Albuminuria 250 mg/day. SCF (according to the CKD-EPI formula) 55 ml/min.</p> |
|   | Q 1 | Question:<br>Suggest the most likely diagnosis                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|   | Q 2 | Question:<br>Justify the proposed diagnosis.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|   | Q 3 | Question:<br>Please indicate additional tests to clarify the diagnosis                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|   | Q 4 | Question:<br>What is the further treatment strategy for the patient?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|   | Q 5 | Question:<br>Which medication would you recommend for nephroprotective therapy?<br>Justify your choice                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

Case Study No.3 Checklist

|   | Code     | Competence description / name of labor function / name of work activity / text                                                                                                                                                                                                                |
|---|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| S | 31.05.01 | General Medicine (English-language program)                                                                                                                                                                                                                                                   |
| C | GPC-4    | Able to use medical devices included in the healthcare guidelines, as well as perform medical examination to make a diagnosis                                                                                                                                                                 |
| C | GPC-7    | Able to prescribe treatment and monitor its efficacy and safety                                                                                                                                                                                                                               |
| C | PC-3     | Ability and readiness to collect and analyze complaints that a patient presents with, anamnestic data, examination results, results of laboratory and instrumental tests, biopsy and other studies in order to identify patient's condition or establish the presence or absence of a disease |
| C | PC-4     | Ability and readiness to identify main pathological conditions, syndromes, symptoms of diseases, specific diseases of a patient in accordance with International Statistical Classification of Diseases and Related Health Problems                                                           |

|    |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|----|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| F  | A/02.7            | Examination of the patient in order to make a diagnosis                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| I  |                   | <p><b>READ THE PROVIDED CASE DESCRIPTION AND GIVE DETAILED ANSWERS TO THE QUESTIONS</b></p> <p>Patient M., 24, presented to his local general practitioner complaining of headache, general weakness and fatigue, and loss of appetite. His medical history included facial swelling after an acute respiratory infection at age 14, a low-grade fever that persisted for 3-4 months, and changes in his urine (protein and red blood cells). He had been treated by a pediatrician for nephritis for about a year and received prednisolone. He has not seen a doctor since then and has not received any treatment.</p> <p>On examination: normal build, pale, dry skin, facial puffiness. Vesicular breathing, no wheezing. Blood pressure is 145 and 92 mmHg. The abdomen is soft and non-tender to palpation in all areas. The liver and spleen are not enlarged. Percussion of the lumbar region is negative on both sides. The patient reports a decrease in urine output to 700 ml per day.</p> <p>Complete blood count: erythrocytes <math>3.2 \times 10^{12}/l</math>, hemoglobin 105 g/l, leukocytes <math>5.2 \times 10^9/l</math>, band neutrophils 4%, segmented neutrophils 65%, eosinophils 3%, monocytes 5%, lymphocytes 23%, ESR 12 mm/h.</p> <p>Blood biochemistry: total cholesterol 5.0 mmol/l, blood creatinine <math>170 \mu\text{mol}/l</math>, blood urea 11 mmol/l.</p> <p>Urinalysis: specific gravity 1021, protein 0.32 g/L, leukocytes 2-4 per field of view, erythrocytes 7-10 per field of view, hyaline casts 2-3 per field of view. Albuminuria 250 mg/day. SCF (according to the CKD-EPI formula) 55 ml/min.</p> |
| Q  | 1                 | Question:<br>Suggest the most likely diagnosis                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| A  |                   | Correct answer:<br><br>Chronic glomerulonephritis, latent form, remission. CKD C3a, A2. Symptomatic arterial hypertension stage 1, risk 3. Anemia of chronic disease (nephrogenic), mild.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| R2 | Very good         | Formulates a diagnosis correctly and completely, may indicate anemia as secondary; when formulating a diagnosis of CKD, correctly indicates the stage, may not note the level of albuminuria                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| R1 | Good/Satisfactory | For a “good” rating: formulates the main diagnosis mostly correctly, does not note the level of albuminuria, does not indicate arterial hypertension and anemia in the diagnosis, or makes a mistake in indicating their degree;<br><br>for a “satisfactory” rating: formulates the main diagnosis with errors, incompletely, does not know the form of the disease, does not indicate arterial hypertension and anemia in the diagnosis                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| R0 | Fail              | Unable to formulate a diagnosis                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Q  | 2                 | Question:<br>Justify the proposed diagnosis.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| A  |                   | Correct answer:<br><br>The diagnosis of chronic glomerulonephritis was presumed based on the patient's characteristic urinary syndrome (moderate proteinuria, microhematuria) and hypertension, based on anamnestic data (he had                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

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|    |                   | been treated for glomerulonephritis 10 years earlier). A latent course is indicated by very scanty clinical manifestations, which are combined with changes in urine (moderate proteinuria, slight erythrocyturia) and a slight increase in blood pressure. The diagnosis of chronic kidney disease (CKD) is determined by the presence of signs of kidney damage (albuminuria 250 mg - A2, moderate hematuria) for 3 or more months (anamnestic data) and a decrease in SCF to 55 ml/min, which corresponds to stage 3a of the disease. An increase in blood pressure to 145 and 92 mm Hg in a young person with a history of kidney disease indicates. Symptomatic stage 1 arterial hypertension. A decrease in hemoglobin level to 105 g/L with a 10-year history of kidney disease indicates mild nephrogenic anemia.                                                                                                                                                                                        |
| R2 | Very good         | Substantiates the diagnosis fully, in accordance with ICD-10 and classification, uses a syndromic approach; does not substantiate symptomatic arterial hypertension or secondary anemia                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| R1 | Good/Satisfactory | For a “good” rating: correctly substantiates the diagnosis of glomerulonephritis, incorrectly substantiates the stage of CKD, does not substantiate symptomatic arterial hypertension or secondary anemia;<br>for a “satisfactory” rating: does not fully justify the diagnosis, does not use a syndromic approach, does not justify CKD, does not justify symptomatic arterial hypertension or secondary anemia.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| R0 | Fail              | Cannot substantiate the diagnosis                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Q  | 3                 | Question:<br>Please indicate additional tests to clarify the diagnosis                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| A  |                   | Correct answer:<br><br>In addition to the tests performed, it is advisable to do an ultrasound of the kidneys, an ECG, an echocardiogram, and a chest X-ray.<br>A nephrologist will order a renal biopsy (to clarify the morphological type of glomerulonephritis). To establish a diagnosis of CKD, it is necessary to identify any clinical markers of kidney damage confirmed over a period of at least 3 months; the presence of markers of irreversible structural changes in the organ, identified once during an intravital morphological examination of the organ or during its visualization; a decrease in the glomerular filtration rate (SFR) < 60 ml/min/1.73 m <sup>2</sup> , persisting for 3 months or more, regardless of the presence of other signs of kidney damage. In this regard, in order to confirm the diagnosis of CKD, it is necessary to repeat all examinations after 3 months (creatinine determination with calculation of SFR, determination of daily proteinuria/albuminuria). |
| R2 | Very good         | Lists in full the laboratory and instrumental examination methods indicated for the patient                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| R1 | Good/Satisfactory | For a “good” rating: does not list in full the laboratory or instrumental examination methods indicated for the patient, but must name creatinine with calculation of SCF, urea, kidney ultrasound;<br>for a “satisfactory” rating: names 1-2 laboratory parameters, 1 type of instrumental examination, does not mention the calculation of the SCF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| R0 | Fail              | Does not know any type of additional laboratory or instrumental tests indicated for the patient                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Q  | 4                 | Question:<br>What is the further treatment strategy for the patient?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

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| A  |                   | <p>Correct answer:</p> <p>A consultation with a nephrologist is indicated. Observation and treatment by a nephrologist for chronic glomerulonephritis are recommended, although the disease is currently in remission. A patient has been diagnosed with a new-onset glomerular filtration rate (GFR) of 55 ml/min, so the stability of the renal impairment should be assessed. A follow-up examination is performed after 2-4 weeks and then every 3-6 months. This includes blood pressure measurement, blood creatinine and GFR calculation, lipid profile, complete blood count (hemoglobin), potassium, sodium, uric acid, urinalysis, and daily albuminuria (proteinuria). If the disease is stable (GFR decrease of less than 2 ml/min over 6 months), examination and testing are performed once a year</p>                                                |
| R2 | Very good         | Correctly determines the patient management tactics, indicates laboratory and instrumental studies in full, knows the indications for referral to a nephrologist                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| R1 | Good/Satisfactory | <p>For a "good" rating: correctly determines the patient management tactics, indicates the main laboratory and instrumental studies, correctly names the examination timeframes, does not indicate the need for consultation with a nephrologist;</p> <p>for a "satisfactory" rating: determines the patient management tactics not completely, does not indicate the need for re-examination in 3-6 months, does not know the indications for consultation with a nephrologist</p>                                                                                                                                                                                                                                                                                                                                                                                 |
| R0 | Fail              | Cannot determine the patient management tactics, does not know the indications for consultation with a nephrologist                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Q  | 5                 | <p>Question:</p> <p>Which medication would you recommend for nephroprotective therapy? Justify your choice</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| A  |                   | <p>Correct answer:</p> <p>ACE inhibitors or angiotensin II receptor antagonists. These groups of antihypertensive drugs are the "gold standard" for treating patients with CKD stages C1-3. The mechanisms of nephroprotective action of these drugs include the elimination of glomerular hypertension and hyperfiltration, the alleviation of tubulointerstitial ischemia, the reduction of proteinuria, the reduction of sodium reabsorption, and the suppression of the synthesis of inflammatory cytokines and profibrogenic factors. They also have cardioprotective and vasoprotective effects. The effect should be assessed and the dose adjusted based on the level of proteinuria, not blood pressure. Ramipril has the most proven nephroprotective properties among the ACE inhibitors, and losartan among the angiotensin II receptor antagonists</p> |
| R2 | Very good         | Lists correct groups of drugs for nephroprotection, knows the mechanisms of nephroprotective action, knows drugs with proven nephroprotective properties, can indicate that it is better to use ACE inhibitors with a dual elimination pathway (liver and kidneys)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| R1 | Good/Satisfactory | For a good rating: correctly names groups of drugs, does not fully understand the mechanisms of nephroprotective action, does not                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

|    |      |                                                                                                                                                                                                                                                                                                                                     |
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|    |      | <p>indicate the need to evaluate the effectiveness of the nephroprotective action of drugs based on the level of proteinuria;</p> <p>for a satisfactory rating: group of drugs for nephroprotection, does not know the mechanisms of nephroprotective action, cannot name a single drug with proven nephroprotective properties</p> |
| R0 | Fail | Does not know the basics of nephroprotection, does not know the groups of nephroprotectors and the main nephroprotective drugs                                                                                                                                                                                                      |

#### Case Study No. 4

|   | Code     | Competence description / name of labor function / name of work activity / text                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|---|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| S | 31.05.01 | General Medicine (English-language program)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| C | GPC-4    | Able to use medical devices included in the healthcare guidelines, as well as perform medical examination to make a diagnosis                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| C | GPC-7    | Able to prescribe treatment and monitor its efficacy and safety                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| C | PC-3     | Ability and readiness to collect and analyze complaints that a patient presents with, anamnestic data, examination results, results of laboratory and instrumental tests, biopsy and other studies in order to identify patient's condition or establish the presence or absence of a disease                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| C | PC-4     | Ability and readiness to identify main pathological conditions, syndromes, symptoms of diseases, specific diseases of a patient in accordance with International Statistical Classification of Diseases and Related Health Problems                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| F | A/02.7   | Examination of the patient in order to make a diagnosis                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| I |          | <p><b>READ THE PROVIDED CASE DESCRIPTION AND GIVE DETAILED ANSWERS TO THE QUESTIONS</b></p> <p>A 55-year-old man, a smoker, presented to his local general practitioner with complaints of deep abdominal pain radiating upward. This pain typically occurs 1.5 to 2 hours after a large, spicy, or fatty meal. It lasts up to 3 hours and worsens when lying on his back and is relieved when sitting with his legs drawn up to his chest. The pain sometimes radiates to the left side of his chest. He also reports nausea, loss of appetite, and bloating. After each meal, he experiences mushy, sometimes watery, stools containing droplets of fat for an hour. He also reports weight loss.</p> <p>History: cholecystectomy 5 years ago due to gallstone disease.</p> |
| Q | 1        | Question:<br>Your preliminary diagnosis                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Q | 2        | Question:<br>List the possible complications of this disease                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Q | 3        | Question:<br>What examination methods are used to confirm and clarify the diagnosis?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Q | 4        | Question:<br>What are the main goals of conservative management/treatment of patients with this disease?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Q | 5        | Question:<br>List the main drug and non-drug treatments measures indicated for this patient                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

|    | Code              | Competence description / name of labor function / name of work activity / text                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|----|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| S  | 31.05.01          | General Medicine (English-language program)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| C  | GPC-4             | Able to use medical devices included in the healthcare guidelines, as well as perform medical examination to make a diagnosis                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| C  | GPC-7             | Able to prescribe treatment and monitor its efficacy and safety                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| C  | PC-3              | Ability and readiness to collect and analyze complaints that a patient presents with, anamnestic data, examination results, results of laboratory and instrumental tests, biopsy and other studies in order to identify patient's condition or establish the presence or absence of a disease                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| C  | PC-4              | Ability and readiness to identify main pathological conditions, syndromes, symptoms of diseases, specific diseases of a patient in accordance with International Statistical Classification of Diseases and Related Health Problems                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| F  | A/02.7            | Examination of the patient in order to make a diagnosis                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| I  |                   | <p><b>READ THE PROVIDED CASE DESCRIPTION AND GIVE DETAILED ANSWERS TO THE QUESTIONS</b></p> <p>A 55-year-old man, a smoker, presented to his local general practitioner with complaints of deep abdominal pain radiating upward. This pain typically occurs 1.5 to 2 hours after a large, spicy, or fatty meal. It lasts up to 3 hours and worsens when lying on his back and is relieved when sitting with his legs drawn up to his chest. The pain sometimes radiates to the left side of his chest. He also reports nausea, loss of appetite, and bloating. After each meal, he experiences mushy, sometimes watery, stools containing droplets of fat for an hour. He also reports weight loss.</p> <p>History: cholecystectomy 5 years ago due to gallstone disease.</p> |
| Q  | 1                 | Question:<br>Your preliminary diagnosis                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| A  |                   | Correct answer:<br><br>Chronic biliary-dependent pancreatitis of moderate severity with exocrine pancreatic insufficiency                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| R2 | Very good         | Chronic biliary pancreatitis of moderate severity with exocrine pancreatic insufficiency. The diagnosis was correct                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| R1 | Good/Satisfactory | Chronic pancreatitis of moderate severity with exocrine pancreatic insufficiency.<br>The diagnosis is incomplete; the connection between pancreatitis and biliary tract pathology is not indicated.<br><br>Chronic pancreatitis with exocrine pancreatic insufficiency.<br>The answer is incomplete; the connection between pancreatitis and biliary tract pathology is not indicated; the severity of pancreatitis is not indicated.                                                                                                                                                                                                                                                                                                                                         |
| R0 | Fail              | Stomach ulcer. The diagnosis was incorrect                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Q  | 2                 | Question:<br>List the possible complications of this disease                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| A  |                   | Correct answer:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

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|    |                   | Formation of pseudocysts, subhepatic jaundice, secondary biliary cirrhosis of the liver, compression and thrombosis of the superior mesenteric and portal veins, portal hypertension, erosive esophagitis, Mallory-Weiss syndrome, gastroduodenal ulcers, chronic duodenal obstruction, pancreatic cancer, infectious complications: inflammatory infiltrates, purulent cholangitis, septic conditions, deficiency of fat-soluble vitamins, osteoporosis, endocrine pancreatic insufficiency                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| R2 | Very good         | Formation of pseudocysts, subhepatic jaundice, secondary biliary cirrhosis of the liver, compression and thrombosis of the superior mesenteric and portal veins, portal hypertension, erosive esophagitis, Mallory-Weiss syndrome, gastroduodenal ulcers, chronic duodenal obstruction, pancreatic cancer, infectious complications: inflammatory infiltrates, purulent cholangitis, septic conditions, deficiency of fat-soluble vitamins, osteoporosis, endocrine pancreatic insufficiency                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| R1 | Good/Satisfactory | <p>Formation of pseudocysts, subhepatic jaundice, secondary biliary cirrhosis of the liver, compression and thrombosis of the superior mesenteric and portal veins, portal hypertension, erosive esophagitis, Mallory-Weiss syndrome, gastroduodenal ulcers, chronic duodenal obstruction, pancreatic cancer, endocrine pancreatic insufficiency. The answer is not complete, the following complications are not indicated: infectious complications: inflammatory infiltrates, purulent cholangitis, septic conditions, deficiency of fat-soluble vitamins, osteoporosis</p> <p>Pancreatogenic diabetes mellitus, pancreatic cysts. The answer is incomplete, subhepatic jaundice, secondary biliary cirrhosis of the liver, compression and thrombosis of the superior mesenteric and portal veins, portal hypertension, erosive esophagitis, Mallory-Weiss syndrome, gastroduodenal ulcers, chronic duodenal obstruction, pancreatic cancer, infectious complications: inflammatory infiltrates, purulent cholangitis, septic conditions, deficiency of fat-soluble vitamins, osteoporosis are not indicated</p> |
| R0 | Fail              | No answer                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Q  | 3                 | <p>Question:</p> <p>What examination methods are used to confirm and clarify the diagnosis?</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| A  |                   | <p>Correct answer:</p> <p>Determination of amylase levels in blood and urine, coprological examination, determination of elastase-1 levels in feces, abdominal X-ray, CT, MRI/MRCP, ERCP, ultrasound, endo-ultrasound</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| R2 | Very good         | Blood and urine amylase levels, coproscopy, fecal elastase-1 levels, abdominal X-ray, CT, MRI/MRCP, ERCP, ultrasound, and endo-ultrasound. The answer is correct                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| R1 | Good/Satisfactory | <p>Determination of amylase levels in blood and urine, coprological examination, determination of elastase-1 levels in feces, abdominal X-ray, CT, ultrasound</p> <p>The answer is incomplete: no MRI/MRCP, ERCP has been prescribed.</p> <p>Ultrasound of abdominal organs, coprogram, amylase in the blood. The answer is incomplete, not prescribed: determination of the amylase level in urine, determination of the elastase-1 level in feces, abdominal X-ray, CT, MRI/MRCP, ERCP.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

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| R0 | Fail              | No answer                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Q  | 4                 | Question:<br>What are the main goals of conservative management/treatment of patients with this disease?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| A  |                   | Correct answer:<br><br>1. Stop smoking.<br>2. Determining the cause of pain and attempting to reduce its intensity.<br>3. Treatment of exocrine pancreatic insufficiency.<br>4. Detection and treatment of endocrine pancreatic insufficiency.<br>5. Nutritional support.<br>6. Screening for adenocarcinoma                                                                                                                                                                                                                                                                                                                                         |
| R2 | Very good         | 1. Stop drinking alcohol and smoking.<br>2. Determining the cause of pain and attempting to reduce its intensity.<br>3. Treatment of exocrine pancreatic insufficiency.<br>4. Detection and treatment of endocrine pancreatic insufficiency.<br>5. Nutritional support.<br>6. Screening for adenocarcinoma.<br>The answer is complete.                                                                                                                                                                                                                                                                                                               |
| R1 | Good/Satisfactory | 1. Stop smoking.<br>2. Determining the cause of pain and attempting to reduce its intensity.<br>3. Treatment of exocrine pancreatic insufficiency.<br>4. Detection and treatment of endocrine pancreatic insufficiency.<br>The answer is incomplete: nutritional support and screening for adenocarcinoma are not recommended.<br><br>Pain relief, treatment of exocrine pancreatic insufficiency.<br>The answer is not complete:<br>1. Smoking cessation is not recommended.<br>2. Determining the cause of pain<br>4. Detection and treatment of endocrine pancreatic insufficiency.<br>5. Nutritional support.<br>6. Screening for adenocarcinoma |
| R0 | Fail              | No answer                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Q  | 5                 | Question:<br>List the main drug and non-drug treatments measures indicated for this patient                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| A  |                   | Correct answer:<br><br>Quitting smoking.<br>A low-fat, high-protein, high-carbohydrate diet 5-10 times a day<br>NSAIDs (Paracetamol) 30 minutes before meals.<br>If ineffective, use Tramadol.<br>Enzyme replacement therapy with Lipase (20-45000 for the main meal and 10-25 for the intermediate meal).<br>If symptoms persist, add proton pump inhibitors.                                                                                                                                                                                                                                                                                       |
| R2 | Very good         | A low-fat, high-protein, high-carbohydrate diet 5-10 times a day<br>NSAIDs (Paracetamol) 30 minutes before meals.<br>If ineffective, use Tramadol.<br>Enzyme replacement therapy with Lipase (20-45000 for the main meal and 10-25 for the intermediate meal).<br>If symptoms persist, add proton pump inhibitors.<br>The answer is complete                                                                                                                                                                                                                                                                                                         |

|    |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|----|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| R1 | Good/Satisfactory | <p>A low-fat, high-protein, high-carbohydrate diet 5-10 times a day<br/>NSAIDs (Paracetamol) 30 minutes before meals.<br/>If ineffective, use Tramadol.<br/>Enzyme replacement therapy with Lipase 10-25 thousand units.<br/>The answer is incomplete: quitting smoking is not recommended.<br/>The dose of lipase is insufficient.</p> <p>NSAIDs (Paracetamol) 30 minutes before meals.<br/>If ineffective, use Tramadol.<br/>Enzyme replacement therapy with Lipase 10-25 thousand units.<br/>The answer is not complete: quitting smoking is not recommended,<br/>No dietary recommendations, lipase dosage is insufficient.</p> |
| R0 | Fail              | No answer                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

### 3.2. Practical Skills Assessment Checklist

#### Practical Skill Name "Cardiac Auscultation"

|                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                               |                                                  |  |
|-------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|--|
| Practical Skill Name Cardiac Auscultation |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                               |                                                  |  |
| C                                         | PC-3                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Ability and readiness to collect and analyze complaints that a patient presents with, anamnestic data, examination results, results of laboratory and instrumental tests, biopsy and other studies in order to identify patient's condition or establish the presence or absence of a disease |                                                  |  |
| C                                         | PC-4                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Ability and readiness to identify main pathological conditions, syndromes, symptoms of diseases, specific diseases of a patient in accordance with International Statistical Classification of Diseases and Related Health Problems                                                           |                                                  |  |
| F                                         | A/02.7                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Examination of the patient in order to make a diagnosis                                                                                                                                                                                                                                       |                                                  |  |
| WA                                        | Work activities as part of the function<br>Providing primary outpatient health care to the population (does not involve all-day medical observation and treatment, including during house calls)                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                               |                                                  |  |
|                                           | Action                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Performed                                                                                                                                                                                                                                                                                     | Not Performed                                    |  |
| 1.                                        | Palpation of the apex beat before auscultation at the first auscultation point                                                                                                                                                                                                                                                                                                                                                                                                     | 2 points                                                                                                                                                                                                                                                                                      | -2 points                                        |  |
| 2.                                        | Auscultation at the five classic auscultation points in a specific order<br>- 1 apex of the heart<br>- 2 auscultation point in the second m/r at the right edge of the sternum (aorta)<br>- 3 auscultation point in the second m/r at the left edge of the sternum (pulmonary artery)<br>- 4 auscultation point at the xiphoid process of the sternum (tricuspid valve)<br>- 5 current at the place of attachment of the 3rd and 4th ribs to the sternum, Botkin-Erb point (aorta) | 3 points                                                                                                                                                                                                                                                                                      | -3 points<br>Performed incompletely:<br>-1 point |  |
| 3.                                        | General characteristics of the auscultatory picture<br>"At five classic auscultation points, two tones and two pauses are heard. Heart sounds are rhythmic, clear, and pure."                                                                                                                                                                                                                                                                                                      | 2 points                                                                                                                                                                                                                                                                                      | -2 points<br>Performed incompletely:<br>-1 point |  |
| 4.                                        | Characterization of possible changes in the general characteristics. Assessment of heart sounds at points 1 and 4, as well as at points 2 and 3 of auscultation (strength, duration, relationship of heart sounds, coincidence with the apex beat and radial pulse).                                                                                                                                                                                                               | 3 points                                                                                                                                                                                                                                                                                      | -3 points<br>Performed incompletely:<br>-1 point |  |
|                                           | Total                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 10 points                                                                                                                                                                                                                                                                                     |                                                  |  |

**Assessment criteria:****“Pass”** – 7 or more points**“Fail”** – 6 points and less

## Practical Skill Name “Lung Auscultation”

|                                        |                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                               |                                                  |
|----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|
| Practical Skill Name Lung Auscultation |                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                               |                                                  |
| C                                      | PC-3                                                                                                                                                                                                                                                                                                                                                                                                                       | Ability and readiness to collect and analyze complaints that a patient presents with, anamnestic data, examination results, results of laboratory and instrumental tests, biopsy and other studies in order to identify patient's condition or establish the presence or absence of a disease |                                                  |
| C                                      | PC-4                                                                                                                                                                                                                                                                                                                                                                                                                       | Ability and readiness to identify main pathological conditions, syndromes, symptoms of diseases, specific diseases of a patient in accordance with International Statistical Classification of Diseases and Related Health Problems                                                           |                                                  |
| F                                      | A/02.7                                                                                                                                                                                                                                                                                                                                                                                                                     | Examination of the patient in order to make a diagnosis                                                                                                                                                                                                                                       |                                                  |
| WA                                     | Work activities as part of the function<br>Providing primary outpatient health care to the population (does not involve all-day medical observation and treatment, including during house calls)                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                               |                                                  |
|                                        | Action                                                                                                                                                                                                                                                                                                                                                                                                                     | Performed                                                                                                                                                                                                                                                                                     | Not Performed                                    |
| 1.                                     | The patient is asked to remove clothing from the chest and take an upright position, sitting on a chair.                                                                                                                                                                                                                                                                                                                   | 1 point                                                                                                                                                                                                                                                                                       | -1 point                                         |
| 2.                                     | The patient is asked to breathe forcefully (up to 25 times per minute, with the mouth slightly open)                                                                                                                                                                                                                                                                                                                       | 1 point                                                                                                                                                                                                                                                                                       | -1 point                                         |
| 3.                                     | Auscultation of the lungs is performed on symmetrical areas of the chest in the supraclavicular regions, then in the I, II, III m/r on the right and left along the midclavicular line, in the IV, V m/r along the midclavicular line on the right                                                                                                                                                                         | 2 points                                                                                                                                                                                                                                                                                      | -2 points<br>Performed incompletely:<br>-1 point |
| 4.                                     | The patient is asked to raise his hands and clasp them behind his head.                                                                                                                                                                                                                                                                                                                                                    | 1 point                                                                                                                                                                                                                                                                                       | -1 point                                         |
| 5.                                     | Auscultation of the lungs is performed on symmetrical areas of the chest in the axillary fossa, then in the IV, V, VI, VII, VIII m/r on the right and left along the midaxillary line                                                                                                                                                                                                                                      | 2 points                                                                                                                                                                                                                                                                                      | -2 points<br>Performed incompletely:<br>-1 point |
| 6.                                     | The patient is asked to cross his arms over his chest, place his palms on his shoulders and slightly lean his torso forward.                                                                                                                                                                                                                                                                                               | 1 point                                                                                                                                                                                                                                                                                       | -1 point                                         |
| 7.                                     | Auscultation of the lungs is performed in symmetrical areas of the chest in the suprascapular regions, then at the level of the upper, middle, and lower thirds of the interscapular region along the paravertebral lines on the right and left, then along the paravertebral and scapular lines in the VII, VIII, and IX interscapular regions on the right and left. A conclusion corresponding to the norm is provided. | 2 points                                                                                                                                                                                                                                                                                      | -2 points<br>Performed incompletely:<br>-1 point |
|                                        | Total                                                                                                                                                                                                                                                                                                                                                                                                                      | 10 points                                                                                                                                                                                                                                                                                     |                                                  |

**Assessment criteria:****“Pass”** – 7 or more points**“Fail”** – 6 points and less

**Practical Skill Name “Liver Palpation”**

|    |                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                               |               |
|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| C  | PC-3                                                                                                                                                                                                     | Ability and readiness to collect and analyze complaints that a patient presents with, anamnestic data, examination results, results of laboratory and instrumental tests, biopsy and other studies in order to identify patient's condition or establish the presence or absence of a disease |               |
| C  | PC-4                                                                                                                                                                                                     | Ability and readiness to identify main pathological conditions, syndromes, symptoms of diseases, specific diseases of a patient in accordance with International Statistical Classification of Diseases and Related Health Problems                                                           |               |
| F  | A/02.7                                                                                                                                                                                                   | Examination of the patient in order to make a diagnosis                                                                                                                                                                                                                                       |               |
| WA | Work activities as part of the function<br>Providing primary outpatient health care to the population (does not involve all-day medical observation and treatment, including during house calls)         |                                                                                                                                                                                                                                                                                               |               |
|    | Action                                                                                                                                                                                                   | Performed                                                                                                                                                                                                                                                                                     | Not Performed |
| 1. | Ask the patient to lie on their back with their knees bent at 130-150°. The physician should sit on a separate chair to the right of the patient.                                                        | 1 point                                                                                                                                                                                                                                                                                       | -1 point      |
| 2. | Determine the inferior border of the liver along the midclavicular line. A pleximeter finger is placed on the midclavicular line at the level of the umbilicus, parallel to the suspected border.        | 1 point                                                                                                                                                                                                                                                                                       | -1 point      |
| 3. | Percussion in the direction from the clearer sound to the duller one. Mark along the outer edge of the pleximeter finger facing the clearer sound. Provide a conclusion.                                 | 1 point                                                                                                                                                                                                                                                                                       | -1 point      |
| 4. | The left hand is placed on the chest at the level of the costal arch on the right, with one finger pointing towards the anterior midline, the doctor's palm grasping and lightly fixing the costal arch. | 2 points                                                                                                                                                                                                                                                                                      | -2 points     |
| 5. | The right hand with 4 fingers slightly bent at the interphalangeal joints is placed 1 cm below the found border of the liver.                                                                            | 1 point                                                                                                                                                                                                                                                                                       | -1 point      |
| 6. | A downward-facing skin fold is created. The patient is asked to inhale into the abdomen, then exhale as much as possible and hold the breath.                                                            | 1 point                                                                                                                                                                                                                                                                                       | -1 point      |
| 7. | On exhalation, the fingers are immersed in the area of the right hypochondrium and the patient is asked to inhale again, at which time a palpating movement is performed.                                | 1 point                                                                                                                                                                                                                                                                                       | -1 point      |
| 8. | Provide a conclusion. Assess the edge of the liver, its elasticity, tenderness, and shape.                                                                                                               | 2 points                                                                                                                                                                                                                                                                                      | -2 points     |
|    | Total                                                                                                                                                                                                    | 10 points                                                                                                                                                                                                                                                                                     |               |

**Assessment criteria:**

**“Pass”** – 7or more points

**“Fail”** – 6points and less

**Practical Skill Name “Abdominal Inspection and Palpation”**

|          |      |                                                                                                                                                                                                                                                                                               |
|----------|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>C</b> | PC-3 | Ability and readiness to collect and analyze complaints that a patient presents with, anamnestic data, examination results, results of laboratory and instrumental tests, biopsy and other studies in order to identify patient's condition or establish the presence or absence of a disease |
| <b>C</b> | PC-4 | Ability and readiness to identify main pathological conditions, syndromes, symptoms of diseases, specific diseases of a patient in                                                                                                                                                            |

|           |                                                                                                                                                                                                                                                                                                                                          |                                                                                                  |               |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|---------------|
|           |                                                                                                                                                                                                                                                                                                                                          | accordance with International Statistical Classification of Diseases and Related Health Problems |               |
| <b>F</b>  | A/02.7                                                                                                                                                                                                                                                                                                                                   | Examination of the patient in order to make a diagnosis                                          |               |
| <b>WA</b> | Work activities as part of the function<br>Providing primary outpatient health care to the population (does not involve all-day medical observation and treatment, including during house calls)                                                                                                                                         |                                                                                                  |               |
|           | Action                                                                                                                                                                                                                                                                                                                                   | Performed                                                                                        | Not Performed |
| 1.        | Ask the patient to lie on their back with their knees bent at 130-150°. The physician should sit on a separate chair to the right of the patient.                                                                                                                                                                                        | 1 point                                                                                          | -1 point      |
| 2.        | Conduct a static examination of the abdomen. Assess the abdominal shape, symmetry, presence of peristalsis and antiperistalsis, hernias, masses, and rashes in the abdominal area. Provide a conclusion.                                                                                                                                 | 1 point                                                                                          | -1 point      |
| 3.        | Conduct a dynamic abdominal examination. Ask the patient to breathe into their abdomen. Assess the degree of abdominal involvement in breathing and its symmetry. Provide a conclusion.                                                                                                                                                  | 1 point                                                                                          | -1 point      |
| 4.        | Superficial palpation of the abdomen. Palpation is performed from left to right if there are no complaints of abdominal pain, and toward the source of pain if present, taking into account the abdominal topography. The examination is performed using gentle movements, applying gentle pressure.                                     | 2 points                                                                                         | -2 points     |
| 5.        | Next, a smooth, careful bending of the fingers is performed at the second interphalangeal joints, with the fingers slightly immersed in the abdominal wall and sliding them along with the skin.                                                                                                                                         | 1 point                                                                                          | -1 point      |
| 6.        | Provide a conclusion based on the results of a superficial indicative palpation of the abdomen.                                                                                                                                                                                                                                          | 2 points                                                                                         | -2 points     |
| 7.        | Checking the Shchetkin-Blumberg sign: Palpation of one of the abdominal topographic regions. Pressing on the abdomen with the fingers and then abruptly withdrawing the hand. Conclude: the peritoneal irritation sign is positive if the onset or intensification of pain occurs with abrupt withdrawal of the hand, not with pressure. | 2 points                                                                                         | -2 points     |
|           | Total                                                                                                                                                                                                                                                                                                                                    | 10 points                                                                                        |               |

**Assessment criteria:**

“Pass” – 7 or more points

“Fail” – 6 points and less

**Practical Skill Name “Radial Pulse Assessment”**

|           |                                         |                                                                                                                                                                                                                                                                                               |
|-----------|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>C</b>  | PC-3                                    | Ability and readiness to collect and analyze complaints that a patient presents with, anamnestic data, examination results, results of laboratory and instrumental tests, biopsy and other studies in order to identify patient's condition or establish the presence or absence of a disease |
| <b>C</b>  | PC-4                                    | Ability and readiness to identify main pathological conditions, syndromes, symptoms of diseases, specific diseases of a patient in accordance with International Statistical Classification of Diseases and Related Health Problems                                                           |
| <b>F</b>  | A/02.7                                  | Examination of the patient in order to make a diagnosis                                                                                                                                                                                                                                       |
| <b>WA</b> | Work activities as part of the function |                                                                                                                                                                                                                                                                                               |

|    |                                                                                                                                                                                   |           |                                            |
|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|--------------------------------------------|
|    | Providing primary outpatient health care to the population (does not involve all-day medical observation and treatment, including during house calls)                             |           |                                            |
|    | Action                                                                                                                                                                            | Performed | Not Performed                              |
| 1. | The patient sits on a chair facing the student                                                                                                                                    | 1 point   | -1 point                                   |
| 2. | Palpation of the radial artery is performed with three fingers from the medial edge of the forearm in the area of the projection of the radial artery simultaneously on both arms | 1 point   | -1 point                                   |
| 3. | Assess the presence of various pulses based on the shape and velocity of the pulse wave. Provide a conclusion that corresponds to the norm.                                       | 1 point   | -1 point                                   |
| 4. | Determining the pulse on one of the radial arteries for 1 minute.                                                                                                                 | 1 point   | -1 point                                   |
| 5. | Assess the pulse rhythm and count the number. Provide a conclusion that is consistent with the norm.                                                                              | 2 points  | -2 points                                  |
| 6. | Assess the pulse volume and tension. Provide a conclusion that is within the normal range.                                                                                        | 1 point   | -1 point                                   |
| 7. | Diagnostic value of the radial artery pulse (give 2 examples)                                                                                                                     | 3 points  | -3 points<br>Just one example<br>- 1 point |
|    | Total                                                                                                                                                                             | 10 points |                                            |

**Assessment criteria:**

**“Pass”** – 7 or more points

**“Fail”** – 6 points and less

**4. Assessment criteria for learning outcomes**

**"Very good"** grade is given to a student who possesses knowledge of the subject in full scope outlined in the curriculum, has a sufficiently deep insight into the subject; is able to answer all questions clearly, exhaustively, and with no outside help; structures their answers logically, with emphasis on the most important information; is able to analyze, compare, classify, summarize, refine, and structure the course content, giving particular attention to cause-and-effect relationships.

**"Good"** is given to a student whose knowledge of the subject is almost in full scope outlined in the curriculum (gaps are only present in the knowledge of some especially complex aspects); is able to answer questions exhaustively with little to no outside help; does not always put emphasis on the most important information, but does not make significant mistakes.

**"Satisfactory"** is given to a student who possesses the bulk of knowledge on the subject; has difficulties answering questions with no outside help, uses imprecise wording; makes mistakes in substantial number of their answers.

**"Unsatisfactory"** is given to a student who does not have the mandatory minimum of knowledge on the subject, is not able to give an answer even with additional guiding questions.