MINISTRY OF HEALTH OF THE REPUBLIC OF BELARUS
Educational Institution
«BELARUSIAN STATE MEDICAL UNIVERSITY»

Контрольный экземпляр

APPROVED
by Rector of the Educational Institution «Belarusian State Medical University»
_____ S.P.Rubnikovich
25.06.2026
Reg. # UD-0911-01-60/2627/edu.

INTERNAL DISEASES

Curriculum of the educational institution in the academic discipline for the specialty

7-07-0911-01 «General Medicine»

2026

Curriculum is based on the educational program «Internal Diseases», approved 25.06.2026, registration # УД-0911-01-60/2627/уч.; on the educational plan in the specialty 7-07-0911-01 «General Medicine», approved 15.04.2026, registration # 7-07-0911-01/2627/mf

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RECOMMENDED FOR APPROVAL:

by the Department of Internal Medicine, Gastroenterology and Nutrition with training and advanced training courses of the Educational Institution «Belarusian State Medical University»
(protocol # 15 of 17.04.2026);

by the Department of Internal Diseases, Cardiology and Rheumatology with a course of advanced training and retraining of the Educational Institution «Belarusian State Medical University»
(protocol # 10 of 06.04.2026);

by the Department of Cardiology and Internal Medicine of the Educational Institution «Belarusian State Medical University»
(protocol # 14 of 17.04.2026);

by the Scientific and Methodological Council of the Educational Institution «Belarusian State Medical University»
(protocol # 10 of 25.06.2026)

EXPLANATORY NOTE

«Internal Diseases» – the academic discipline of the module «Internal Diseases», which contains systematized scientific knowledge about etiology, pathogenesis, semiotics, diagnosis, prognosis and prevention of diseases of internal organs of man.

The aim of the academic discipline «Internal Diseases» is the formation of specialized competencies for the construction of clinical diagnosis, providing medical care, medical prevention of diseases of human internal organs.

The objectives of the academic discipline «Internal Diseases» are to form students' scientific knowledge about etiology, pathogenesis, clinical picture, diagnosis, principles of treatment, prevention of major diseases of internal organs, skills and abilities necessary for:

patient exams;

interpretation of the results of laboratory and instrumental methods of research;

building a diagnosis;

prescribing treatment;

medical prevention.

Relations to other academic disciplines

The knowledge, skills and abilities acquired during the study of the academic discipline «Internal Diseases», are necessary for the successful study of academic disciplines: «Clinical Immunology and Allergology», «Occupational Diseases», modules: «Therapy Module 2», «Therapeutic Module 3», academic disciplines of the «Therapy» Module of the sub-residency.

Studying the academic discipline «Internal Diseases» should ensure the formation of students' specialized professional competencies: provide primary and specialized medical care in cases of internal organs pathology, including urgent and life-threatening conditions, occupational diseases.

As a result of studying the academic discipline «Internal Diseases» the student should

know:

etiology, pathogenesis, clinical picture, diagnosis, principles of treatment and prevention of the most common diseases of internal organs of the adult population;

rules of medical ethics and deontology;

normative legal acts regulating the provision of medical care for diseases of human internal organs;

be able to:

examine the patient and assess the identified changes in various organs and organ systems;

interpret the results of examination (clinical and biochemical tests, electrocardiogram, spirometry, bicycle ergometry, daily monitoring of blood pressure and electrocardiogram, bronchoscopy and esophagogastroscopy, X-ray examination);

choose the treatment tactics;

prescribe individual pharmacological treatment taking into account the mechanism of action, pharmacokinetics and pharmacodynamics of drugs, prevention of their undesirable side effects, possible interaction with concomitant administration

of other drugs;

work with medical documentation, complying with the Law of the Republic of Belarus «On Personal Data Protection», draw up a medical record of an inpatient patient;

provide medical care for the most common critical conditions encountered in practice;

give recommendations to the patient on primary prevention, healthy lifestyle, taking into account the state of his/her health;

use educational, scientific and reference literature;

ensure epidemiological safety in the provision of medical care;

master:

skills in interviewing a patient with internal organ disease;

skills of objective examination of patients;

skills in clinical interpretation of laboratory results;

skills of clinical interpretation of instrumental methods of investigation;

indirect cardiac massage skills;

skills of artificial ventilation (with Ambu bag, mouth-to-mouth).

Total number of hours for the study of the academic discipline is 394 academic hours, of which 257 classroom hours and 137 hours of student independent work. Classroom hours according to the types of studies: lectures – 48 hours (including 18 hours of supervised student independent work (SSIW)), practical classes – 209 hours.

Intermediate certification is carried out on the module «Internal Medicine» (academic disciplines «Clinical Immunology, Allergology», «Occupational Diseases») and on the academic discipline.

Intermediate certification on the module: credit (9 semester) and exam (10 semester), intermediate certification on the academic discipline: credit (7 semester) and exam (8 semester).

Form of higher education – full-time.

ALLOCATION OF ACADEMIC TIME ACCORDING TO SEMESTERS OF STUDY

Code, name of the specialty	Semester	Total number of academic hours	Number of classroom hours				Out-of-class self-studies	Form of intermediate assessment
			Number of classroom hours	including				
				class lectures	SSIW	practicals		
7-07-0911-01 «General Medicine»	7	138	93	9	6	78	45	credit
	8	112	75	9	6	60	37	examination
	9	64	45	6	3	36	19	credit
	10	80	44	6	3	35	36	examination
Total hours		**394**	**257**	**30**	**18**	**209**	**137**	

THEMATIC PLAN

Name of section (topic)	Number of class hours	
	lectures (incl. SSIW)	practical
1. Respiratory diseases	**6**	**30**
1.1. Acute and chronic bronchitis. Chronic obstructive pulmonary disease	1,5	6
1.2. Bronchial asthma	1,5	6
1.3. Pneumonias	1,5	6
1.4. Pleural effusion. Pneumonic diseases of the lungs. Bronchiectasis	-	6
1.5. Pulmonary embolism. Pulmonary hypertension. Core pulmonale	1,5	6
2. Cardiovascular diseases	**15**	**60**
2.1. Arterial hypertension	1,5	6
2.2. Secondary hypertension	-	6
2.3. Atherosclerosis. Coronary artery disease. Angina pectoris	1,5	6
2.4. Acute coronary syndrome. Myocardial infarction	1,5	6
2.5. Complications of myocardial infarction	1,5	6
2.6. Cardiomyopathies. Myocarditis	3	6
2.7. Pericarditis	-	
2.8. Infective endocarditis	1,5	6
2.9. Arrhythmias and conduction disorders	3	12
2.10.Circulatory insufficiency (syncope, collapse, shock, acute and chronic heart failure)	1,5	6
3. Digestive diseases	**7,5**	**42**
3.1. Esophagitis. Gastroesophageal reflux disease. Functional diseases of the esophagus	1,5	6
3.2. Functional dyspepsia. Chronic gastritis. Gastroduodenal ulcers	1,5	6
3.3. Enteropathies. Celiac disease	1,5	6
3.4. Diseases of the large intestine. Irritable bowel syndrome	1,5	6
3.5. Functional biliary disorders. Chronic pancreatitis	-	6
3.6. Chronic hepatitis. Steatosis of the liver. Gilbert's syndrome	1,5	6
3.7. Cirrhoses of the liver. Hemochromatosis. Wilson-Conovalov disease	3	6
4. Diseases of the musculoskeletal system and connective tissue	**7,5**	**36**
4.1. Acute rheumatic fever. Chronic rheumatic heart disease	1,5	6

Name of section (topic)	Number of class hours	
	lectures (incl. SSIW)	practical
4.2. Acquired heart defects. Mitral valve prolapse	1,5	6
4.3. Joint diseases. Rheumatoid arthritis	1,5	6
4.4. Osteoarthritis. Gout		6
4.5. Systemic lupus erythematosus. Systemic sclerosis. Dermatomyositis/polymyositis	1,5	6
4.6. Systemic vasculitis	1,5	6
5. Diseases of kidneys and urinary tract	**4,5**	**18**
5.1. Acute and chronic glomerulonephritis	1,5	6
5.2. Urinary tract infections. Tubulointerstitial nephritis	1,5	6
5.3. Nephrotic syndrome. Renal amyloidosis. Chronic kidney disease and chronic renal failure	1,5	6
6. Diseases of the blood system	**4,5**	**23**
6.1. Anemias	1,5	6
6.2. Hemorrhagic diatheses	-	6
6.3. Hemoblastoses. Acute leukemia. Agranulocytosis	1,5	5
6.4. Chronic leukemia		6
6.5. True polycythemia. Multiple myeloma	1,5	
Total hours	**48**	**209**

CONTENT OF THE ACADEMIC DISCIPLINE

1. Respiratory diseases

1.1. Acute and chronic bronchitis. Chronic obstructive pulmonary disease

Actual issues of medical ethics and deontology. Principles of forming the personality of a medical worker. The main models of building communications «doctor-patient».

Acute and chronic bronchitis: definition, prevalence, etiology, pathogenesis, clinical manifestations, diagnosis and differential diagnosis, treatment and medical prevention.

Chronic obstructive pulmonary disease (COPD): definition, epidemiology, risk factors. Pathogenesis of COPD. The modern concept of COPD (GOLD), developed by the World Health Organization (WHO). Clinical manifestations and variants of COPD course (assessment of dyspnea severity, severity of exacerbation). Extrapulmonary manifestations of COPD. Instrumental methods of research in COPD (spirometry, bodyplethysmography, diffusion capacity of the lungs), severity degree (I-IV) bronchial patency disorders, differential diagnosis. Complications of COPD. Principles of patient management in stable course and in COPD exacerbation: bronchodilator treatment (change of doses, frequency and method of drug administration), oxygen therapy, use of antibacterial treatment in case of infectious episode, use of glucocorticoid drugs, including in combination with long-acting β_2 -agonists and m-choline blockers, phosphodiesterase-4 inhibitor, respiratory support.

Curation of patients with COPD: collection of complaints and history of the disease; objective examination; drawing up an examination plan; interpretation of the results of laboratory and instrumental methods of examination; making a diagnosis; drawing up a treatment plan.

1.2. Bronchial asthma

Bronchial asthma: definition, etiology, risk factors, pathogenesis, classification, clinical manifestations. Global strategy for the treatment and prevention of bronchial asthma developed by WHO (GINA). Diagnosis of different forms of asthma: with predominance of allergic component, non-allergic, mixed, unspecified. The role of spirometry, pycfloumetry, bodiplasmography in establishing the variability of symptoms and lung function indices. Identification of allergies. Asthmatic status: diagnostic criteria, treatment. Tactics of treatment of patients depending on the severity of asthma at the beginning of the disease and on the degree of control over the disease during its development and course (in controlled, partially controlled, uncontrolled asthma). Inhalation treatment of asthma, types of inhalers. The use of nebulizers. Prevention of bronchial asthma. Prognosis in bronchial asthma.

Curation of patients with bronchial asthma: collection of complaints and history of the disease; objective examination; drawing up an examination plan; interpretation of the results of laboratory and instrumental methods of examination; making a diagnosis; drawing up a treatment plan.

1.3. Pneumonias

Pneumonias: definition, prevalence, etiology (bacterial, viral, caused by atypical pathogens, fungal pneumonias), predisposing factors, pathogenesis, classification, pathways of entry of the pathogen.

Health care-associated pneumonias. Ensuring epidemiological safety in the provision of medical care.

Clinical manifestations of pneumonia, criteria of severity. Clinical features of the course of pneumonia depending on the type of pathogen and the state of the immune system. Verification of the causative agent of pneumonia (microbiological, immunological methods). Laboratory, instrumental, radiologic methods of examination in pneumonia. Differential diagnosis of pneumonia. Complications of pneumonia. Emergency conditions in pneumonia: acute respiratory failure (acute respiratory distress syndrome), acute vascular failure, acute kidney damage, infectious toxic shock, acute psychosis, DIC (Disseminated Intravascular Coagulation), diagnosis, management tactics. Treatment of pneumonia: indications for hospitalization, antibacterial treatment, staged antibacterial treatment, criteria for the effectiveness of antibacterial treatment, antiviral drugs, anti-inflammatory drugs, symptomatic treatment. Criteria for recovery and discharge from the hospital organization. Prognosis, outcomes of pneumonia. Prevention of pneumonia.

Curation of patients with pneumonia: collection of complaints and history of the disease; objective examination; drawing up an examination plan; interpretation of the results of laboratory and instrumental methods of examination; making a diagnosis; drawing up a treatment plan.

1.4. Pleural effusion. Pneumonic diseases of the lungs. Bronchiectasis

Pleural effusion: etiology and pathogenesis. Clinical and laboratory signs of exudate and transudate. Classification of pleurisy. Clinical manifestations, diagnosis, course of pleural effusion. Indications and technique of pleural cavity puncture. Laboratory evaluation of pleural effusion, differential diagnosis. Complications and outcomes in pleural effusion. Treatment of pleural effusion, indications for surgical treatment. Prevention of pleural effusion.

Nignoid lung diseases: definition, classification. Acute infectious destructions: abscess and gangrene. Risk factors for the development of suppurative lung diseases. Etiology of abscesses and gangrene of the lungs. Clinical manifestations and diagnosis of acute and chronic lung abscess, mediastinum, lung gangrene. Differential diagnosis of lung abscess with tuberculous caverns, bronchiectasis, suppurative cysts and hypoplasia, pleural empyema, mycotic suppuration, cavitary forms of cancer. Complications of suppurative lung diseases. Principles of therapeutic methods of treatment of suppurative lung diseases, indications for surgical treatment. Outcomes of suppurative lung diseases, prognosis. Prevention of suppurative lung diseases.

Hemoptysis and pulmonary hemorrhage: clinical manifestations, diagnosis, therapeutic and diagnostic fibrobronchoscopy, conservative treatment.

Bronchiectasis: definition, etiology and pathogenesis, predisposing factors. Identification of hereditary diseases with the formation of bronchiectasis. Clinical manifestations of bronchiectasis. The main methods of diagnostics of bronchiectasis: chest radiography, computed tomography (CT), magnetic resonance imaging (MRI), bronchoscopy, bronchography. Complications of bronchiectasis: pulmonary and extrapulmonary. Conservative treatment of bronchiectasis: antibacterial (in case of suppuration), postural drainage, sanation bronchoscopy, improvement of mucociliary transport, correction of immune disorders, oxygen therapy, physical therapy. Indications for surgical treatment in bronchiectasis. Prognosis in bronchiectasis.

Curation of patients with pleural effusion, suppurative lung diseases: collection of complaints and history of the disease; objective examination; drawing up an examination plan; interpretation of the results of laboratory and instrumental methods of examination; making a diagnosis; drawing up a treatment plan.

1.5. Pulmonary embolism. Pulmonary hypertension. Core pulmonale

Pulmonary embolism: predisposing factors for venous thromboembolism, causes and mechanisms of development, classification, clinical presentation, diagnosis, differential diagnosis, emergency medical care. Assessment of clinical (pre-test) probability, pulmonary embolism severity and the risk of early death. Acute-phase treatment of low-, intermediate- or high-risk pulmonary embolism. Primary and secondary prevention of pulmonary embolism.

Pulmonary hypertension: definitions, mechanisms of development, risk factors. Classification: pulmonary arterial hypertension; pulmonary hypertension associated with left heart disease; pulmonary hypertension associated with lung diseases and/or hypoxia; pulmonary hypertension associated with chronic pulmonary artery obstruction; pulmonary hypertension with unclear and/or multifactorial mechanisms. Pulmonary hypertension diagnosis: electrocardiogram, echocardiography and abdominal ultrasound, chest radiography, pulmonary function tests, ventilation/perfusion lung scan,

non-contrast and contrast-enhanced chest computed tomography examinations, cardiac magnetic resonance imaging, right heart catheterization. Laboratory tests in pulmonary hypertension diagnosis. Severity and risk assessment in pulmonary hypertension. Complications of pulmonary hypertension. Principles of treatment of pulmonary hypertension (general, maintenance, initial, specific, combined treatment, surgical methods of treatment). Outcomes and prognosis of pulmonary hypertension.

Core pulmonale: definition, causes and mechanisms of development of acute and chronic core pulmonale, classification, clinical signs, laboratory and instrumental methods of diagnostics, principles of medical treatment, outcomes, prognosis, prevention.

Curation of patients with pulmonary embolism, pulmonary hypertension, chronic core pulmonale: collection of complaints and anamnesis of the disease; physical examination; preparation of the examination plan; interpretation of the obtained laboratory and instrumental data; making diagnosis; making treatment plan.

2. Cardiovascular diseases

2.1. Arterial hypertension

Classification of office blood pressure and definitions of hypertension grades.

Medical and social significance of arterial hypertension. Definition of hypertension. Classification of hypertension. Principles of primary hypertension pathophysiology. Hypertension and total CV risk assessment (risk factors, hypertension-mediated organ damage, established cardiovascular and kidney disease). The work-up in patients with suspected or established hypertension. Treatment of hypertension: lifestyle interventions and antihypertensive drug treatment. Drug classes for BP-lowering therapy. Antihypertensive drug combinations. The polypill concept. Device-based treatment of hypertension. Target blood pressure levels in patients with hypertension. Complications of hypertension. Prognosis for hypertension. Prevention of hypertension.

Classification of hypertension disorders in pregnancy. Hypertension management in pregnancy

Hypertensive urgencies and emergencies: definitions, classification, clinical manifestations of various options, basic principles of treatment (relief of crises).

Curation of patients with hypertension: collection of complaints and anamnesis of the disease; physical examination; preparation of the examination plan; interpretation of the obtained laboratory and instrumental data; making diagnosis; making treatment plan.

2.2. Secondary hypertension

Causes of secondary hypertension. Pathogenesis of increased blood pressure in various types of secondary hypertension. Features of clinical manifestations, diagnosis and differential diagnosis of symptomatic hypertension. Therapeutic tactics for symptomatic hypertension.

Curation of patients with pulmonary embolism, pulmonary hypertension, chronic core pulmonale: collection of complaints and anamnesis of the disease; physical examination; preparation of the examination plan; interpretation of the obtained laboratory and instrumental data; making diagnosis; making treatment plan.

2.3. Atherosclerosis. Coronary artery disease. Angina pectoris

Atherosclerosis. Etiology and pathogenesis of atherosclerosis. Formation of atherosclerotic plaque. Risk factors of atherosclerotic cardiovascular disease. Types of hyperlipidemias. Clinical manifestations and diagnosis of atherosclerosis depending on its predominant localization (aorta, heart vessels, brain, limbs, kidneys, intestines). Methods for visualizing atherosclerotic lesions: ultrasound, computed tomography, magnetic resonance imaging, coronary angiography. Drugs for treatment of dyslipidaemias. Principles of treatment of atherosclerosis: non-pharmacological and pharmacological treatment. Primary and secondary prevention of atherosclerosis. Assessment of general cardiovascular risk and a differentiated approach to the prescription of lipid-lowering treatment. Indications for surgical treatment of atherosclerosis.

Coronary artery disease (CAD). Medical and social significance of the problem of CAD. Etiology and pathogenesis CAD. CAD classification. The concept of chronic coronary syndromes. Instrumental methods for diagnosing coronary heart disease: electrocardiography (ECG), echocardiography, radiation methods, coronary angiography. The role of stress testing in the diagnosis of coronary artery disease. Definition of «sudden cardiac death». Algorithm for cardiopulmonary resuscitation during circulatory arrest. High-tech methods of surgical treatment of coronary artery disease: aorto-, mammary-coronary bypass surgery, angioplasty and stenting of coronary arteries. Prognosis for CAD. Prevention of CAD.

Angina pectoris. Classification of angina pectoris. Pathogenesis and the characteristics of discomfort related to myocardial ischaemia (angina pectoris). Grading of effort angina severity according to the Canadian Cardiovascular Society. Atypical clinical manifestations of angina pectoris. Silent myocardial ischemia. Vasospastic angina. Microvascular angina. Differential diagnosis of angina pectoris. Principles of treatment of angina pectoris. Anti-ischaemic drugs in patients with chronic coronary syndromes. Immediate relief of effort angina. Organizational and therapeutic tactics for stable and unstable angina, possible outcomes. Indications for coronary angiography for angina pectoris, indications for interventional and surgical treatment methods for chronic coronary syndromes.

Curation of patients with chronic coronary syndromes: collection of complaints and anamnesis of the disease; physical examination; preparation of the examination plan; interpretation of the obtained laboratory and instrumental data; making diagnosis; making treatment plan.

2.4. Acute coronary syndrome. Myocardial infarction

Acute coronary syndrome (ACS): definition, clinical manifestations, diagnosis, classification, treatment tactics for ACS with/without ST segment elevation. Acute pharmacotherapy in ACS. Selection of invasive strategy and reperfusion therapy (invasive strategy, fibrinolysis and pharmaco-invasive strategy). Indications and contraindications of fibrinolysis in ACS, signs of successful reperfusion.

Myocardial infarction (MI): definition, etiology and pathogenesis, classification. Typical and atypical clinical variants of MI, MI severity classes, periods of MI. Electrocardiographic diagnosis of MI: by depth of lesion, localization, periods. Biomarker of cardiomyocyte injury. Instrumental diagnostics of MI. Differential diagnosis of MI. Principles of treatment of MI: pain relief, reperfusion of the infarct-

related artery, antithrombotic treatment, limiting the area of ischemic damage, prevention of complications. Emergency medical care for complications of myocardial infarction. Indications for surgical treatment of MI. Principles of physical and mental rehabilitation of patients after MI. Prognosis for MI, primary and secondary prevention of MI.

Curation of patients with myocardial infarction: collection of complaints and anamnesis of the disease; physical examination; preparation of the examination plan; interpretation of the obtained laboratory and instrumental data; making diagnosis; making treatment plan.

2.5. Complications of myocardial infarction

Complications of myocardial infarction (MI) in acute and subacute periods. Classification of acute heart failure according to Killip. Acute left ventricular failure: clinical picture, treatment and diagnostic tactics. Cardiogenic shock: diagnostic criteria, classification, treatment and diagnostic tactics. Arrhythmias (supraventricular and ventricular tachyarrhythmias, conduction disturbances): diagnostic and treatment tactics. Left ventricular aneurysm: diagnosis, treatment tactics. Left ventricular thrombus, thromboembolic complications. Mechanical complications of MI (rupture of the interventricular septum, free wall of the left ventricle, papillary muscle with the development of acute mitral regurgitation): clinical signs, diagnostic and treatment tactics. Post-acute coronary syndrome pericarditis (early infarct-associated pericarditis, late pericarditis or post-cardiac injury (Dressler) syndrome and pericardial effusion): diagnostics, treatment tactics.

Curation of patients with myocardial infarction: collection of complaints and anamnesis of the disease; physical examination; preparation of the examination plan; interpretation of the obtained laboratory and instrumental data; making diagnosis; making treatment plan.

2.6. Cardiomyopathies. Myocarditis

Cardiomyopathy: definition, etiology, pathogenesis, disorders of intracardiac hemodynamics in patients with dilated, hypertrophic, restrictive cardiomyopathy. Main clinical syndromes in cardiomyopathies. Instrumental methods of diagnosis of cardiomyopathy: ECG, echocardiography, magnetic resonance imaging, radionuclide techniques, myocardial biopsy Principles of treatment of cardiomyopathies, indications for surgical treatment. Prognosis for cardiomyopathies.

Myocarditis: definition, etiology and pathogenesis, classification, pathomorphology, clinical manifestations, instrumental and laboratory diagnosis. Indications for endomyocardial biopsy. Diagnostic criteria for “clinically suspected” myocarditis. Differential diagnosis of myocarditis. Complications of myocarditis. Principles of treatment of myocarditis. Outcomes and prognosis for myocarditis.

Curation of patients with cardiomyopathies, myocarditis: collection of complaints and anamnesis of the disease; physical examination; preparation of the examination plan; interpretation of the obtained laboratory and instrumental data; making diagnosis; making treatment plan.

2.7. Pericarditis

Pericarditis: definition, etiology and pathogenesis, classification, clinical manifestations. Diagnosis of acute pericarditis. Principles of treatment of pericarditis.

Complications of pericarditis. Cardiac tamponade. Indications for pericardial puncture and surgical treatment of pericarditis. Constrictive pericarditis. Outcomes and prognosis for pericarditis.

Curation of patients with pericarditis: collection of complaints and anamnesis of the disease; physical examination; preparation of the examination plan; interpretation of the obtained laboratory and instrumental data; making diagnosis; making treatment plan.

2.8. Infective endocarditis

Infective endocarditis (IE): definition, epidemiology, etiology and pathogenesis, classification, pathomorphology, main clinical manifestations. Diagnostic algorithm and differential diagnosis of IE. Diagnostic criteria for IE. Complications of IE.

Pharmacological treatment of IE (etiotropic, pathogenetic and symptomatic), criteria for cure. Prognosis for IE. Indications for early surgical treatment of IE.

Populations at risk of infective endocarditis. Infective endocarditis prevention.

Curation of patients with infective endocarditis: collection of complaints and anamnesis of the disease; physical examination; preparation of the examination plan; interpretation of the obtained laboratory and instrumental data; making diagnosis; making treatment plan.

2.9. Arrhythmias and conduction disorders

Risk factors, electrophysiological mechanisms of arrhythmias and heart blocks. Classification of arrhythmias. Basic methods for diagnosing arrhythmias and heart blocks.

Extrasystole: etiology, classification, clinical manifestations, ECG criteria, diagnostic algorithm for extrasystole, antiarrhythmic treatment, prevention.

Atrial fibrillation and flutter: etiology, pathogenesis, classification, clinical symptoms. ECG criteria for atrial fibrillation and flutter. Strategies for the treatment of atrial fibrillation (prevention of thromboembolic complications, treatment of the arrhythmia itself, treatment of comorbid pathology). Assessment of the risk of thromboembolic events in patients with atrial fibrillation/flutter (CHA2DS2-VASc score). Indications and contraindications for cardioversion in atrial fibrillation/flutter, methods of cardioversion. Prevention of paroxysms of atrial fibrillation/flutter. Prognosis for atrial fibrillation and flutter.

Paroxysmal tachycardia: etiology, pathogenesis, classification, clinical signs, ECG diagnosis, diagnostic and treatment tactics. Algorithms for acute management of paroxysmal tachycardia. Indications for synchronized cardioversion, catheter ablation of the source of arrhythmia. Prevention and prognosis for paroxysmal cardiac arrhythmias.

Ventricular fibrillation: etiology, clinical manifestations, ECG diagnosis, cardiopulmonary resuscitation algorithm.

Ventricular preexcitation syndromes. Wolf-Parkinson-White syndrome (WPW syndrome): pathogenesis, classification, clinical manifestations, treatment and diagnostic tactics. Restrictions in prescribing antiarrhythmic drugs in patients with WPW syndrome.

Heart blocks (sinoauricular, atrioventricular and intraventricular): etiology, pathogenesis, clinical manifestations, ECG diagnosis. Morgagni-Adams-Stokes

syndrome. Pharmacological treatment of heart blocks, temporary cardiac pacing, pacemaker implantation. Prognosis for heart block.

Sick sinus syndrome: classification, diagnostics, medical tactic.

Indications for implantation of intracardiac devices (pacemakers, resynchronization devices, cardioverter-defibrillators).

Curation of patients with arrhythmias and heart blocks: collection of complaints and anamnesis of the disease; physical examination; preparation of the examination plan; interpretation of the obtained laboratory and instrumental data; making diagnosis; making treatment plan.

2.10. Circulatory insufficiency (syncope, collapse, shock, acute and chronic heart failure)

Acute vascular insufficiency (syncope, collapse, shock): causes, difference between syncope and collapse, diagnosis and emergency medical care. Emergency care for anaphylactic shock.

Acute heart failure (left ventricular (cardiac asthma and pulmonary edema) and right ventricular (acute cor pulmonale)): causes, pathogenesis, pathophysiology, clinical manifestations. Instrumental diagnosis of acute heart failure: EchoCG, ECG, chest radiography, CT with contrast, angiography. Emergency medical care for acute heart failure at the prehospital stage and in hospital settings. Prognosis for acute heart failure. Prevention of acute heart failure.

Chronic heart failure (CHF): epidemiology, etiology and pathogenesis, classification, criteria for diastolic and systolic myocardial dysfunction. Clinical manifestations of heart failure. Instrumental diagnosis of CHF, 6-minute walk test. The significance of determining the level of brain natriuretic peptide. Treatment of CHF: non-pharmacological methods, pharmacological treatment, hardware and surgical treatment (revascularization, resynchronization therapy, implantable cardioverter-defibrillators, heart transplantation). Prognosis for CHF. Prevention of CHF.

Curation of patients with heart failure: collection of complaints and anamnesis of the disease; physical examination; preparation of the examination plan; interpretation of the obtained laboratory and instrumental data; making diagnosis; making treatment plan.

3. Digestive diseases

3.1. Esophagitis. Gastroesophageal reflux disease. Functional diseases of the esophagus

Esophagitis: definition, etiology, pathogenesis. Risk groups for the development of esophagitis. Classification. Clinical manifestations. Diagnostics, differential diagnosis. Candidal esophagitis. Eosinophilic esophagitis. Diagnostic criteria for eosinophilic esophagitis. Treatment of esophagitis. Complications of esophagitis. Indications for surgical treatment. Prevention of esophagitis.

Gastroesophageal reflux disease (GERD): definition, epidemiology, major risk factors, pathogenesis, classification, clinical picture, differential diagnosis. Extraesophageal manifestations of GERD: bronchopulmonary, otolaryngologic, dental. Instrumental diagnosis of GERD: esophagoscopy, daily pH-metry, radiologic examination, histologic examination, manometry. Complications of GERD: esophageal strictures, bleeding, Barrett's esophagus. Risk factors for the development

of complications of GERD. Treatment of GERD. Management of patients with Barrett's esophagus.

Functional diseases of the esophagus: definition of the concept. Causes of occurrence. Diagnostic criteria for functional substernal pain of esophageal origin, functional dysphagia, lump in the throat, functional heartburn, hypersensitive reflux syndrome. Treatment.

Curation of patients with GERD: collection of complaints and history of the disease; objective examination; drawing up an examination plan; interpretation of the results of laboratory and instrumental methods of examination; making a diagnosis; drawing up a treatment plan.

3.2. Functional dyspepsia. Chronic gastritis. Gastroduodenal ulcers

Functional dyspepsia: definition, epidemiology, causes of development, pathogenesis, classification, clinical manifestations. Diagnostic criteria of epigastric pain syndrome and postprandial distress syndrome, differential diagnosis. Treatment of functional dyspepsia.

Chronic gastritis: definition, prevalence, the role of exogenous and endogenous factors in the development of the disease, pathogenesis, classification. The main methods of diagnosis of chronic gastritis: endoscopic, morphologic, detection of *Helicobacter pylori* infection. Leading morphological signs of chronic gastritis: degree of inflammation, gastritis activity, degree of atrophy and intestinal metaplasia, density of *Helicobacter pylori infection.* Treatment of *Helicobacter pylori-associated gastritis*, other types of gastritis.

Gastroduodenal ulcers: definition, prevalence, etiology and pathogenesis, factors of aggression and protection of the gastric mucosa, clinical manifestations depending on the ulcer localization. Instrumental diagnosis of gastroduodenal ulcers: endoscopic and radiologic method, histologic examination, tests for detection of *Helicobacter pylori*. Differential diagnosis of gastroduodenal ulcers. Complications of gastroduodenal ulcers: bleeding, perforation, penetration, periviscitis, gatekeeper stenosis, malignization. Tactics of a general practitioner in the detection of complications of gastroduodenal ulcers. Treatment of uncomplicated ulcers: diet, eradication of *Helicobacter pylori*, antisecretory treatment, symptomatic drugs, gastroprotectors. Duration of basic treatment depending on the localization of the ulcer. Methods of secondary prevention of gastroduodenal ulcers: continuous supportive and «on demand». Indications for surgical treatment of gastroduodenal ulcers.

Symptomatic ulcers: definition, NSAID-gastropathy, mechanisms of formation of symptomatic ulcers, endoscopic characterization, clinical manifestations, bleeding risk factors, treatment, prevention. Palliative care for patients with gastroduodenal cancer.

Curation of patients with diseases of the upper gastrointestinal tract: collection of complaints and history of the disease; objective examination; drawing up an examination plan; interpretation of the results of laboratory and instrumental methods of examination; making a diagnosis; drawing up a treatment plan.

3.3. Enteropathies. Celiac disease

Enteropathies: definition, etiology, pathogenesis, classification, the role of excessive bacterial growth in the intestine, enzymopathies, clinical manifestations. The

main syndromes in enteropathy: digestive failure, absorption failure, exudative enteropathy. Methods of diagnosis of enteropathy (endoscopic, morphologic, radiologic, functional methods of investigation of absorption processes), changes in laboratory parameters, differential diagnosis. Treatment of enteropathy: diet, antibacterial treatment, probiotics and prebiotics, enzyme treatment, regulators of intestinal motor evacuatory function.

Celiac disease: etiology, pathogenesis, clinical manifestations, diagnosis, treatment, prevention, prognosis.

Curation of patients with enteropathies: collection of complaints and history of the disease; objective examination; drawing up an examination plan; interpretation of the results of laboratory and instrumental methods of examination; making a diagnosis; drawing up a treatment plan.

3.4. Diseases of the large intestine. Irritable bowel syndrome

Ulcerative colitis, Crohn's disease: definition, prevalence, etiology and pathogenesis, classification, clinical manifestations, extraintestinal manifestations. Instrumental methods of diagnosis of ulcerative colitis and Crohn's disease: endoscopic, morphologic, radiologic, ultrasound. Criteria of activity of ulcerative colitis and Crohn's disease, complications. Treatment of ulcerative colitis and Crohn's disease: diet, basic (induction and supportive) treatment depending on the extent and degree of activity (5-aminosalicylic acid derivatives, glucocorticoids, immunosuppressants, monoclonal antibodies), symptomatic drugs, indications for surgical treatment.

Colitis with known etiology: ischemic, radiation, antibiotic-associated (pseudomembranous). Rare forms of colitis (microscopic colitis): collagen and lymphocytic colitis.

Irritable bowel syndrome: definition, prevalence, etiology and pathogenesis, pathophysiology. Clinical manifestations and diagnostic criteria of the main variants of irritable bowel syndrome: with predominance of constipation, diarrhea, mixed and nonspecific. Treatment of irritable bowel syndrome: diet, impact on the psycho-emotional sphere, pain syndrome management, correction of impaired intestinal function. Prevention of irritable bowel syndrome in risk groups.

Curation of patients with intestinal diseases: collection of complaints and history of the disease; objective examination; drawing up an examination plan; interpretation of the results of laboratory and instrumental methods of examination; making a diagnosis; drawing up a treatment plan.

3.5. Functional biliary disorders. Chronic pancreatitis

Functional biliary disorders: definition, causes of development, pathogenesis, classification, clinical manifestations. Diagnostic criteria, diagnosis and treatment of functional gallbladder disorder, functional biliary and pancreatic disorders of sphincter of Oddi.

Chronic pancreatitis: definition, etiologic factors, pathogenesis, classification, clinical picture, criteria of severity of chronic pancreatitis. Laboratory and instrumental methods of diagnosis of chronic pancreatitis: dynamics of enzymes (amylase, lipase, elastase), coprological examination, ultrasound, endoscopic ultrasonography, fibrogastroduodenoscopy, CT, magnetic resonance cholangiopancreatography.

Diagnostic criteria of chronic pancreatitis, differential diagnosis. Complications of chronic pancreatitis. Treatment of chronic pancreatitis: diet, pharmacological treatment (pain relief, compensation of exocrine insufficiency, correction of nutritional status disorders), indications for surgical treatment.

Curation of patients with chronic pancreatitis: collection of complaints and history of the disease; objective examination; drawing up an examination plan; interpretation of the results of laboratory and instrumental methods of examination; making a diagnosis; drawing up a treatment plan.

3.6. Chronic hepatitis. Steatosis of the liver. Gilbert's syndrome

Chronic hepatitis: definition, epidemiology, etiology, pathogenesis (depending on etiologic factors), classification. Biochemical markers of cytolytic syndrome, cholestasis, hepatocellular insufficiency, mesenchymal-inflammatory syndrome. Criteria of chronic hepatitis activity: clinical, biochemical, morphological.

Autoimmune hepatitis: definition, prevalence, etiology (genetic and trigger factors), pathogenesis (immunoregulatory defects, major autoantibodies and target organs), main clinical symptoms (hepatic and extrahepatic), diagnosis, prognosis.

Chronic viral hepatitis: features of the clinical picture depending on the viral infection (B, C, D, E), verification of viral hepatitis, complications, prognosis, primary prevention, vaccination.

Chronic drug-induced hepatitis: prevalence, drugs causing hepatitis, mechanisms of direct cytotoxic action of drug metabolites on the liver, clinical, biochemical, serologic, morphologic manifestations, prognosis.

Cryptogenic hepatitis: definition, differential diagnosis.

Treatment of hepatitis: diet, indications for the use of antiviral drugs, corticosteroids, immunosuppressive drugs, hepatoprotectors, methods of extracorporeal therapy.

Liver steatosis: etiology, pathogenesis, classification, clinical manifestations, diagnosis, treatment.

Gilbert's syndrome: clinical manifestations, diagnosis, treatment, prognosis.

Curation of patients with chronic hepatitis: collection of complaints and history of the disease; objective examination; drawing up an examination plan; interpretation of the results of laboratory and instrumental methods of examination; making a diagnosis; drawing up a treatment plan.

3.7. Cirrhoses of the liver. Hemochromatosis. Wilson-Conovalov disease

Liver cirrhosis: definition, epidemiology, etiology and pathogenesis, classification, severity classes. Clinical manifestations of viral, alcoholic, primary and secondary biliary cirrhosis of the liver. Diagnosis of liver cirrhosis: transient elastography of the liver, liver biopsy, assessment of portal hypertension. Hypersplenism. Complications of liver cirrhosis: bleeding from esophageal and gastric varices, ascites, hepatic encephalopathy, hepatopulmonary syndrome, hepatorenal syndrome, portal hypertensive gastropathy and colopathy, spontaneous bacterial peritonitis. Associated with cirrhosis: nutritional disorders, disorders of systemic hemodynamics, respiratory system disorders, hemostasis, hepatocellular cancer. Differential diagnosis of liver cirrhosis, chronic hepatitis and hepatocarcinoma. Oncomarkers. Principles of treatment of liver cirrhosis: general measures,

pharmacologic treatment and its peculiarities in different forms of liver cirrhosis. Treatment of complications of liver cirrhosis. Indications for liver transplantation. Prognosis in liver cirrhosis. Prevention of liver cirrhosis.

Primary biliary cirrhosis (primary biliary cholangitis) of the liver: etiology, pathogenesis, clinical manifestations, diagnosis, treatment.

Hemochromatosis: primary and secondary iron overload syndrome, etiology, pathogenesis, clinical manifestations, diagnosis, treatment, prevention, prognosis.

Wilson-Conovalov disease: etiology, pathogenesis, clinical manifestations, diagnosis, treatment, prevention, prognosis.

Curation of patients with liver cirrhosis: collection of complaints and history of the disease; objective examination; drawing up an examination plan; interpretation of the results of laboratory and instrumental methods of examination; making a diagnosis; drawing up a treatment plan.

4. Diseases of the musculoskeletal system and connective tissue

4.1. Acute rheumatic fever. Chronic rheumatic heart disease

Acute rheumatic fever: definition, epidemiology, etiology, pathogenesis, classification, clinical manifestations, diagnosis, diagnostic criteria, differential diagnosis, treatment, outcomes, primary and secondary prevention.

Chronic rheumatic heart disease: definition, diagnosis, patient management strategy.

Management of patients with chronic rheumatic heart disease: collecting complaints and medical history; physical examination; developing an investigation plan; interpretation of results of laboratory and instrumental examination methods; establishing a diagnosis; developing a treatment plan.

4.2. Acquired heart defects. Mitral valve prolapse

Acquired heart defects. Mitral valve insufficiency. Mitral stenosis. Aortic valve insufficiency. Aortic stenosis. Etiology of valve defects. Pathogenesis of hemodynamic disorders in acquired heart defects. Clinical manifestations, direct and indirect signs of heart defects. The importance of instrumental methods in diagnosing heart defects (ECG, echocardiography, transesophageal echocardiography, chest X-ray, CT and MRI of the heart).

Combined and mixed heart defects: features of the clinical picture, determination of the predominant defect, diagnosis, course, complications, prognosis. Relative and absolute valve insufficiency.

Complications of acquired heart defects. Causes of decompensation of heart defects. Prognosis of acquired heart defects. Principles of treatment of heart defects, indications for surgical treatment. Features of therapeutic management of patients with prosthetic valves.

Mitral valve prolapse: definition, causes of primary and secondary mitral valve prolapse, classification, minor heart anomalies, diagnosis, significance of ECG and echocardiography, course, complications, prognosis, principles of therapeutic treatment, indications for surgical treatment.

Management of patients with heart defects: collecting complaints and medical history; physical examination; developing an investigation plan; interpretation of

results of laboratory and instrumental examination methods; establishing a diagnosis; developing a treatment plan.

4.3. Joint diseases. Rheumatoid arthritis

Prevalence of joint diseases, social significance, nomenclature of joint diseases.

Rheumatoid arthritis: definition, prevalence, etiology, predisposing factors, pathogenesis, classification, clinical manifestations, involvement of other organs and systems in humans. Diagnostic criteria, laboratory and instrumental methods for diagnosing rheumatoid arthritis. Differential diagnosis of rheumatoid arthritis with gout, osteoarthritis, joint syndrome in systemic connective tissue diseases, acute rheumatic fever. Complications of rheumatoid arthritis, prognosis. Treatment of rheumatoid arthritis: basic, pathogenetic, symptomatic, non-pharmacological treatment methods, physical rehabilitation. Prevention of exacerbations of rheumatoid arthritis.

Palliative care for patients with diseases of the musculoskeletal system and connective tissue who have lost the ability to self-care and have persistent pain syndrome.

Management of patients with rheumatoid arthritis: collecting complaints and medical history; physical examination; developing an investigation plan; interpretation of results of laboratory and instrumental examination methods; establishing a diagnosis; developing a treatment plan.

4.4. Osteoarthritis. Gout

Osteoarthritis: definition, prevalence, etiology, pathogenesis, risk factors, clinical manifestations depending on the localization of the process, diagnosis, differential diagnosis with rheumatoid arthritis and gout. Treatment of osteoarthritis: non-pharmacological methods, pharmacological treatment, physical rehabilitation. Prevention of osteoarthritis progression. Prognosis of osteoarthritis.

Gout: definition, etiology, predisposing factors, causes of primary and secondary hyperuricemia, pathogenesis, classification, main clinical syndromes (joint, involvement of other organs and systems). Acute gouty attack: precipitating factors, clinical manifestations. Laboratory and instrumental diagnosis of gout, differential diagnosis with rheumatoid arthritis and osteoarthritis. Complications of gout. Treatment of gout: alleviation of acute gouty attack, hypouricemic treatment, dietary recommendations, physical rehabilitation. Prevention of gout. Prognosis in gout.

Management of patients with osteoarthritis and gout: collecting complaints and medical history; physical examination; developing an investigation plan; interpretation of results of laboratory and instrumental examination methods; establishing a diagnosis; developing a treatment plan.

4.5. Systemic lupus erythematosus. Systemic sclerosis. Dermatomyositis/polymyositis

Systemic lupus erythematosus: definition, epidemiology, etiology and pathogenesis, classification, clinical manifestations, laboratory and instrumental diagnosis, diagnostic criteria, differential diagnosis, course, principles of treatment, outcomes, complications, prognosis.

Systemic sclerosis: definition, etiology and pathogenesis, classification, clinical manifestations, laboratory and instrumental diagnosis, diagnostic criteria, differential diagnosis, principles of treatment, outcomes, prognosis.

Dermatomyositis/polymyositis: definition, etiology and pathogenesis, clinical manifestations, laboratory and instrumental diagnosis, diagnostic criteria, differential diagnosis, primary and secondary dermatomyositis/polymyositis, treatment, course, prognosis.

Management of patients with systemic lupus erythematosus, systemic sclerosis: collecting complaints and medical history; physical examination; developing an investigation plan; interpretation of results of laboratory and instrumental examination methods; establishing a diagnosis; developing a treatment plan.

4.6. Systemic vasculitis

Etiology and pathogenesis, classification, general principles of diagnosis and treatment of systemic vasculitis.

Vasculitis with predominant involvement of small-caliber vessels (IgA vasculitis (Henoch-Schönlein purpura), granulomatosis with polyangiitis, eosinophilic granulomatosis with polyangiitis, microscopic polyangiitis): clinical manifestations, course variants, diagnosis, treatment.

Vasculitis with predominant involvement of medium-caliber vessels (polyarteritis nodosa, Kawasaki disease): clinical manifestations, course variants, diagnosis, treatment.

Vasculitis with predominant involvement of large vessels (non-specific aortoarteritis, giant cell arteritis): clinical manifestations, diagnosis, treatment. Diagnostic criteria for rheumatic polymyalgia.

Management of patients with systemic vasculitis: collecting complaints and medical history; physical examination; developing an investigation plan; interpretation of results of laboratory and instrumental examination methods; establishing a diagnosis; developing a treatment plan.

5. Diseases of kidneys and urinary tract

5.1 Acute and chronic glomerulonephritis

Acute glomerulonephritis: etiology, pathogenesis, clinical manifestations. The concept of nephritic syndrome. Methods of diagnosis of acute glomerulonephritis, principles of treatment, outcomes, prognosis. Prevention of post-streptococcal glomerulonephritis.

Chronic glomerulonephritis: pathogenesis of various forms, classification (clinical and morphological). The role of kidney biopsy in the diagnosis of nephrologic diseases. Assessment of the functional state of the kidneys. Urinary syndrome. Differentiated approach to the treatment of chronic glomerulonephritis.

Curation of patients with chronic glomerulonephritis: collection of complaints and history of the disease; objective examination; drawing up an examination plan; interpretation of the results of laboratory and instrumental methods of examination; making a diagnosis; drawing up a treatment plan.

5.2. Urinary tract infection. Tubulointerstitial nephritis

Urinary tract infection: clinical manifestations, diagnosis, treatment. Features of management of pregnant women with urinary tract infection.

Chronic pyelonephritis: etiology, pathogenesis, classification, clinical manifestations, diagnosis, treatment, peculiarities of antibacterial treatment, prevention of exacerbations.

Tubulointerstitial nephritis: causes of development, diagnosis, differential diagnosis with glomerulonephritis, treatment. Features of drug interstitial nephritis.

Curation of patients with urinary tract infection: collection of complaints and history of the disease; objective examination; drawing up an examination plan; interpretation of the results of laboratory and instrumental methods of examination; making a diagnosis; drawing up a treatment plan.

5.3. Nephrotic syndrome. Renal amyloidosis. Chronic kidney disease and chronic renal failure

Nephrotic syndrome: the most common diseases accompanied by the development of nephrotic syndrome, pathogenesis, clinical manifestations, diagnosis, complications, therapeutic tactics.

Renal amyloidosis: modern ideas about etiology and pathogenesis, classification. The most frequent diseases accompanied by the development of amyloidosis. Clinical stages of renal amyloidosis, diagnosis, the role of morphologic examination, therapeutic tactics, preventive measures.

Chronic kidney disease (CKD): classification of stages. The main diseases leading to the development of CKD. Factors of progression of CKD. Control of the functional state of the kidneys. Clinical manifestations, diagnostic methods, conservative treatment of CKD. Therapeutic aspects when using methods of extracorporeal detoxification or efferent methods (hemodialysis, peritoneal dialysis). Kidney transplantation.

Palliative care for patients with terminal CKD.

Curation of patients with nephrotic syndrome, chronic kidney disease: collection of complaints and history of the disease; objective examination; drawing up an examination plan; interpretation of the results of laboratory and instrumental methods of examination; making a diagnosis; drawing up a treatment plan.

6. Diseases of the blood system

6.1. Anemias

Erythropoiesis, hemoglobin synthesis. Definition and classification of anemias. Criteria for assessing the severity of anemia. Common symptoms of anemia: laboratory, clinical.

Iron deficiency anemias: prevalence, iron metabolism in the human body, etiology and pathogenesis, clinical manifestations. Laboratory signs of iron deficiency. Differential diagnosis of iron deficiency anemias with iron-saturated anemias. Treatment and prevention of iron deficiency anemia: diet, iron-containing drugs. Indications for parenteral administration of iron-containing drugs.

Anemias associated with impaired DNA and RNA synthesis (megaloblastic anemias): etiology, pathogenesis of B_{12} -deficiency and folate-deficiency anemias, clinical manifestations, hematologic picture, myelogram, differential diagnosis of vitamin B_{12} and folate deficiency. Treatment, prevention and prognosis of megaloblastic anemias.

Hemolytic anemias: causes, pathogenesis depending on etiology, classification, manifestations of intravascular and intracellular hemolysis, hemolytic crises, clinical manifestations, laboratory diagnosis, immunological diagnosis. Basic treatment of

hemolytic anemias, management of hemolytic crises, indications for surgical treatment.

Aplastic anemias: the structure of etiological factors, pathogenesis of aplastic anemia and individual clinical and laboratory syndromes, classification, clinical manifestations and diagnosis of congenital and acquired (primary and secondary) anemias. Treatment of aplastic anemias, indications for bone marrow transplantation.

Anemia of chronic disease (in CKD, connective tissue diseases, endocrine diseases): diagnosis, treatment, prognosis.

Indications for transfusion of erythrocyte mass, «washed» red blood cells in various variants of anemia. Rules of transfusion, control, registration of medical documentation. Prevention of hemotransfusion reactions.

Curation of patients with anemia: collection of complaints and history of the disease; objective examination; drawing up an examination plan; interpretation of the results of laboratory and instrumental methods of examination; making a diagnosis; drawing up a treatment plan.

6.2. Hemorrhagic diatheses

Hemorrhagic diathesis: definition, causes of development, classification, common signs, types of bleeding, methods of diagnosis.

Idiopathic thrombocytopenic purpura: main etiologic factors, pathogenesis of bleeding, clinical manifestations, diagnosis, differential diagnosis with symptomatic thrombocytopenias, course, treatment.

Hemophilia: the importance of hereditary factor in the development of the disease, forms, pathogenesis of bleeding, clinical manifestations, course, diagnosis, treatment, prevention, prognosis. Secondary coagulopathies: causes, diagnosis, tactics of patient management.

Hemorrhagic telangiectasia (Randu-Osler disease): pathogenesis of bleeding, role of hereditary factor, clinical manifestations, diagnosis, treatment.

Curation of patients with hemorrhagic diathesis: collection of complaints and history of the disease; objective examination; drawing up an examination plan; interpretation of the results of laboratory and instrumental methods of examination; making a diagnosis; drawing up a treatment plan.

6.3. Hemoblastoses. Acute leukemia. Agranulocytosis

Hemoblastoses. The importance of hereditary factor, radiation, chemical substances, viruses, changes in tryptophan metabolism in the development of hemoblastosis. Pathogenesis, classification, clinical and hematologic syndromes of hemoblastoses, myeloproliferative and lymphoproliferative diseases, paraproteinemic hemoblastoses.

Acute leukemia: classification, major clinical syndromes, laboratory and morphological diagnosis, immunological phenotyping of leukemia cells. Course and complications of acute leukemia. Principles of treatment of acute leukemia (cytostatic and detoxification treatment, immunotherapy, treatment of hemorrhagic syndrome and anemia, bone marrow transplantation). Cytostatic disease. Outcomes of acute leukemia.

Palliative care for patients with oncohematologic diseases.

Agranulocytosis: etiology and pathogenesis, clinical variants (myelotoxic, immune), laboratory diagnosis. Complications and course of agranulocytosis. Treatment and prevention of agranulocytosis. Prognosis in agranulocytosis.

Curation of patients with acute leukemia: collection of complaints and history of the disease; objective examination; drawing up an examination plan; interpretation of the results of laboratory and instrumental methods of examination; making a diagnosis; drawing up a treatment plan.

6.4. Chronic leukemia

Chronic myeloleukosis: pathogenesis, laboratory and morphologic diagnosis, clinical manifestations, stages of course, complications, treatment, prognosis.

Leukemoid reactions: diagnosis and differential diagnosis.

Chronic lympholeukemia: pathogenesis, laboratory and morphologic diagnosis, the main clinical syndromes, stages of course, principles of treatment, prognosis.

Curation of patients with chronic leukemia: collection of complaints and history of the disease; objective examination; drawing up an examination plan; interpretation of the results of laboratory and instrumental methods of examination; making a diagnosis; drawing up a treatment plan.

6.5. True polycythemia. Multiple myeloma

True polycythemia: pathogenesis, stages of the course of the disease and the main clinical syndromes, differential diagnosis with symptomatic erythrocytosis, course and outcomes of the disease. Principles of treatment of polycythemia and its complications. Prognosis in polycythemia.

Multiple myeloma: pathogenesis, clinical manifestations, diagnosis, principles of treatment, prognosis.

Waldenström's macroglobulinemia: clinical manifestations, diagnosis, principles of treatment.

Curation of patients with leukemoid reactions, polycythemia, multiple myeloma: collection of complaints and history of the disease; objective examination; drawing up an examination plan; interpretation of the results of laboratory and instrumental methods of examination; making a diagnosis; drawing up a treatment plan.

ACADEMIC DISCIPLINE «INTERNAL DISEASES» CURRICULAR CHART

Section, topic #	Section (topic) name	Number of class hours		Supervised student independent work	Literature	Practical skill	Forms of control	
		lectures	practical				of practical skills	of current / intermediate assessment
	7 Semester							
	Lectures	**9**	**-**	**6**				
1.1.	Acute and chronic bronchitis. Chronic obstructive pulmonary disease	1,5	-	-	1, 2, 14			
1.2.	Pneumonias	**-**	**-**	1,5	1, 2, 14			Survey, test
1.3.	Bronchial asthma	**-**	**-**	1,5	1, 2, 14			Survey, test
1.5.	Pulmonary embolism. Pulmonary hypertension. Core pulmonale	**-**	**-**	1,5	1, 2, 14			Survey, test
2.1.	Arterial hypertension	1,5	-	-	1, 2, 14			
2.3.	Atherosclerosis. Coronary artery disease. Angina pectoris	1,5	-	-	1, 2, 14			
2.4.	Acute coronary syndrome. Myocardial infarction	1,5	-	-	1, 2, 14			
2.5.	Complications of myocardial infarction	-	-	1,5	1, 2, 14			Survey, test
2.9.	Arrhythmias and conduction disorders: supraventricular arrhythmias	1,5	-	-	1, 2, 14			
2.9.	Arrhythmias and conduction disorders: ventricular arrhythmias; blockages	1,5	-	-	1, 2, 14			

	Practical exercises	**-**	**78**	**-**				
1.1.	Acute and chronic bronchitis. Chronic obstructive pulmonary disease	-	6	-	1-5, 8, 14	Interviewing the patient. Physical examination of the patient. Interpretation of spirograms	Performing at the patient's bedside. Solving situational problems*	Survey, test
1.2.	Bronchial asthma	-	6	-	1-5, 8, 14	Interviewing the patient. Physical examination of the patient. Interpretation of spirograms. Control of a bronchial asthma attack	Performing at the patient's bedside. Solving situational problems	Survey, test
1.3.	Pneumonias	-	6	-	1-3, 5, 8, 14	Interviewing the patient. Physical examination of the patient. Interpretation of radiographs	Performing at the patient's bedside. Solving situational problems	Survey, test
1.4.	Pleural effusion. Pneumonic diseases of the lungs. Bronchiectasis	-	6	-	1-3, 5, 8, 14	Interviewing the patient. Physical examination of the patient. Interpretation of radiographs	Performing at the patient's bedside. Solving situational problems*	Survey, test
1.5.	Pulmonary embolism. Pulmonary hypertension. Core pulmonale	-	6	-	1-3, 5, 8, 13, 14	Interviewing the patient. Physical examination of the patient. ECG interpretation	Performing at the patient's bedside Solving situational problems	Survey, test
2.1.	Arterial hypertension	-	6	-	1-3, 5-7, 12-14	Interviewing the patient. Physical examination of the patient. Management of uncomplicated hypertensive crisis	Performing at the patient's bedside, Solving situational problems	Survey, test

2.2.	Secondary hypertension	-	6	-	1-3, 5-7, 12-14	Interviewing the patient. Physical examination of the patient	Performing at the patient's bedside	Survey, test
2.3.	Atherosclerosis. Coronary artery disease. Angina pectoris	-	6	-	1-3, 5-7, 12-14	Interviewing the patient. Physical examination of the patient. ECG interpretation. Controlling an angina attack. Interpretation of blood chemistry	Performing at the patient's bedside. Solving situational problems	Survey, test
2.4.	Acute coronary syndrome. Myocardial infarction	-	6	-	1-3, 5-7, 12-14	Interviewing the patient. Physical examination of the patient. ECG interpretation. Interpretation of blood chemistry	Performing at the patient's bedside. Solving situational problems*	Survey, test
2.5.	Complications of myocardial infarction	-	6	-	1-3, 5-7, 12-14	Interviewing the patient. Physical examination of the patient. ECG interpretation	Performing at the patient's bedside. Solving situational problems	Survey, test
2.9.	Arrhythmias and blockages: supraventricular arrhythmias	-	6	-	1-3, 5-7, 12-14	Interviewing the patient. Physical examination of the patient. ECG interpretation. Management of supraventricular arrhythmias	Performing at the patient's bedside. Solving situational problems	Survey, test
2.9.	Arrhythmias and blockages: ventricular arrhythmias; blockages	-	6	-	1-3, 5-7, 12-14	Interviewing the patient. Physical examination of the patient. ECG interpretation	Performing at the patient's bedside. Solving situational problems	Survey, test

6.2.	Hemorrhagic diatheses	-	6	-	1-3, 5-7, 12-14	Interviewing the patient. Physical examination of the patient. Coagulogram interpretation	Performing at the patient's bedside. Solving situational problems	Survey, test. Protecting the study card of an inpatient* Credit
	8 semester							
	Lectures	**9**	-	**6**				
3.1.	Esophagitis. Gastroesophageal reflux disease. Functional diseases of the esophagus	**-**	-	1,5	1, 2, 14			
3.2.	Functional dyspepsia. Chronic gastritis. Gastroduodenal ulcers	1,5	-	-	1, 2, 14			
3.3.	Enteropathies. Celiac disease	-	-	1,5	1, 2, 14			Survey, test
3.4.	Diseases of the large intestine. Irritable bowel syndrome	1,5	-	-	1, 2, 14			
3.6.	Chronic hepatitis. Steatosis of the liver. Gilbert's syndrome	1,5	-	-	1, 2, 14			
3.7.	Cirrhoses of the liver. Hemochromatosis. Wilson-Conovalov disease	1,5	-	1,5	1, 2, 14			
5.1.	Acute and chronic glomerulonephritis	1,5	-	-	1, 2, 14			
5.2.	Urinary tract infections. Tubulointerstitial nephritis	-	-	1,5	1, 2, 14			Survey, test
5.3.	Nephrotic syndrome. Renal amyloidosis. Chronic kidney disease and chronic renal failure	1,5	-	-	1, 2, 14			
	Practical exercises	**-**	**60**	**-**				
3.1.	Esophagitis. Gastroesophageal reflux disease. Functional diseases of the esophagus	-	6	-	1, 2, 5, 8, 10, 14	Interviewing the patient. Physical examination of the patient	Performing at the patient's bedside	Survey, test

3.2.	Functional dyspepsia. Chronic gastritis. Gastroduodenal ulcers		6		1, 2, 5, 8, 10, 11, 14	Interviewing the patient. Physical examination of the patient	Performing at the patient's bedside	Survey, test
3.3.	Enteropathies. Celiac disease	-	6	-	1, 2, 5, 8, 10, 14	Interviewing the patient. Physical examination of the patient	Performing at the patient's bedside	Survey, test
3.4.	Diseases of the large intestine. Irritable bowel syndrome		6		1, 2, 5, 8, 10, 14	Interviewing the patient. Physical examination of the patient	Performing at the patient's bedside	Survey, test
3.5.	Functional biliary disorders. Chronic pancreatitis	-	6	-	1, 2, 5, 8, 10, 14	Interviewing the patient. Physical examination of the patient. Interpretation of blood chemistry	Performing at the patient's bedside. Solving situational problems	Survey, test
3.6.	Chronic hepatitis. Steatosis of the liver. Gilbert's syndrome	-	6	-	1, 2, 5, 8, 10, 14	Interviewing the patient. Physical examination of the patient. Interpretation of blood chemistry	Performing at the patient's bedside, Solving situational problems	Survey, test
3.7.	Cirrhoses of the liver. Hemochromatosis. Wilson-Conovalov disease	-	6	-	1, 2, 5, 8, 10, 14	Interviewing the patient. Physical examination of the patient. Interpretation of blood chemistry	Performing at the patient's bedside. Solving situational problems	Survey, test
5.1.	Acute and chronic glomerulonephritis	-	6	-	1, 2, 5, 8, 10, 14	Interviewing the patient. Physical examination of the patient. Interpretation of blood chemistry. Interpretation of urinalysis	Performing at the patient's bedside. Solving situational problems	Survey, test
5.2.	Urinary tract infections. Tubulointerstitial nephritis	-	6	-	1, 2, 5, 8, 10, 14	Interviewing the patient. Physical examination of the patient.	Performing at the patient's bedside.	Survey, test

						Interpretation of blood chemistry. Interpretation of urinalysis	Solving situational problems*	
5.3.	Nephrotic syndrome. Renal amyloidosis. Chronic kidney disease and chronic renal failure	-	6	-	1, 2, 5, 8, 10, 14	Interviewing the patient. Physical examination of the patient. Interpretation of blood chemistry. Interpretation of urinalysis	Performing at the patient's bedside. Solving situational problems*	Survey, test. Control work* Exam
	9 semester							
	Lectures	**6**	**-**	**3**				
2.6.	Cardiomyopathies. Myocarditis	1,5	-	1,5	1, 2, 14			Survey, test
2.10.	Circulatory insufficiency (syncope, collapse, shock, acute and chronic heart failure)	-	-	1,5	1, 2, 14			Survey, test
4.3. 4.4.	Joint diseases. Rheumatoid arthritis. Osteoarthritis. Gout	1,5	-	-	1, 2, 14			
4.5.	Systemic lupus erythematosus. Systemic sclerosis. Dermatomyositis / polymyositis	1,5	-	-	1, 2, 14			
4.6.	Systemic vasculitis	1,5	-	-	1, 2, 14			
	Practical exercises	-	**36**	-				
2.6. 2.7.	Cardiomyopathies. Myocarditis. Pericarditis	-	6	-	1-3, 5, 7, 10, 14	Interviewing the patient. Physical examination of the patient. Interpretation of blood chemistry. ECG interpretation	Performing at the patient's bedside. Solving situational problems	Survey, test
2.10.	Circulatory insufficiency (syncope, collapse, shock, acute and chronic heart failure)	-	6	-	1-3, 5- 7, 10, 13, 14	Interviewing the patient. Physical examination of the patient.	Performing at the patient's bedside.	Survey, test

						Interpretation of radiographs. Interpretation of blood chemistry. Emergency care for anaphylaxis	Solving situational problems. Performing on simulation equipment	
4.3.	Joint diseases. Rheumatoid arthritis.	-	6	-	1-3, 5, 7, 10, 14	Interviewing the patient. Physical examination of the patient. Interpretation of radiographs	Performing at the patient's bedside. Solving situational problems	Survey, test
4.4	Osteoarthritis. Gout	-	6	-	1-3, 5, 7, 10, 14	Interviewing the patient. Physical examination of the patient. Interpretation of radiographs	Performing at the patient's bedside. Solving situational problems	Survey, test
4.5.	Systemic lupus erythematosus. Systemic sclerosis. Dermatomyositis/polymyositis	-	6	-	1-3, 5, 7, 10, 14	Interviewing the patient. Physical examination of the patient. Hemogram interpretation	Performing at the patient's bedside. Solving situational problems	Survey, test
4.6.	Systemic vasculitis	-	6	-	1-3, 5, 7, 10, 14	Interviewing the patient. Physical examination of the patient.	Performing at the patient's bedside	Survey, test. Protecting the study card of an inpatient*. Credit
	10 semester							
	Lectures	**6**	**-**	**3**				
6.1.	Anemias	1,5	-	-	1, 2, 14			Survey, test
6.3. 6.4.	Hemoblastoses. Acute leukemia. Agranulocytosis Chronic leukemia.	1,5	-	-	1, 2, 14			

6.5.	True polycythemia. Multiple myeloma	-	-	1,5	1, 2, 14			
4.1.	Acute rheumatic fever. Chronic rheumatic heart disease	-	-	1,5	1, 2, 14			
4.2.	Acquired heart defects. Mitral valve prolapse	1,5	-	-	1, 2, 14			
2.8.	Infective endocarditis	1,5	-		1, 2, 14			Survey, test
	Practical exercises	**-**	**35**	**-**				
6.1.	Anemias	-	6	-	1, 2, 5, 7, 10, 14	Interviewing the patient. Physical examination of the patient. Hemogram interpretation	Performing at the patient's bedside. Solving situational problems*	Survey, test
6.3.	Hemoblastoses. Acute leukemia. Agranulocytosis	-	5	-	1, 2, 5, 7, 10, 14	Interviewing the patient. Physical examination of the patient. Hemogram interpretation	Performing at the patient's bedside. Solving situational problems	Survey, test
6.4.	Chronic leukemia. True polycythemia. Multiple myeloma	-	6	-	1, 2, 5, 7, 10, 14	Interviewing the patient. Physical examination of the patient. Hemogram interpretation	Performing at the patient's bedside, Solving situational problems	Survey, test
4.1.	Acute rheumatic fever. Chronic rheumatic heart disease	-	6	-	1, 2, 5, 7, 10, 14	Interviewing the patient. Physical examination of the patient. ECG interpretation	Performing at the patient's bedside. Solving situational problems	Survey, test
4.2.	Acquired heart defects. Mitral valve prolapse	-	6	-	1, 2, 5, 7, 10, 14	Interviewing the patient. Physical examination of the patient. ECG interpretation	Performing at the patient's bedside. Solving situational problems	Survey, test

2.8.	Infective endocarditis	-	6	-	1, 2, 5, 7, 10, 14	Interviewing the patient. Physical examination of the patient. ECG interpretation	Performing at the patient's bedside. Solving situational problems*	Survey, test. Control work*
	Total hours	**48**	**209**	**16**				Exam

*This is a mandatory form of current certification.

INFORMATION AND INSTRUCTIONAL UNIT

LITERATURE

Basic:

1. Internal diseases : textbook. In 2 Vols. Vol. 1 / ed. by A. I. Martynov, J. D. Kobalava, S. V. Moiseev. – Moskow : Geotar-Media, 2022. – 683 p.
2. Internal diseases : textbook. In 2 Vols. Vol. 2 / ed. by A. I. Martynov, J. D. Kobalava, S. V. Moiseev. – Moskow : Geotar-Media, 2022. – 614 p.

Additional:

3. Patorskaya, O. A. Methodological recommendations for case history : textbook / O. A. Patorskaya. – Minsk : BSMU, 2023. – 26 p.
4. Arsentieva, I. L. Symptoms, diagnosis, principles of treatment and prevention of bronchial athma and chronic obstructive pulmonary diseases : textbook / I. L. Arsentieva. – Minsk : BSMU, 2024. – 30 p.
5. Diagnostic methods in the internal medicine : workbook / E. A. Docenko, [et all]. – Minsk : BSMU, 2021. – 158 p.
6. Samsonova, I. M. Cardiopulmonary resuscitation. Post-resuscitation syndrome : textbook / I. M. Samsonova, L. G. Zakharova. – Vitebsk : VGMU, 2022. – 149 p.
7. Internal medicine : textbook for English-speaking students of higher medical educational esablishment. P. 1 : Cardiology. Rheumatology. Hematology / ed. by M. A. Stanislavchuk, V. K. Sierkova. – Vinnytsya : Nova Knyha, 2019. – 407 p.
8. Internal medicine : textbook for English-speaking students of higher medical educational esablishment. 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.
9. Internal medicine : textbook. In 2 books. Book 1 . Diseases of the Cardiovascular and Respiratory Systems / N. M. Seredyuk [et al.]. – Kyiv : AUS Medicine Publishing, 2019. – 663 p.
10. Internal medicine : textbook : in 2 books. Book 2. Diseases of the Digestive System, Kidney, Rheumatic and Hematological Diseases / N. M. Seredyuk [et al.]. – Kyiv : AUS Medicine Publishing, 2020. – 463 p.
11. Sidzenka, V. M Peptic ulcer disease : a study-methodological guide for students of higher educational institutions studying on the English language for the speciality 1-79 01 01 «General Medicine». – Minsk : BSMU, 2019 – 24 p.
12. Clinical electrocardiography : manual for students of higher education institutions studying in the specialty 1-79 01 01 «General Medicine»/ V. M. Parochkin, [et. al]. – Grodno : GRSMU, 2019. – 200 p.
13. Emergency and urgent medical care : student training manual / O. Y. Bodulev [et. al]; ed. by D. A. Shkurupiy. – Vinnytsia : Nova Knyha, 2019. – 200 p.

Electronic courseware for the academic discipline «Internal Diseases»

14. https://etest.bsmu.by/course/index.php?categoryid=9.

METHODOLOGICAL RECOMMENDATIONS FOR THE ORGANIZATION AND PERFORMANCE OF STUDENT INDEPENDENT WORK IN THE ACADEMIC DISCIPLINE

The time allocated for independent work can be used by students for:
preparing for lectures, practical classes;
preparing for credits and exams in the academic discipline;
studying the topics (issues) designed for independent work;
preparing thematic presentations;
performing practical tasks;
testing.

METHODOLOGICAL RECOMMENDATIONS FOR THE ORGANIZATION AND PERFORMANCE OF SUPERVISED STUDENT INDEPENDENT WORK IN THE ACADEMIC DISCIPLINE

APPROXIMATE LIST OF TASKS FOR SUPERVISED STUDENT INDEPENDENT WORK:

taking notes of original sources (sections of anthologies, collections of documents, monographs, textbooks);
preparation of tests for the organization of mutual control.

FORMS OF CONTROL OF SUPERVISED STUDENT INDEPENDENT WORK:

test;
survey.

LIST OF AVAILABLE DIAGNOSTIC TOOLS

The following forms of current certification are used to diagnose competencies:
survey;
tests;
control work;
protecting the study card of an inpatient.

LIST OF AVAILABLE TEACHING METHODS

Traditional method;
active (interactive) methods:
- training based on simulation technologies;
- Problem-Based Learning (PBL);
- Team-Based Learning (TBL);
- Case-Based Learning (CBL).

LIST OF PRACTICAL SKILLS

Name of practical skill	Form of practical skill control
1. Interviewing the patient	Performing at the patient's bedside
2. Physical examination of the patient	Performing at the patient's bedside
3. Interpretation of radiographs	Performing at the patient's bedside. Solving situational problems
4. ECG interpretation	Performing at the patient's bedside. Solving situational problems
5. Interpretation of spirograms	Solving situational problems
6. Hemogram interpretation	Solving situational problems
7. Interpretation of urinalysis	Solving situational problems
8. Coagulogram interpretation	Solving situational problems
9. Interpretation of blood chemistry	Solving situational problems
10. Control of a bronchial asthma attack	Solving situational problems
11. Management of uncomplicated hypertensive crisis	Solving situational problems
12. Controlling an angina attack	Solving situational problems
13. Management of supraventricular arrhythmias	Solving situational problems
14. Emergency care for anaphylaxis	Performing on simulation equipment

LIST OF SIMULATION EQUIPMENT USED

1. Screen-based patient simulator.
2. Patient Mannequin.

PROTOCOL OF THE CURRICULUM APPROVAL
BY OTHER DEPARTMENTS

Title of the discipline requiring approval	Department	Amendments to the curriculum in the academic discipline	Decision of the department, which designed the curriculum (date, protocol #)
1. Clinical Immunology, Allergology	Propaedeutics of Internal Diseases	No suggestions	Protocol # 15 of 17.04.2026
2. Occupational Diseases	Department of Internal Medicine, Gastroenterology and Nutrition with training and advanced training courses	No suggestions	Protocol # 15 of 17.04.2026

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Curriculum content, composition and the accompanying documents comply with the established requirements.

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