

**MINISTRY OF HEALTH OF THE REPUBLIC OF BELARUS**

**EDUCATIONAL INSTITUTION**

**BELARUSIAN STATE MEDICAL UNIVERSITY**

**APPROVED**

Vice Rector for Academic Affairs  
of Educational institution

«Belarusian State Medical University»

Y.A.Sokolov



.2024

**INTERNAL DISEASES STATE EXAM PROGRAM  
FOR THE MEDICAL FACULTY FOR INTERNATIONAL STUDENTS**

for the specialty 1-79 01 01 General medicine

The program of the state exam "Internal Diseases" is developed on the basis of:

the educational standard of higher education in the specialty 1-79 01 01 "General Medicine", approved and implemented by the resolution of the Ministry of Education of the Republic of Belarus dated 30.08.2013 №88;

a typical curriculum for the discipline "Internal Medicine" in the specialty 1-79 01 01 "General Medicine", approved on 31.08.2016, registration No. ТД-L.562/typ;

a typical curriculum for the academic discipline "Infectious Diseases" in the specialty 1-79 01 01 "General Medicine", approved on 31.08.2016, registration No. ТД-L.577/typ;

a typical curriculum for the academic discipline "Clinical Immunology, Allergology" in the specialty 1-79 01 01 "General Medicine", approved on 09.11.2017, registration No. ТД-L.617/typ;

a typical curriculum for the academic discipline "Clinical Pharmacology" in the specialty 1-79 01 01 "General Medicine", approved on 03.10.2018, registration No. ТД-L.637/typ;

a typical curriculum for the academic discipline "Outpatient therapy" in the specialty 1-79 01 01 "General Medicine", approved on 31.08.2016, registration No. ТД-L.549/typ;

a typical curriculum for the academic discipline "Occupational Diseases" in the specialty 1-79 01 01 "General Medicine", approved on 08.08.2017, registration No. ТД-L.607/typ;

a typical curriculum for the academic discipline "Phthisiopulmonology" in the specialty 1-79 01 01 "General Medicine", approved on 29.07. 2016, registration No. ТД-L.545/typ;

a typical curriculum for the academic discipline "Endocrinology" in the specialty 1-79 01 01 "General Medicine", approved on 08.08.2017, registration No. ТД-L.603/typ;

the curriculum of the institution of higher education in the discipline "Internal Diseases" of the sub-internship profile "General medical practice" (for foreign citizens) in the specialty 1-79 01 01 General medicine, approved on 12.08.2023, registration No. L.01/2324/edu.sub

the curriculum of the institution of higher education in the discipline "Emergency cardiology and other emergency conditions" of the sub-internship profile "General medical practice" in the specialty 1-79 01 01 General medicine, approved on 12.0.2023, registration No. L.15/2324/edu.sub

**COMPILERS:**

N.N. Maroz-Vadalazhskaya, Head of the 2nd Department of Internal Diseases of the Educational institution "Belarusian State Medical University", Associate Professor, PhD

V.M.Sidzenka, Associate Professor, PhD

**RECOMMENDED FOR APPROVAL:**

by the 2nd Department of Internal Diseases of the Educational institution "Belarusian State Medical University" (protocol #12 of 29.03.2024);

by the Council of the of General Medicine Faculty of the Educational institution "Belarusian State Medical University"  
(protocol # 4 of 24.04.2024)

## **STATE EXAM PROCEDURE**

### **List of academic disciplines included in the state exam:**

1. "Internal Medicine";
2. "Infectious Diseases";
3. "Clinical Immunology, Allergology";
4. "Clinical Pharmacology";
5. "Emergency Cardiology and Other Emergency Conditions";
6. "Phthisiopulmonology";
7. "Endocrinology"
8. "Outpatient therapy"
9. "Occupational diseases"

### **Procedure and form of the state examination**

The state exam is carried out face-to-face in the form of an oral examination with the involvement of the teaching staff of the departments teaching the disciplines included in the state exam. For the final certification, the State Examination Commission is formed.

The state exam is carried out orally by tickets after the assessment of practical skills as part of the graduates passing an objective structured clinical examination (hereinafter referred to as OSCE) in Simulation and Attestation Center.

## **STRUCTURE OF THE EXAMINATION CARD**

The examination card for the oral interview comprises fore theoretical questions. The first question is concerned with the main nosological forms in therapy: diseases of the respiratory, cardiovascular, digestive and blood systems, kidneys, rheumatic diseases; the second – general problems of metabolic and endocrine system diseases, clinical immunology, allergology, phthisiopulmonology; the third – particular issues of emergency and urgent situations in Internal Medicine and their management; the fourth – problems of etiology, pathogenesis, classification, clinical manifestations, principles of treatment and prevention of infectious diseases.

## **CONTENT OF THE STATE EXAMINATION PROGRAM**

### **1. CURRENT ISSUES IN THERAPY**

#### **1.1. Differential diagnosis of fever of unknown origin**

The mechanism of fever. The main causes of fever. The types of fevers. The algorithm of differential diagnosis in febrile syndrome. Fever of unknown origin, the search for the causes of febrile syndrome. Medical tactics.

#### **1.2. Differential diagnosis of the syndrome of elevated ESR**

Possible causes of increase in ESR in humans. Laboratory and instrumental tests in the diagnostic search. The algorithm of differential diagnosis.

### **2. RESPIRATORY DISEASES**

#### **2.1. Differential diagnosis of the syndrome of bronchial obstruction and treatment guidelines**

Differential diagnosis of diseases with different types of bronchial obstruction syndrome: asthmatic, allergic, autoimmune, infectious and inflammatory, obstructive, dyskinetic, emphysematous, hemodynamic, endocrine and humoral, neurogenic and others, spirometry.

The gas composition of the blood and exhaled air, bronchoscopy. Principles of treatment of asthma and chronic obstructive pulmonary disease.

#### **2.2. Differential diagnosis of the syndrome of pulmonary infiltration**

The concept of pulmonary infiltration syndrome. Causes of lung infiltration. Inflammatory and non-inflammatory infiltrates. Clinical diagnostic criteria for pneumonia caused by various pathogens. The tumor infiltrates. Pulmonary tuberculosis in the practice of general practitioner. Differential diagnosis of specific allergic infiltration, infiltration in venous thromboembolism, stagnant-hypostatic disturbances in the lungs, pneumonitis in case of systemic connective tissue diseases. Fungal lung injury. The concept of pulmonary eosinophilia. Differential diagnosis with lung atelectasis. Medical tactics of inspection and treatment of patients.

#### **2.3. Diseases of the pleura. Differential diagnosis with the presence of fluid in the pleural cavity**

Clinical and radiological picture with pleural effusion. Additional research methods: ultrasound, computed tomography. Differential diagnosis with pleural effusion. Medical tactics. Encysted pleurisy. Empyema. Spontaneous pneumothorax: diagnosis, medical emergency. Clinical management of patients. Treatment of pleural diseases.

#### **2.4. Interstitial and suppurative lung disease**

Classification of interstitial lung diseases. Features of clinical, instrumental and laboratory changes in interstitial lung disease. Differential diagnosis with interstitial and disseminated processes in the lungs. Idiopathic pulmonary fibrosis,

exogenous (toxic), alveolitis, disseminated miliary pulmonary tuberculosis, pneumoconiosis, sarcoidosis, lung lesions by vasculitis and diffuse connective tissue diseases, tumor dissemination in the lungs. Principles of treatment of idiopathic pulmonary fibrosis, lung sarcoidosis. Acute and chronic destruction of the lung, lung abscess, gangrene of the lungs, risk factors and causes of development, clinical manifestations, course, outcomes. Diagnostic investigations. Selection of patients, therapy.

## **2.5. Differentiated antibacterial therapy for lung diseases**

Main groups of antibiotics. The choice of an antibiotic, routes of administration and doses of the drug for the treatment of community-acquired pneumonia caused by various microorganisms, depending on the severity of the course. Antibacterial treatment of chronic bronchitis, infectious exacerbation of chronic obstructive pulmonary disease. Antifungal antibiotics. Rational use of combinations of antibiotics for the treatment of lung diseases. Side effects of antibacterial drugs.

## **3. DISEASES OF THE CIRCULATORY SYSTEM**

### **3.1. Chronic forms of coronary heart disease: differential diagnostics, medical tactic.**

Prevalence and classification of coronary heart disease (CHD). The term "ischemic cascade." Silent myocardial ischemia. Anginal attack characteristics. Atypical angina pectoris. Relief of pain attack. Classification, diagnosis and treatment of stable angina. Stratification of risk of cardiovascular complications. Electrocardiography and Holter monitoring in the diagnosis of chronic coronary insufficiency. Exercise testing with physical and drug load. Non-invasive methods of diagnosis of CHD. Indications for routine and diagnostic coronary angiography.

### **3.2. Acute coronary syndrome with elevation and without ST segment elevation. Atypical forms of myocardial infarction**

Definition, diagnosis of acute coronary syndrome, organizational tactics of pre-hospital and in hospital. Risk stratification for GRACE scale. Emergency medical assistance, a differentiated approach to the treatment. Methods of reperfusion therapy. Atypical clinical forms of myocardial infarction. Classes of severity. ECG and laboratory diagnosis of myocardial infarction. Markers of myocardial necrosis. The value of echocardiography. Drug therapy depending on the method of reperfusion of the infarct-related artery. Thrombolytic and anticoagulant therapy. Indications for percutaneous coronary intervention, cardiac surgical treatment and auxiliary blood circulation.

### **3.3. Differential diagnosis and modern principles of treatment of hypertension**

Prevalence, modern classification, risk stratification, variants of the course and complications of hypertension. Classification of symptomatic hypertension. Features of clinical manifestations of renal, endocrine and hemodynamic hypertension. ECG in myocardial hypertrophy. Plan and algorithm of

examination of patients with high blood pressure. Differential diagnosis of primary and secondary hypertension. The objectives of the treatment of hypertension. Differentiated approach to treatment. The concept of the target blood pressure values for different diseases of internal organs. Modern antihypertensive drugs. Prevention of sudden death, heart attack and stroke in people with hypertension.

### **3.4. Differential diagnosis and differentiated treatment of cardiac arrhythmias and conduction**

Tachyarrhythmia. Extrasystole. Paroxysmal arrhythmias. Ventricular tachycardia. Ventricular fibrillation. Wolff-Parkinson-White syndrome. Differential diagnosis. Treatment of cardiac arrhythmias: emergency assistance, planned treatment, medical and surgical treatment. Risk stratification of thromboembolic events in atrial fibrillation. Classification and pharmacokinetics of antiarrhythmic drugs, side effects, interactions with other drugs and with each other. General principles for selection of anti-arrhythmic drugs. Prevention of cardiac arrhythmias. Bradyarrhythmia. Indications for pacemaker.

### **3.5. Differential diagnosis of pain in the chest**

Possible causes of chest pain. Diseases of the myocardium and pericardium which is manifested by pain in the heart. Chest pain associated with the diseases of the pleura, lung and spine. Differential diagnosis of pain in the chest.

### **3.6. Differential diagnosis and treatment of the endocardial and myocardial diseases**

Laboratory and instrumental methods of diagnosis of myocardial inflammatory diseases. Diagnosis of myocarditis. Indications for endomyocardial biopsy. Differential diagnosis. ECG hormonal and metabolic disorders, myocarditis. Risk factors, etiological factors, clinical picture, classification, diagnostic methods. Diagnostic criteria and principles of differential diagnosis of infective endocarditis. "Masks" of infective endocarditis. Methods of verification of the diagnosis. Indications for cardiac surgery and medical treatment. Basic principles of antibiotic therapy. Prevention of infective endocarditis.

### **3.7. A differentiated approach to the treatment of chronic heart failure**

Definition and classification of heart failure. Advantages and disadvantages of the classifications used in chronic heart failure. The concept of the "hidden" heart failure. Basic principles of diagnosis and differential diagnosis. Current approaches to therapy. Algorithms of treatment. Chronic pulmonary heart. Heart transplantation. Cardiac resynchronization therapy.

## **4. DISEASES OF THE DIGESTIVE TRACT.**

### **4.1. Differential diagnosis of esophageal diseases**

Gastroesophageal reflux disease (GERD), achalasia, Barrett's esophagus, esophagitis, esophageal cancer. Esophageal dysphagia, causes of appearance. Symptoms of diseases of the esophagus. Differential diagnosis of problems in

swallowing. The main methods of diagnosis and differential diagnosis.

#### **4.2. Differential Diagnosis and differential treatment of gastroduodenal lesions**

Functional dyspepsia, chronic gastritis, gastroduodenal ulcers, tumors. Diagnosis of complications of gastroduodenal ulcers. Principles of drug therapy of gastroduodenal lesions (eradication of *Helicobacter pylori*, suppression of acid-peptic aggression, correction of motor-evacuation disorders). Place of physiotherapy in the treatment of ulcers. Prevention of recurrence of ulcers.

#### **4.3. Differential Diagnosis and differential treatment of chronic hepatitis and non-alcoholic steatohepatitis**

The etiological classification of chronic hepatitis. Determination of clinical entities: autoimmune hepatitis, chronic hepatitis B, chronic hepatitis C, drug-induced hepatitis, Wilson's disease, liver disease caused by deficiency of alpha.1-antitrypsin. Clinical symptoms. Laboratory symptoms. Medicines for the causal treatment. Medications causing toxic liver disease. Alcoholic hepatitis. The doses of alcohol that increase the risk of liver damage. Signs of an alcoholic lesion of other organs (chronic pancreatitis, Dupuytren's contracture, myocardial dystrophy, encephalopathy, polyneuropathy). Associated symptoms (deficit diet, vitamin deficiency), liver biopsy. The clinical picture. Features of laboratory diagnostics. Treatment of nonalcoholic and alcoholic steatohepatitis.

#### **4.4. Differential diagnosis and treatment of liver cirrhosis.**

Biliary, viral, alcoholic cirrhosis, cirrhosis with hereditary diseases. Basic clinical syndromes and symptoms. Complications. Differential diagnosis. Treatment of certain forms of liver cirrhosis. Indications for liver transplantation.

#### **4.5. Differential diagnosis of jaundice and hepatosplenomegaly**

Classification of jaundice: suparenal (hemolytic), parenchymal, subhepatic (obstructive). Laboratory diagnosis of hepatocyte damage syndrome. Diagnostics of jaundice and hepatosplenomegaly. The tactics of a general practitioner in identifying hemolytic, hepatocellular and obstructive jaundice. Differential diagnosis of hepatosplenomegaly. Tactics of general practitioner in identifying the disease. Indications for consultation of surgeon and hematologist.

#### **4.6. Differential diagnosis and treatment of diseases of the pancreas**

Diagnosis and differential diagnosis of chronic pancreatitis. Patient survey program. The main directions of conservative treatment: pain relief, compensation of exocrine insufficiency, correction of nutritional status.

#### **4.7. Diagnosis and differential diagnosis of inflammatory bowel disease**

Inflammatory bowel disease: ulcerative colitis, Crohn's disease. Diagnostic criteria: clinical, endoscopic, histological, cytological, radiological, laboratory.

Extraintestinal manifestations. Complications. Differential diagnosis. Principles of drug therapy. Indications for surgical treatment.

### **5. DISEASES OF JOINTS AND CONNECTIVE TISSUE**



### **5.1. Current treatment options for rheumatic diseases: non-steroidal anti-inflammatory drugs, corticosteroids, cytotoxic drugs, genetically engineered biological agents**

Properties and mechanism of action of non-steroidal anti-inflammatory drugs (NSAIDs). The classification of NSAIDs. NSAID interaction with other drugs. Side effects of NSAID: gastropathy, the risk of cardiovascular complications. The mechanism of action of glucocorticoid hormones, indications and contraindications for using these drugs. Pulse therapy: indications, contraindications, side effects. Cytotoxic agents used in the treatment of rheumatic diseases. Genetically engineered biological agents, indications for use. Extracorporeal therapies in rheumatology: indications, contraindications, side effects.

### **5.2. Arthritis associated with infection: diagnosis, differential treatment**

The main forms of reactive arthritis, diagnostic principles. Therapy of reactive arthritis. Principles of diagnostics and pathogenetic therapy in enteropathic arthropathy. Infectious arthritis (tuberculosis, viral, Lyme borreliosis), diagnosis and treatment principles. Erythema nodosum in a therapeutic clinic. The algorithm of differential diagnosis. The principles of treatment.

### **5.3. Differential diagnosis of microcrystalline arthritis and osteoarthritis, treatment guidelines**

Gout, pyrophosphate arthropathy, hydroxylapatite arthropathy. Osteoarthritis. Mechanisms of development, clinical manifestations. Diagnostics. Differential diagnosis. The principles of treatment.

### **5.4. Differential diagnosis and treatment of spondyloarthritis. Osteoporosis**

Clinical forms of spondyloarthritis. Features of the articular syndrome, differential diagnosis. Pathogenetic therapy. The diagnostic algorithm and treatment of psoriatic arthritis. Risk factors for osteoporosis, classification. The clinical picture, diagnosis, differential diagnosis of osteoporosis (osteopenia, osteomalacia). The goals of osteoporosis treatment. Pathogenetic therapy groups of drugs. Prevention of osteoporosis, primary and secondary. Rehabilitation of patients with osteoporosis.

### **5.5. Differential diagnosis of joint-affected syndrome**

The algorithm of differential diagnosis of joint-affected syndrome based on mono-, oligo-, polyarticular lesions at the onset of the disease; the duration of the a syndrome; sex, age, involvement of various organs and systems; changes identified through laboratory and instrumental examination.

### **5.6. Differential diagnosis of systemic connective tissue diseases and systemic vasculitis**

Diagnostic algorithm in systemic connective tissue diseases. Features of the joint-affected syndrome, the clinical picture of systemic connective tissue

diseases. Differential diagnosis. Features of immunologic diagnostics. The outcome and prognosis in systemic lupus erythematosus, systemic sclerosis, and dermatopolymyositis. Primary and secondary forms of vasculitis. Diagnostic algorithm in systemic vasculitis. Differential diagnosis. Immunological diagnosis. Forecast.

### **5.7. The principles of the treatment of systemic connective tissue diseases and systemic vasculitis**

The goal of treatment of systemic connective tissue diseases. A differentiated approach depending on disease activity, organ damage. The goal of therapy stages of systemic vasculitis. The main groups of drugs used for the treatment of systemic connective tissue diseases, vasculitis: indications, contraindications, side effects, interactions with other drugs, the duration of therapy. Plasmapheresis. The concept of simultaneous intensive care. Symptomatic treatment of systemic connective tissue diseases and vasculitis.

## **6. KIDNEY DISEASE AND URINARY TRACT**

### **6.1. The diagnostic capabilities of laboratory and instrumental diagnostic methods in nephrology**

Disorders of filtration, reabsorption, and secretion. Major renal function (urine formation and urination; regulation of homeostasis parameters, synthesis and incretion of biologically active substances, regulation of hematopoiesis). Laboratory methods of examination of patients with kidney disease (urinary syndrome). Instrumental methods of diagnosis of kidney disease. Methods of evaluation of renal function. Kidney biopsy (indications and contraindications).

### **6.2. Differential diagnosis of chronic kidney disease**

Main causes and classification of chronic kidney disease (CKD). Features of bladder syndrome in glomerulonephritis. Differential diagnosis. Interstitial nephritis. Etiology. The clinical picture. Features of medicinal interstitial nephritis. Treatment. Forecast. Pyelonephritis. Risk factors for pyelonephritis. Modern methods of diagnostics of pyelonephritis. Antibiotic therapy for pyelonephritis. Criteria for selection of antibacterial drugs.

### **6.3. Differential diagnosis of glomerular and tubular renal lesions, treatment guidelines**

Diseases, the pathogenesis of which is loss of glomerular nephrons and diseases with a primary lesion of renal tubular system. Clinical manifestations, diagnosis, differential diagnosis. Treatment principles of the glomerular lesions and tubular lesions of the kidneys.

### **6.4. Differential diagnosis of nephrotic syndrome**

Determination of nephrotic syndrome. The main symptoms. Diseases that contribute to the development of the syndrome. Clinical manifestations. The diagnostic capabilities. Differential diagnosis. Medical tactic.

### **6.5. Kidney damage from diabetes mellitus, systemic connective tissue diseases, systemic vasculitis, gout, multiple myeloma. Current treatment options**

The mechanisms of kidney damage in diabetes mellitus, systemic connective tissue diseases, systemic vasculitis, gout, multiple myeloma. Clinical and laboratory manifestations. The diagnostic capabilities. The principles of treatment.

## **7. DISEASES OF BLOOD**

Differential diagnosis of anemia syndrome, anemia treatment guidelines

Classification of anemia. Differential diagnosis. Diagnostic algorithm in anemic syndrome. Iron deficiency, vitamin B12 deficiency and folic acid deficiency, Hemolytic and aplastic anemia, anemia of chronic disease, anemia in patients with chronic kidney disease. The principles of treatment. The criteria for the effectiveness of treatment.

Differential diagnosis of leukemoid reactions and hematological malignancies, treatment guidelines. Causes of leukemoid reactions. Blood picture. Diagnosis and differential diagnosis of leukemoid reactions and hematological malignancies. Principles of treatment of hematological malignancies.

Differential diagnosis of thrombophilia, treatment guidelines

Thrombophilia due to changes of the cell composition, blood rheology. The primary hemostatic disorders. Clinical manifestations and diagnosis of thrombophilia. The principles of treatment.

Differential diagnosis of hemorrhagic diathesis. Transfusion of blood products in therapeutic practice

The main types of hemorrhagic diathesis. Causes of thrombocytopenia. Diagnosis and differential diagnosis. Components of blood: red cells, white blood cells concentrate, platelet concentrates, plasma. Blood products: Preparations of complex action (albumin protein); correctors of the hemostatic system (cryoprecipitate, prothrombin complex, fibrinogen, thrombin, fibrinolizin, hemostatic sponge for local application); means of immunological actions ( $\gamma$ -globulins, immunoglobulins - tetanus, influenza, Rh, antistaphylococcal et al.). Blood-substituting solutions. Terms of storage of blood products and components. Transfusion of blood components. Criteria for assessing the condition of the patient during and after the blood transfusion. Transfusion reactions and complications. Prevention of complications.

# LIST OF ISSUES FOR THE STATE EXAMINATION

## Section I

### General questions

Problems of medical ethics and medical deontology in the practice of a physician.

Extragenital diseases and pregnancy: contraindications for pregnancy, therapeutic approach to pregnant women with hypertension, valvular heart disease, glomerulonephritis.

The main nosological forms of internal diseases

### **RESPIRATORY SYSTEM DISEASES**

Acute and chronic (non-obstructive) bronchitis: etiology, pathogenesis, clinical manifestations, diagnostics, clinical variants, complications, treatment.

Pneumonia: etiology, pathogenesis, basic clinical manifestations, diagnostics, classification, severity, complications. Basic treatment strategies.

Pneumonia caused by atypical pathogens: clinical peculiarities, diagnostics, treatment.

Chronic obstructive lung disease: background characteristic, etiology and pathogenesis, risk factors, diagnostics, stages of disease, treatment, complications, prophylaxis.

Asthma: etiology, pathogenesis, basic clinical manifestations, clinical variants, diagnostics, complications, treatment principles.

Pleural diseases and pleural effusion: etiology, pathogenesis, basic clinical manifestations, diagnostics, differential diagnostics between exudate and transudate, treatment principles.

Pulmonary heart, acute and chronic: etiology, pathogenesis, basic clinical manifestations, diagnosis, classification, principles of treatment.

### **CARDIOVASCULAR SYSTEM DISEASES**

Ischemic heart disease: etiology, pathogenesis, risk factors, classification, prophylaxis.

Clinical forms of angina pectoris, diagnostics, patient management, treatment principles.

Myocardial infarction: etiology, pathogenesis, clinical variants (typical and atypical). Myocardial infarction diagnostics. Patient management, treatment principles. Complications of myocardial infarction.

Arterial hypertension: etiology, pathogenesis, clinical manifestations, classification, diagnostics, risk stratification, treatment principles.

Symptomatic hypertension: classification, diagnostics, treatment strategies.

Myocarditis: etiology, pathogenesis, classification, clinical manifestations, diagnostics, treatment principles.

Cardiomyopathy: definition, classification, clinical variants, diagnostics, treatment principles.

Pericarditis: etiology, pathogenesis, classification, clinical manifestations, diagnostics, treatment principles.

Infective endocarditis: etiology, pathogenesis, diagnostic criteria, classification, clinical picture, diagnosis verification methods. Indications for cardiosurgical treatment or pharmacological therapy. Basic principles of antibacterial therapy.

Chronic heart failure: etiology, pathogenesis, basic clinical manifestations, classification, diagnostics, treatment principles.

Cardiac tachyarrhythmia: classification. Antiarrhythmic drugs.

Atrial fibrillation and flutter: etiology, pathogenesis, diagnosis, management, principles of drug therapy, radiofrequency catheter ablation of the heart.

Bradyarrhythmia. Heart blocks: etiology, pathogenesis, clinical manifestations, diagnostics, prognosis, treatment principles. Indications for pacemaker therapy.

Interventional and cardiosurgical technologies in cardiovascular diseases: criteria of patient selection for coronary angiography, indications for interventions. Catheter technologies in the treatment of coronary heart disease, acquired heart valve disease.

## **DISEASES OF THE DIGESTIVE TRACT**

Gastroesophageal reflux disease: pathogenesis, clinical manifestations, diagnostics, treatment principles.

Functional dyspepsia and chronic gastritis: cause of pathology, clinical manifestations, classification, diagnostics, treatment principles.

Gastroduodenal ulcer disease: etiology, pathogenesis, clinical manifestations, diagnostics, treatment strategies.

Chronic cholecystitis: etiology, clinical manifestations, diagnostics, treatment principles.

Chronic hepatitis: etiology, pathogenesis, classification, basic clinical and biochemical syndromes, diagnostics, treatment principles.

Liver cirrhosis: etiology, classification, morphological characteristic, clinical laboratory syndromes, diagnostics, complications, treatment principles.

Chronic pancreatitis: etiology, pathogenesis, clinical variants, diagnostics, treatment principles.

Irritable bowel syndrome. Basic clinical manifestations, diagnostics, treatment principles.

Bowel inflammatory diseases (Chron's disease, ulcerative colitis). Basic clinical syndromes, diagnostics, treatment principles.

## **RENAL DISEASES**

Acute glomerulonephritis: etiology, pathogenesis, clinical variants, diagnostics, treatment principles.

Chronic glomerulonephritis: etiology, pathogenesis, clinical and morphological variants, diagnostics, outcomes, treatment principles.

Tubulointerstitial nephritis: cause of development, clinical manifestations, diagnostics, treatment.

Chronic pyelonephritis: etiology, pathogenesis, clinical manifestations, diagnostics, treatment strategies.

Renal amyloidosis: etiology, pathogenesis, clinical manifestations, diagnostics, outcomes, treatment strategies.

Nephrotic syndrome: etiology, clinical and laboratory criteria, treatment.

Chronic kidney disease: classification, diagnostics. Treatment strategies according to the stage.

## **RHEUMATIC DISEASES**

Acute rheumatic fever: etiology, pathogenesis, clinical manifestations, diagnostics, treatment, prevention.

Mitral valve disease: etiology, hemodynamic compromise, clinical manifestations, treatment strategies, indications for surgery.

Aortic valve disease: etiology, hemodynamic compromise, clinical manifestations, treatment strategies, indications for surgery.

Osteoarthritis: etiology, pathogenesis, classification, clinical manifestations, diagnostics, disease course, treatment.

Rheumatoid arthritis: etiology, pathogenesis, classification, disease course, treatment.

Gout: etiology, pathogenesis, clinical manifestations, classification, diagnostics, disease course, treatment.

System lupus erythematosus: etiology, pathogenesis, clinical manifestations, diagnostics, disease course, treatment.

Dermatomyositis: etiology, pathogenesis, clinical manifestations, diagnostics, disease course, treatment.

Systemic sclerosis: etiology, pathogenesis, basic clinical manifestations, diagnostics and treatment principles.

Systemic vasculitis: main nosological entities, diagnostics and treatment principles.

Reactive arthritis: etiology, clinical manifestations, diagnostics, treatment.

Spondyloarthritis: basic forms, clinical manifestations, diagnostics, treatment.

## **BLOOD SYSTEM DISEASES**

Anemia: etiology, pathogenesis, classification, clinical manifestations, diagnostics, treatment principles.

Leukemia: etiology, pathogenesis, classification, clinical manifestations, diagnostics, treatment principles.

Polycythaemia vera: etiology, pathogenesis, clinical manifestations, diagnostics, treatment principles, prognosis. Secondary polycythaemia.

Multiple myeloma: clinical manifestations, diagnostics, treatment.

Hemorrhagic diathesis: etiology, pathogenesis, classification. Clinical manifestations and treatment of thrombocytopenic purpura.

## **Section II**

### **Special issues of internal diseases**

#### **METABOLIC AND ENDOCRINE SYSTEM DISEASES**

Classification and diagnosis of diabetes mellitus. Etiology, pathogenesis, diagnosis, treatment of type 1 diabetes mellitus.

Etiology, pathogenesis, clinical manifestations, diagnosis, treatment and prevention of type 2 diabetes mellitus.

Metabolic syndrome: Definition, modern concept of pathogenesis, main clinical manifestations, treatment approaches.

Chronic complications of diabetes: microangiopathy (diabetic retinopathy, diabetic nephropathy), macroangiopathy (diabetic foot syndrome), polyneuropathy.

Urgent states in diabetes (hypoglycemic and hyperglycemic coma): causes, pathogenesis, clinical manifestations, treatment.

Diffuse toxic goiter (Graves-Basedow disease): etiology, pathogenesis, clinical manifestations, diagnosis, treatment principles, indications for surgical treatment.

Nodal goiter: etiopathogenesis, clinical manifestations, diagnosis, treatment and prevention.

Hypothyroidism: classification, etiology, pathogenesis, clinical manifestations, diagnosis, principles of replacement therapy.

Hyperparathyroidism: classification, etiology, pathogenesis, clinical manifestations, diagnosis, treatment principles.

Primary and secondary hyperaldosteronism: etiology, pathogenesis, clinical manifestations, diagnosis, treatment.

Chronic adrenal insufficiency: etiology, pathogenesis, clinical manifestations, diagnosis, complications, course, treatment.

Hypercorticism: etiology, pathogenesis, clinical manifestations, diagnosis, complications, course, treatment.

Pheochromocytoma: pathogenesis of major clinical manifestations, symptoms, diagnosis, treatment.

Obesity: etiology, types of obesity, severity, treatment and prevention.

#### **CLINICAL IMMUNOLOGY, ALLERGOLOGY**

Autoimmune diseases: pathogenesis, clinical manifestations. Pathogenetic (basic) therapy of autoimmune diseases.

Laboratory methods for diagnostics of autoimmune diseases. Immunocorrectors.

Clinical and laboratory diagnostics of immunodeficiency.

The role of testing for HLA-antigens in the diagnosis of internal diseases.

Types of allergic reactions. Pseudoallergy. Paraclinical methods of diagnostics of allergy.

Nosological forms associated with specific types of allergic reactions. Specific desensitization in allergic diseases.

Side effects of drugs: etiology, pathogenesis, classification, clinical manifestations and course, treatment.

## **PHTHISIOPULMONOLOGY**

Organization of the internist work on early detection and prevention of tuberculosis among the population.

Methods of examination of patients with suspected tuberculosis of the respiratory system. Required diagnostic minimum, additional methods of examination.

Methods of bacteriological diagnostics of tuberculosis. Patient examination for the detection of mycobacterium tuberculosis.

Differential diagnosis of infiltrative tuberculosis with other lung diseases (pneumonia, lung cancer, complicated lung atelectasis, infarct-pneumonia).

Differential diagnosis of focal tuberculosis and tuberculosis with other rounded formations in the lungs (lung tumors, abscess, filled cyst, "globular" pneumonia).

Differential diagnosis of disseminated tuberculosis with other pulmonary dissemination (sarcoidosis, carcinomatosis, alveolitis, silicosis).

Differential diagnosis of cavernous and fibrous-cavernous tuberculosis with other cavities in the lungs (abscess, lung cancer, aspergilloma, congenital cyst).

Caseous pneumonia. Clinical picture, diagnostics, differential diagnostics and treatment.

Miliary tuberculosis of the lungs. Clinical picture, diagnostics, differential diagnostics and treatment.

Tuberculous pleurisy. Clinic, diagnosis, differential diagnosis and treatment.

Tuberculous meningitis. Clinical picture, diagnostics, differential diagnostics and treatment.

Sarcoidosis. Etiology, pathogenesis, classification of clinical forms.

Sarcoidosis of the respiratory system. Clinic, diagnosis, differential diagnosis and treatment.

Modern principles and methods of treatment of tuberculosis.

Current international strategies for the fight against tuberculosis.

HIV-associated tuberculosis, clinical picture, diagnostics, treatment and prevention.



Multi-drug-resistant tuberculosis (definition, tactics of treatment).

### **Section III**

## **EMERGENCY AND URGENT CONDITIONS AND MEDICAL CARE AT THEIR OCCURANCE**

Emergency help for asthmatic status (acute severe asthma).

Acute respiratory failure: causes, diagnostics, differential therapy.

Emergency care for an attack of asthma. Tactics of a general practitioner with an unrestrained attack.

Diagnostics and emergency treatment of spontaneous pneumothorax.

Emergency care for hemoptysis and urgent care for pulmonary hemorrhage.

Acute coronary syndrome with ST segment elevation: organizational and diagnostic activities at prehospital stage, emergency medical care, choice of reperfusion method (prehospital thrombolysis, primary percutaneous intervention, pharmacological interventions).

Non-ST-segment elevation acute coronary syndrome: pre-hospital organizational and diagnostic measures, urgent medical care.

Urgent measures in case of intractable chest pain syndrome.

Sudden cardiac death: medical emergency.

Hypertensive crisis urgent medical care in the outpatient setting and in hospital.

Paroxysm of atrial fibrillation: a clinic, diagnostics, emergency measures in an outpatient setting and inpatient treatment.

Emergency treatment for acute left ventricular failure.

Diagnosis of aortic aneurysm stratification, emergency medical care.

Emergency medical care for pulmonary edema (cardiogenic and noncardiogenic).

Diagnostics and urgent therapy of pulmonary embolism.

Emergency medical care for a paroxysmal wide QRS complex tachycardia (ventricular tachycardia).

Emergency medical care for a paroxysmal narrow QRS complex tachycardia (supraventricular tachycardia).

Emergency medical care for a complete atrioventricular block.

Diagnostics and treatment tactics at biliary colic.

Diagnostics and urgent measures for hepatic coma.

Diagnostics and urgent medical care for gastrointestinal bleeding.

Emergency medical care and tactics at unspecified coma.

Poisoning by alcohol and its surrogates: clinical manifestations, emergency medical care.

Acute adrenal insufficiency: diagnostics, treatment principles and urgent medical care.

Acute kidney injury: diagnosis, emergency therapy.

Uremic coma: clinic, diagnostics, emergency medical care.

Diagnostics and urgent measures for agranulocytosis.  
 Emergency therapy for hypoglycemic coma.  
 Emergency therapy for hyperglycemic coma.  
 Anaphylactic shock: diagnosis, emergency medical care.  
 Urticaria and angioedema: urgent medical care, medical tactics.  
 Lyell's syndrome. Urgent measures.  
 Emergency medical care for acute disorders of cerebral circulation.

## Section IV

### INFECTIOUS DISEASES

Acute tonsillitis in therapeutic practice: diagnosis, differential diagnosis with diphtheria, medical tactics, treatment.

Typhoid fever, paratyphoid fever A, B. Pathogenesis, clinic, diagnosis, complications of typhoid fever, treatment.

Hepatitis A and E: epidemiology, clinic, complications, diagnosis, treatment.

Acute hepatitis B, D. Etiology, epidemiological features and clinical manifestations. Marker diagnostics, principles of treatment and prevention of post-exposure and vertical transmission of infection.

Diagnosis and treatment of complications of acute viral hepatitis. Acute liver failure.

Acute hepatitis C. Etiology, epidemiological features and clinical manifestations. Marker diagnostics, principles of treatment and prevention.

Chronic hepatitis B, D. Marker diagnostics. Natural course, approaches to therapy.

Chronic hepatitis C. Natural course, diagnosis, approaches to therapy.

Unspecified hyperbilirubinemia. Verification of diagnosis.

Definition of jaundice. Differential diagnosis of jaundice.

Meningococcal infection: clinical classification, principles of diagnosis and therapy, prevention.

Meningococcal infection: meningococcal meningitis. Clinical manifestations. Diagnostics. Treatment.

Meningococcal infection: meningococemia, clinical manifestations, diagnosis, treatment. Fulminant form of meningococemia. Intensive therapy.

Meningococcal infection: complications. Principles of therapy of infectious-toxic shock, edema-swelling of the brain.

Enterovirus infection: human enterovirus, epidemiology, pathogenesis, clinical forms, treatment.

Tick borreliosis: etiology, pathogenesis, clinical picture of the I stage of the disease, diagnosis, treatment.

Tick borreliosis: etiology, pathogenesis, clinical picture of stage II of the disease, diagnosis, treatment.

Differential diagnosis of meningitis.

Tick-borne encephalitis: clinical manifestations, diagnosis, treatment.

Herpetic infection. Classification. Epstein-Barr virus infection: clinical manifestations, diagnosis, treatment.

Herpetic infection. Classification. Localized forms of herpetic infection (Herpes labialis, herpes nasalis). Clinical manifestations, diagnosis, principles of therapy.

Herpetic infection. Classification. Localized forms of herpetic infection (Herpes zoster). Clinical manifestations, diagnosis, principles of therapy.

Herpetic infection. Varicella, cytomegalovirus infection. Clinical manifestations, diagnosis, principles of therapy.

Herpetic infection. Cytomegalovirus infection. Clinical features, diagnosis, principles of therapy.

COVID-19: etiology, clinical manifestations, diagnosis, principles of therapy.

COVID-19: Prevention.

Influenza: clinical manifestations, diagnosis, indications for etiotropic therapy, complications.

Adenovirus infection. Clinical features, approaches to diagnosis, treatment, complications. Course features of acute respiratory diseases in children and the elderly.

Foodborne infection: etiology, clinical picture. First aid for foodborne infection. Principles of therapy.

Botulism: etiology, clinical picture, diagnosis, treatment, prevention. Intensive therapy.

Pathogenetic classification of infectious diarrhea. Degrees of dehydration. Indications for the appointment of antibiotic therapy. Principles of rehydration.

Cholera: etiology, classification, clinical picture, diagnosis, complications. Principles of treatment.

Salmonellosis: clinical manifestations, diagnosis, treatment and prevention.

Shigellosis: etiology, clinical manifestations, diagnosis, treatment, prevention.

Differential diagnosis of diarrhea (infectious and non-infectious diarrhea).

Malaria: etiology, clinical picture, diagnosis, differential diagnosis, complications of malaria, treatment, prevention.

HIV infection: etiology, diagnosis, treatment, prevention. Early clinical signs of HIV infection.

Characteristics of major opportunistic infections. Clinical manifestations and treatment of neurotoxoplasmosis.

Characteristics of major opportunistic infections. Pneumocystis pneumonia. Clinical picture, diagnosis, treatment.

Clinical indications for testing for HIV infection in outpatient department.

Sepsis: etiology, pathogenesis, modern clinical classification.

Sepsis: syndrome of multiple organ failure. Septic shock.

Diagnosis and treatment of sepsis. Antibacterial therapy. Pathogenetic therapy of complicated sepsis.

Erysipelas: etiology, clinical picture, complications, diagnosis, treatment.

Tetanus: etiology, clinical picture, complications, diagnosis, principles of therapy, prevention.

Rabies: etiology, prevalence, clinical manifestations, diagnosis, prevention.

Leptospirosis: etiology, characteristics of the pathogen, epidemiology. Sources of infection and transmission routes. Clinical picture, diagnosis, treatment.

Hemorrhagic fever with kidney syndrome. Clinical picture, laboratory diagnostics, treatment.

Trichinellosis: etiology, pathogenesis, clinical picture, diagnosis, treatment.

Diphtheria in adults: etiology, pathogenesis, clinical picture, laboratory diagnostics, treatment.

Infectious-toxic, hypovolemic, anaphylactic shock. Modern approaches to emergency therapy.

Fever of unknown origin in infectious diseases.

Differential diagnosis of exanthem (meningococcal infection, measles, leptospirosis, infectious mononucleosis, Lyme-borreliosis).

Plague, anthrax: prevalence, etiology, transmission routes, clinical picture, laboratory diagnosis, treatment.

### **LIST OF (APPROXIMATE) PASSPORTS OF EXAMINATION OSCE STATIONS FOR THE STUDENTS CERTIFICATION**

1. Passport (approximate) of the examination station "Clinical interpretation of laboratory results in diseases of internal organs" of the objective structured clinical examination (OSCE) in the academic discipline "Internal diseases" for the specialty: "General medicine"

2. Passport (approximate) of the examination station "Emergency medical care for anaphylactic shock" of the objective structured clinical examination (OSCE) in the academic discipline "Internal diseases" for specialties: "General medicine"

3. Passport (approximate) of the examination station "Doctor's prescription" of the objective structured clinical examination (OSCE) in the academic discipline "Clinical pharmacology" for the specialty 1 79 01 01 "General medicine"

## INFORMATION AND METHODOLOGICAL UNIT

### Basic literature:

1. Internal medicine : textbook for English-speaking students of higher medical educational establishment. P. 1 : Cardiology. Rheumatology. Hematology / ed. by M. A. Stanislavchuk, V. K. Sierkova. – Vinnytsya : Nova Knyha, 2019. – 407p.
2. Internal medicine : textbook for English-speaking students of higher medical educational establishment. P. 2 : Pulmonology. Gastroenterology. Nephrology. Diseases of the internal organs in countries with hot climate / ed. by M. A. Stanislavchuk, V. K. Sierkova. – Vinnytsya : Nova Knyha, 2019. – 359 p.

### Additional literature:

1. Harrison`s principles of internal medicine. Vol. 1 / ed. by D. L. Longo, D. L. Kasper, J. L. Jameson [et. al]. – 20th ed. – New York [etc.] : McGrawHill Medical, 2018. – 1796 p.
2. Harrison`s principles of internal medicine. Vol. 2 / ed. by D. L. Longo, D. L. Kasper, J. L. Jameson [et. al]. – 20th ed. – New York [etc.] : McGrawHill Medical, 2018. – 3610 p.
3. Internal medicine: critical care : textbook / Babak, O. Ya. [etc.] ; ed. by O.Ya. Babak, O. M. Bilovol. – Kyiv : AUS Medicine Publishing, 2018. – 368 p.
4. Family medicine : textbook. In 3 books. Book 3. Special part. Multidisciplinary general medical practice / Babinets, Liliia Stepanivna, Bezditko, Pavlo Andriiovych, Bondar, Serhii Anatoliiovych [и др.] ; ed. by O. M. Hyrina, L. M. Pasiyeshvili, L. S. Babinets. – Kyiv : AUS Medicine Publishing, 2020. – 615 p.
5. Goodman, L. S. Goodman and Gilman`s the pharmacological basis of therapeutics / L. S Goodman, A. Gilman ; ed. : L. L. Brunton, R. Hilal-Dandan, B. C. Knollmann. 13th ed. New York : McGraw-Hill Medical, 2017. – 1808p.

**COMPILERS:**

Head of the 2nd Department  
of Internal Diseases



N.N. Maroz-Vadalazhskaya

Associate Professor, PhD

V.M.Sidzenka

Composition of the program of the state exam "Internal Diseases" in the specialty 1-79 01 01 "General Medicine" of the sub-internship profile "General Medical Practice" accompanying documents meet the established requirements.

Dean of the Medical Faculty  
for Foreign Students



O.S.Ishutin

24 04 2024