FEDERAL STATE BUDGETARY
EDUCATIONAL INSTITUTION OF HIGHER EDUCATION
"AMUR STATE MEDICAL ACADEMY"
MINISTRY OF HEALTH OF THE RUSSIAN FEDERATION

AGREED
Vice-Rector for Academic Affairs,

_____N.V. Loskutova

April17, 2025

Decision of the CCMC
April17, 2025

Protocol No. 7

APPROVED
by decision of the Academic Council of the FSBEI HE Amur SMA of the Ministry of Health of the Russian Federation
April 22, 2025

Protocol No. 15

Acting Rector of the FSBEI HE Amur SMA of the Ministry of Health of the Russian Federation
_____I.V. Zhukovets

April 22, 2025

ДОКУМЕНТ ПОДПИСАН
ЭЛЕКТРОННОЙ ПОДПИСЬЮ

Сертификат: 5DAB2242604E6452085B2614FA420034A
Владелец: Жуковец Ирина Валентиновна
Действителен: с 15.04.2025 до 09.07.2026

EDUCATIONAL PROGRAM

discipline "DIFFERENTIAL DIAGNOSTICS IN CARDIOLOGY"

Specialty: 31.05.01 General Medicine
Course: 6
Semester: 12
Total hours: 72 hrs.
Lectures: 14 hrs.
Practical training: 34 hrs.
Total credits: 2 credit units
Self-sustained work of students: 24 hrs.
Control form: credit-test, 12 semester

Blagoveshchensk, 2025

The educational program of the discipline is designed in accordance with the requirements of the Federal State Educational Standard of Higher Education - specialist in specialty 31.05.01 General Medicine, approved by order of the Ministry of Education and Science of Russia dated 08/12/2020 No. 988 (registered with the Ministry of Justice of Russia on 08/26/2020 No. 59493), BPEP HE (2021).

Authors:

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Head of the Department of Faculty and Polyclinic Therapy, Professor at the Department of Faculty and Polyclinic Therapy, Holder of an Advanced Doctorate in Medical Sciences, S.V. Naryshkina

Chief Physician of «MLDC «Evgenia», Associate Professor, Ph.D. of Medical Sciences E. L.Lazutkina.

APPROVED at the meeting of the Department of Hospital Therapy with a Course in Pharmacology named after Prof. Y.S. Landyshev,
Protocol No. 8 dated April 16, 2025
Head of the Department of Hospital Therapy with a Course in Pharmacology named after Professor Yu.S. Landyshev, Holder of an Advanced Doctorate (Doctor of Science) in Medical Sciences, Full Professor, V.V. Voitsekhovsky

Conclusion of the Expert Commission on the review of the Educational Programs: Protocol No. 1 dated April 16, 2025
Expert of the expert commission,
Holder of the Advanced Doctorate in Medical Sciences,
Associate Professor _____ E.E. Molchanova

APPROVED at the meeting of the CMC No. 3:
Protocol No. 6 dated April 17, 2025

Chairman of the CMC No. 3
Head of the Department of Hospital Therapy with a Course in Pharmacology named after Professor Yu.S. Landyshev, Holder of an Advanced Doctorate (Doctor of Science) in Medical Sciences, Full Professor _____ V.V. Voitsekhovsky

AGREED:
Dean of the Faculty of Medicine,
Ph.D. of Medical Sciences, Associate Professor _____ N.G. Brush

April 17, 2025

CONTENT

1. EXPLANATORY NOTE

1.1. Characteristic disciplines

Cardiovascular diseases are the leading cause of death in adults in both economically developed and and developing countries. On average, account for 55% of mortality. While over the past 20 years there has been a steady downward trend in mortality from cardiovascular diseases in Western countries, That V Russia, against, growth is noted her absolute quantities, What is the most important medical and social problem of our time, and is associated with both high levels of morbidity and mortality.

The growing prevalence of circulatory system pathology and the tendency towards more frequent severe clinical forms make the discipline in question one of the leading positions in modern clinical medicine. The progress achieved in the diagnosis and treatment of cardiac diseases over the past decade has contributed to the development and implementation of new examination methods. This creates a real basis for early detection, timely adequate treatment and rehabilitation of patients and serves as the basis for the development of primary and secondary prevention of cardiovascular diseases using a rapidly expanding arsenal of drugs. Knowledge of these modern approaches to diagnosis, treatment and prevention is necessary for medical students, future doctors, since almost every specialist in his daily practice encounters cardiac pathology involving various organs and systems.

The work program of the discipline "Differential diagnostics in cardiology" is aimed at an in-depth study of the main cardiac diseases (features of their etiology, pathogenesis, clinical and differential diagnostic criteria, modern methods diagnostics, treatments And prevention). When studying this discipline, it is envisaged that students will develop professional skills through a complete clinical examination of patients, conducting differential diagnostics, which contributes to establishing a clinical diagnosis and developing a plan for treatment, rehabilitation and preventive measures.

Classes on the subject "Differential diagnostics in cardiology" pass in the 12th semester: 10 clinical practical classes (34 hours) and 7 (14 hours) lectures.

Classes on the subject “Differential diagnostics in cardiology” are conducted in accordance with the curriculum in training rooms, wards of the cardiology and therapeutic profile of hospital departments, in the certification and simulation center.

1.2. Goals And tasks

Target mastering the discipline

Deepening basic knowledge and developing systemic knowledge about the main cardiac diseases, the ability to generalize and apply the acquired knowledge in practical activities, taking into account modern principles of diagnosis, treatment and prevention.

Tasks studies disciplines

To promote the development of clinical thinking and professional skills in students, teach students:

1. Right analyze, systematize clinical and anamnestic data,

results physical examinations patient With main diseases in cardiology;
2. timely diagnostics early manifestations diseases cardiovascular system;
3. differential diagnostics main nosological forms in cardiology;
4. Right interpret data additional methods examinations;
5. work With medical documentation V conditions hospital;
6. to develop independent clinical thinking , to formulate a detailed clinical diagnosis in accordance with modern classifications;
7. to draw up individual plans of treatment and rehabilitation measures for patients with cardiovascular diseases, depending on the etiological factor, features of pathogenesis, clinical picture of the pathological process, functional state of organs and systems, presence of complications and concomitant pathology.
8. the basic principles of providing emergency care in urgent conditions within the studied nosological forms .

1.3. Place disciplines V structure basic professional educational program of higher education

In accordance with the Federal State Educational Standard of Higher Education - specialist in specialty 31.05.01 Medical case (2020) The discipline "Differential diagnostics in cardiology" refers to the optional part, compulsory disciplines B1.V.OD.5. The total workload is 2 credits (72 hours), taught in the 12th semester of the 6th year. Control form – credit in XII semester.

1.4. Requirements to students

For studies disciplines are necessary knowledge, skills And skills, being formed preceding disciplines:
Latin language
Knowledge: main medical And pharmaceutical terminology on Latin language.
Skills: be able to apply knowledge For communications And receipt information from medical literature, medical documentation (II-III level).
Skills: applies medical And pharmaceutical terminology on Latin language V professional activities
Professional foreign language
Knowledge: main medical And pharmaceutical terminology on foreign language (II-III level).
Skills: apply knowledge For communications And receipt information from foreign sources.
Skills: applies medical And pharmaceutical terminology on foreign language V professional activities
History of Medicine
Knowledge: outstanding figures medicine And health care, Nobel laureates, outstanding medical discoveries in the field of therapy, the influence of humanistic ideas for medicine (II-III level).
Skills: competently And on one's own to expound And analyze contribution domestic And foreign scientists V development of cardiology.

Skills: applies medical discoveries And achievements V professional activities
Philosophy
Knowledge: methods And techniques philosophical analysis problems; forms And methods scientific knowledge, their evolution; the main patterns and trends of development of the world historical process; laws dialectical materialism in medicine (II-III level).
Skills: competently And on one's own to expound, analyze forms And methods scientific knowledge And laws dialectical materialism V medicine.
Skills: applies analysis, synthesis, reveals cause and effect relationship V professional activities
Bioethics
Knowledge: moral and ethical standards, rules and principles of professional medical conduct, rights patient and the doctor, the main ones ethical documents, regulatory activity doctor (II-III level).
Skills: build and maintain partnerships with patients and other team members.
Skills: applies tactics partnerships relations in professional activities
Histology
Knowledge: embryogenesis, histological structure fabrics And systems (II-III level).
Skills: determine age-related patterns of development of organs and systems, analyze results histological research.
Skills: applies analysis histological research V professional activities
Microbiology With virology
Knowledge: the impact of microbes, viruses, rickettsia, and fungi on the body . Microbiological diagnostics infectious diseases (II level).
Skills: analyze results microbiological diagnostics infectious diseases.
Skills: applies analysis results virological And microbiological diagnostics V professional activities
Modern problems regeneration
Knowledge: Biological essence, basic forms And phases main types of regeneration - physiological and reparative; general ideas about the possibility of stimulation regenerative processes, flowing V in the body; main types stem cells, sources their receipt, application V medicine (II-III level).
Skills: analyze regularities physiological And reparative regeneration And meaning immune systems.
Skills: applies analysis regularities physiological And reparative regeneration V professional activities
Physics, mathematics. Medical informatics. Medical biophysics
Knowledge: mathematical methods for solving intellectual problems and their application in medicine; theoretical foundations of computer science, collection, storage, search, processing, transformation, spreading information V medical and biological systems, the use of information computer systems in medicine and health care; principles works And devices equipment, used V medicine, Basics physical and mathematical laws that are reflected in medicine (II-III level).
Skills: use educational, scientific, popular science literature, the Internet

Internet For professional activities, work With equipment With taking into account rules safety precautions **.**
Skills: applies medical equipment V professional activities
Chemistry. Bioorganic chemistry V medicine
Knowledge : chemical and biological essence processes, happening V alive in the body on molecular And cellular levels (II-III level).
Skills : analyze contribution chemical processes V functioning cordially-vascular, respiratory, digestive, urinary, hematopoietic systems.
Skills: applies analysis chemical processes V functioning cordially-vascular systems V professional activities
Biochemistry
Knowledge: compound blood, biochemical constants blood, hormones, buffer systems, factors oxygenation hemoglobin, metabolism erythrocytes (II-III level).
Skills: analyze the contribution of biochemical processes to the functioning of organs and the cardiovascular system, respiratory, digestive, urinary, hematopoietic systems, interpret the results of the most common laboratory diagnostic methods to identify disorders in diseases of internal organs.
Skills: applies analysis biochemical processes V functioning cordially-vascular systems V professional activities
Biology
Knowledge: laws of genetics, its importance for medicine; patterns of heredity And variability V individual development How Basics understanding pathogenesis And etiology of hereditary and multifactorial diseases; biosphere and ecology, the phenomenon of parasitism And bioecological diseases (II-III level).
Skills: analyze regularities heredity And variability V development diseases internal organs.
Skills: applies analysis heredity V professional activities
Anatomy
Knowledge: anatomical and physiological features of the respiratory, cardiovascular, digestive, urinary, and hematopoietic systems (II-III levels).
Skills: analyze age-gender peculiarities buildings organs And systems.
Skills: applies analysis age-gender features V professional activities
Normal physiology
Knowledge: reflex arc, conditional And unconditional reflexes, physiology cordially-vascular, digestive, urinary, respiratory and hematopoietic systems are normal (II-III level).
Skills : analyze meaning regulations biological processes V in the body a person on the functioning of the cardiovascular, digestive, urinary, respiratory, hematopoietic systems.
Skills: applies analysis regulations biological processes V functioning cardiovascular systems V professional activities
Topographical anatomy And operational surgery
Knowledge: structure, topography cells, fabrics, organs And body systems in interaction With their function V norm And pathologies (II level).
Skills: analyze the functional characteristics of the cardiovascular system, respiratory, digestive, urinary, hematopoietic systems V norm and pathologies.
Skills: applies functional analysis features cardiovascular system V professional activities

Safety life activity
Knowledge: sharp And chronic diseases from impacts ionizing radiation (radial disease) (II level).
Skills: analyze meaning ionizing radiation on formation cordially-vascular pathologies.
Skills: applies analysis meanings ionizing radiation on formation cardiovascular pathologies V professional activities
Pathophysiology, clinical pathophysiology
Knowledge: morphological changes in tissues of the body in case of cardiovascular pathology vascular, respiratory, digestive, urinary and system hematopoiesis (II level).
Skills: determine contribution pathophysiological processes V development diseases internal organs.
Skills: applies analysis pathophysiological processes V development cordially-vascular pathologies V professional activities
Immunology
Knowledge: types of immunity, regulation of immune response, causes immunopathological conditions, clinical manifestations of immunopathology, basic methods ratings immune status And principles his ratings, indications To application immunotropic therapy (II level).
Skills: identify syndromes and symptoms of diseases associated with immune disorders systems, appoint clinical and immunological examination, formulate immunological diagnosis, appoint immunocorrective therapy And preventive events For warnings diseases immune systems.
Skills: applies clinical and immunological examination analysis in professional activities
Pharmacology
Knowledge : pharmacokinetics, pharmacodynamics, side effects influence various medicinal drugs on organism (II- III level).
Skills: write prescriptions for prescribed drugs, know the indications and contraindications To their purpose.
Skills: writes prescriptions for prescribed drugs taking into account indications and contraindications V professional activities
Propaedeutics internal diseases; radial diagnostics
Knowledge: collection complaints, anamnesis **,** physical And additional methods examinations patients (palpation, percussion, auscultation, X-ray diagnostics, electrocardiography) (II-III level).
Skills: conduct anamnestic And physical examination, highlight main syndromes And symptoms diseases internal organs, interpret results of X-ray and electrocardiographic examination.
Skills: applies physical inspection cardiovascular systems, interprets results electrocardiological research V professional activities
Psychiatry And medical psychology
Knowledge: peculiarities psyche sick V clinic internal diseases (II- III level).
Skills: define forms And mechanisms psychological protection, types personality reactions on disease, differentiate somatic pathology and hysterical conversion symptoms
Skills: applies knowledge of clinical psychology in professional work activities.
Public health And healthcare, economy health care

Knowledge: Basics legislation Russian Federations By security health population,main regulatory and technical documents; population health indicators, factors that shape human health (environmental, professional, natural climatic, endemic, social, epidemiological, psycho-emotional, professional, genetic) (II-III level).
Skills: plan, analyze And evaluate quality medical assistance, the health status of the population and the impact of environmental factors on it production environment; count indicators medical statistics.
Skills: applies analysis And assessment qualities medical help V professional activities
Pathological anatomy, clinical pathological anatomy
Knowledge: etiology, pathogenesis, morphogenesis, pathomorphosis of the disease, principles of classification of diseases; structural and functional bases of diseases and pathological processes; reasons, mechanisms development And outcomes typical pathological processes (II-III level).
Skills: visually evaluate And to record changes V organs And fabrics corpse, to substantiate the nature of the pathological process and its clinical manifestations; to give conclusion O reason death And formulate pathological diagnosis.
Skills: applies comparison clinical And pathological diagnoses V professional activities
Urgent states V therapy
Knowledge: etiology, pathogenesis, classification clinical manifestations, complications, diagnostics, treatment And prevention urgent states V therapy (II-III level).
Skills: diagnose an urgent condition in the main therapeutic conditions, formulate and justify a clinical diagnosis, conduct differential diagnostics And to render urgent help.
Skills: applies diagnostics, treatment And prevention urgent states V professional activities
Faculty therapy
Knowledge: etiology, pathogenesis, classification clinical manifestations, complications, diagnostics, treatment And prevention main diseases respiratory, cordially- vascular, digestive, urinary, hematopoietic system (II-III level).
Skills: diagnose, formulate And justify clinical diagnosis, to conduct differential diagnostics And to render help.
Skills: applies diagnostics, treatment And prevention therapeutic diseases V professional activities
Endocrinology
Knowledge: etiology, pathogenesis, classification clinical manifestations, complications, diagnostics, treatment And prevention main endocrine diseases (II- III level).
Skills: formulate and justify a clinical diagnosis, prescribe an examination plan And treatments at main endocrine diseases, give recommendations By employment.
Skills: applies diagnostics, treatment And prevention endocrine diseases V professional activities

1.5 Interdisciplinary connections disciplines With subsequent disciplines

Item No.	Name subsequent disciplines	Discipline "Differential diagnostics in cardiology" is necessary for studying subsequent disciplines
1	Outpatient clinic therapy	+
2	Phthisiology	+
3	Clinical pharmacology	+
4	Anesthesiology, resuscitation, intense therapy	+
5	Hospital therapy	+
6	Oncology, radial therapy	+

1.5. Requirements To results development disciplines

Studying disciplines "Differential diagnostics in cardiology" is aimed at **developing the following competencies: universal (UK), general professional (OPK) and professional competencies (PC):** UK-1, 3; OPC-1, 4, 7, 11; PC-.1, 2, 3, 4, 5, 6, 10,12

Item No.	Code and name of competence	Code and name of the indicator achievement of competence	IN result studies educational disciplines "Clinical Pulmonology" student must:		
			Know	**Be able to**	**To own**
Universal competencies					
1	**UK- 1.** Capable realize critical analysis problematic situations on basis systemic approach, to develop strategy actions	**ID UK- 1.1.** Analyzes problematic situation, like system, revealing her composite And connections between them. **ID UK-1.2** . Determines spaces V information, necessary For solutions problematic situations, And designs processes By their elimination. **ID UK- 1.3.** Applies systems analysis for resolution of problems situations in professional sphere. **ID UK-1.4** . Uses logical-methodological tools For critical ratings modern concepts philosophical And social character V his subject areas. **ID UK-1.5** . Critical	Main historical stages development clinical cardiology, item And tasks disciplines, connection With others medical-biological And medical disciplines; main terms And concepts, used V clinical cardiology; modern concepts V studying cordially-vascular pathologies; principles use logical-methodological tools For critical ratings modern concepts philosophical And social character V	Describe stages formations clinical cardiology How sciences And her role in modern stage; evaluate levels organizations cordially-vascular systems human; evaluate contribution domestic scientists V development cordially-vascular medicine; develop And to argue strategy solutions problematic situations on basis systemic And interdisciplinary approaches V clinical cardiology	Ability analyze significance clinical cardiology on at the present stage; systemic analysis received data For permissions problematic situations V professional sphere; methodology developments And argumentation strategies solutions to problems situations on basis systemic And interdisciplinary approaches V clinical cardiology; critical approach To assessment And reliability sources information, methodology works With contradictory information,

		evaluates the reliability of information sources, works With conflicting information from different sources.	clinical cardiology		received from different sources
2	**UK- 3.** Capable organize ь and lead work teams, producing command strategy For achievements delivered goals	**ID UK-3.1.** Establishes and develops professional contacts in accordance with the needs of joint activities, including the exchange of information and the development of a unified strategy; works in a tolerant manner in a team , perceives social, ethnic, religious and cultural differences.	Basic principles of tolerant perception of social, ethnic, religious and cultural differences when working in a team; skills of effective and conflict-free communication communication in a team	Be tolerant of social issues, ethnic, religious and cultural differences in work V team; effectively and without conflict communicate in a team, including developing a team strategy to achieve a set goal	Ability to develop team strategy For achieving the set goal, including, professional; methods of effective and conflict-free communication in a team; tolerance to social, ethnic, religious and cultural differences
General professional competencies					
3	**OPK- 1.** Capable to implement moral And legal norms, ethical And deontological kie principles	**ID OPK-1.1** . Implemented professional activity V in accordance with ethical norms And morally-moral principles. **ID OPK-1.2.** Organizes professional activity, guided by legislation V sphere	Ethical And deontological aspects relationships "doctor-doctor", "doctor -patient"; principles effective And conflict-free communication With patients; methods of effective	Conduct physical inspection sick With taking into account ethical And deontological what principles; effectively And conflict-free communicate With patients, relatives,	To own skills communication With sick, relatives colleagues, younger staff; determine problems appeals patient To to the doctor; methods verbal And

	V professional Noah activities	health care, knowledge medical ethics and deontology. **ID OPK-1.3.** Has skills presentations independent dots of vision, analysis And logical thinking, public speeches, morally- ethical argumentation, management discussions And round tables, principles medical deontology And medical ethics.	communication between doctor And patient in difficult times situations; main requirements To personalities doctor; general principles management discussions and round tables	colleagues; to form effective relationships With patient; observe principles confidentiality; conduct discussions, observing principles moral and ethical argumentation	non-verbal communication With patient; principles confidentiality V professional activities And communication With colleagues; continuous improve skills communication V professional activities of a physician
4	**OPK- 4.** Capable apply medical products, provided ye in order rendering medical help, A Also conduct examinations patient With purpose establishments diagnosis	**ID OPK-4.1.** Uses modern medical technologies, specialized equipment and medical products, disinfection means, medicinal drugs, V volume number immunobiological And other substances And their combinations at solving professional tasks With positions evidentiary medicine. **ID OPK-4.2.** Knows indications And contraindications To appointment instrumental, functional and laboratory methods examinations, possible complications at conducting examinations, urgent	Indications And contraindications To use modern medical technologies, medical products, medicinal drugs, instrumental, functional And laboratory methods examinations V cardiology; interpretation results most common methods instrumental, laboratory And functional	Apply modern medical technologies, specialized equipment, medical products, medicinal drugs V in accordance With in order provision of medical care help, from the position evidentiary medicine V areas cardiology; appoint instrumental, functional And laboratory methods examinations; interpret results methods	Ability To use modern medical technologies, specialized equipment, medical products, medicinal drugs And their combinations, With positions evidentiary medicine in cardiology; compare results additional methods examinations (instrumental, laboratory And functional diagnostics) for detection pathological

		help And their warning. **ID OPK-4.3.** Interprets results most common methods instrumental, laboratory And functional diagnostics, thermometry to identify pathological processes. **ID OPK-4.4.** Owns methods general clinical examinations patient of different ages. **ID OPK-4.5.** Formulates preliminary diagnosis And clinical diagnosis according to ICD.	diagnostics; methods general clinical examinations patient; principles formulations preliminary diagnosis And clinical diagnosis in cardiology according to ICD	instrumental, laboratory And functional diagnostics; conduct clinical examination patient; formulate preliminary diagnosis And clinical diagnosis in cardiology according to ICD	processes; methods general clinical examinations patient different ages; formulation preliminary diagnosis And clinical diagnosis according to ICD, considering totality clinical And additional methods examinations (instrumental, laboratory And functional)
5	**OPK- 7.** Capable assign treatment And realize control his efficiency and security	**ID OPK-7.1.** Implemented choice medicinal product By aggregates his pharmacokinetic and pharmacodynamic characteristics for treatment patients With various nosological forms in outpatient settings And stationary conditions. **ID OPK-7.2.** Selects optimal minimum most effective funds using comfortable methods their applications. **ID OPK-7.3.** Explains	Principles choice medicinal means By aggregates his pharmacokinetic and pharmacodynamic characteristics for treatments patients With various diseases organs blood circulation; advantages selected preparation And preferred way his applications; main and side effects actions medicinal	To implement choice optimal medicinal means (With taking into account his pharmacokinetic and pharmacodynamic characteristics) And preferred method his applications; identify main And side effects actions medicinal drugs, applied V cardiology, taking into account morphofunctional	Ability To appointment optimal medicinal means, choice preferred methods his applications, With taking into account morphofunctional features, physiological states And pathological processes at diseases organs blood circulation, possible interactions

		main and side effects of drugs, effects of their combined use And interactions with food, taking into account morphofunctional features, physiological states and pathological processes V in the body human **ID OPK-7.5.** Takes into account morphofunctional features, physiological states and pathological processes in the human body when choosing over-the-counter drugs and other pharmacy products . **ID OPK-7.6.** Analyzes the results of possible interaction medicines with the combined use of various drugs. **ID OPK-7.7.** Evaluates the effectiveness And safety of drug therapy based on a combination of clinical, laboratory, instrumental and other diagnostic methods.	drugs; morphofunctional features, physiological states and pathological processes in the body of a cardiac patient when choosing a drug; results of possible drug interactions with the combined use of various drugs in cardiology; criteria for the effectiveness and safety of drugs therapy based on a combination of clinical, laboratory, instrumental and other methods for diagnosing diseases of the circulatory system.	features, physiological states and pathological processes human body ; choose over-the-counter medicines and other pharmacy products taking into account physiological conditions and pathological processes at patients with diseases of the circulatory system; take into account possible drug interactions funds in combination use various drugs in cardiology; evaluate the effectiveness and safety of drug therapy based on a combination of clinical and laboratory data, instrumental and other methods	medicinal products when using various drugs in combination; the ability to promptly identify side effects of drugs, used in clinical cardiology; determination of the effectiveness and safety of drug therapy for diseases of the circulatory system based on a combination of clinical, laboratory, instrumental and other diagnostic methods .

				diagnostics V cardiology.	
6	**OPK- 11.** Able to prepare and apply scientific, scientific-production , design, organizational - managerial and regulatory documentation in the healthcare system	**ID OPK 11.1.** Applies modern methods of collecting and processing information, conducts statistical analyzes the obtained data in the professional field and interprets the results to solve professional problems. **ID OPK 11.2** . Identifies and analyzes problem situations, carries out search and selection of scientific, regulatory and organizational-administrative documentation in accordance with the specified objectives. **ID Defense Industry Complex 11.3.** Interprets and applies data from physical, chemical, mathematical and other natural science concepts and methods to solve professional problems. **ID OPK-11.4.** Conducts scientific and practical research, analyzes information using the historical method and prepares publications based on the research results. **ID OPK-11.5.** Analyzes And	Basic methodological approaches to working with educational, scientific, reference, medical literature, including the Internet (methods of collecting and processing information); algorithms And software tools for decision support during the treatment and diagnostic process in clinical cardiology; methods collection, storage, retrieval, processing, transformation and distribution of information in medical information systems; methods maintaining medical records; Basic statistical methods for solving intellectual problems tasks and their application in	independently with educational, scientific, reference, medical literature, including, And V networks Internet (search and select information) in the field of clinical cardiology; carry out statistical processing, analysis of the obtained data and interpret the results to solve professional problems in the field of diagnostics and treatment of diseases of organs blood circulation; interprets and applies physical data, chemical, mathematical and other natural science concepts and methods for solving professional tasks in the field of clinical	The ability to take a systematic approach to the analysis of educational, scientific, reference, medical information, V volume including Internet sources (methods of collecting and processing information); basic skills in using medical information systems and Internet resources; methods of maintaining medical records; basic scientific methods of cognition: observation, description, measurement, experiment in the field of clinical cardiology; analysis And preparation of accounting and reporting medical documentation and calculation methods qualitative and quantitative

		prepares medical records and reports documentation and calculates qualitative and quantitative indicators used in professional activities.	clinical cardiology.	cardiology.	indicators used in clinical cardiology.
Professional competencies					
7	**PC-1.** Capable to render medical help V urgent And emergency form	**ID PC -1.3.** Reveals states, requiring rendering medical help V emergency form **ID PC - 1.4.** Provides medical help V emergency form patients at states, representing threat life patient	Clinical signs states, requiring provision of medical care help in an emergency form V cardiology (spicy coronary syndrome, acute cardiac failure); methodology rendering medical help V emergency form V cardiology	Reveal clinical signs states, requiring rendering medical help V emergency form V cardiology (spicy coronary syndrome, acute cardiac failure); provide medical care help in an emergency form V cardiology	Ability diagnose and provide medical help V emergency form V cardiology (spicy coronary syndrome, acute cardiac failure).
8	**PC-2.** Capable gather And analyze complaints, anamnesis life And anamnesis diseases patient With purpose establishments diagnosis	**ID PC-2.1.** Installs contact with the patient. **ID PC-2.2.** Carries out collection complaints, specifies their, highlighting main And secondary. **ID PC-2.3.** Collects And analyzes information O beginning diseases, availability factors risk, dynamics development symptoms and currents diseases. **ID PC-2.4.** Analyzes deadlines	Methodology collection complaints (main, minor) patient With cardiovascular disease; methodology anamnesis collection diseases (terms appeals for medical with help, dynamics development symptoms, volume conducted therapy And her efficiency), anamnesis	Install contact With patient; to conduct collection complaints And anamnesis diseases patient With pathology cordially-vascular systems, analyze received data; define factors risk existing diseases organs blood circulation at patient; evaluate	Ability establishments contact, compliant relationships With patient with illness organs blood circulation; conducting collection complaints (main, secondary), anamnesis diseases (start, dynamics development of symptoms, appeal for

		first and repeated appeals for medical with help, volume conducted therapy, its effectiveness. **ID PC-2.5.** Collects And evaluates information about anamnesis life, including data about the transferred diseases, injuries And surgical interventions, hereditary, professional, epidemiological anamnesis.	life, including factors risk diseases organs blood circulation, data about the transferred diseases, injuries And surgical interventions, hereditary, professional, epidemiological anamnesis.	information about anamnesis life, devoting special attention accompanying diseases, hereditary, allergological, professional, epidemiological anamnesis.	medical with help, characteristic and volume conducted therapy And her efficiency), anamnesis life (risk factors , related diseases, allergological, professional, epidemiological anamnesis) patient With cardiovascular disease..
9	**PC-3.** Capable conduct physical examination patient, analyze results additional methods examinations With purpose establishments diagnosis	**ID PC-3.1.** Conducts complete physical examination patient (inspection, palpation, percussion, auscultation) And interprets his results **ID PC-3.2.** Justifies necessity, volume, order diagnostic events (laboratory, instrumental) And directions at the consultation patient To to doctors- for specialists **ID PC-3.3.** Analyzes received results examinations patient, when necessity substantiates And plans volume	Methodology full physical examinations patient With cardiovascular disease (inspection, palpation, percussion, auscultation) And interpretation his results; necessity, volume, order diagnostic events And indications For consultations doctors-specialists; methodology analysis And comparisons received clinical-diagnostic	Conduct complete physical examination patient With cardiovascular disease (inspection, palpation, percussion, auscultation) And interpret his results; define necessity, volume, order diagnostic events And indications For consultations doctors-specialists; analyze And compare received	Ability To conducting full physical examinations patient With cardiovascular disease (inspection, palpation, percussion, auscultation) And interpretations his results; direct patient on carrying out diagnostic events (laboratory, instrumental), on consultation patient To to medical specialists;

		additional research. **ID PC-3.4.** Interprets and analyzes the results of collecting information about the patient's disease, data obtained during laboratory and instrumental examinations and during consultations with specialist doctors, and, if necessary, justifies and plans the scope of additional studies. **ID PC-3.5.** Performs early diagnostics of internal organ diseases. Installs diagnosis taking into account the current international Statistical Classification of Diseases and Related Health Problems (ICD) **ID PC-3.6.** Conducts differential diagnostics of internal diseases organs from other diseases	results of examination of a patient with a circulatory disease; indications for additional examination methods (if necessary); principles of early diagnosis, main symptoms and syndromes of cardiovascular diseases; formulation of the diagnosis taking into account the current international statistical classification diseases and health-related problems (ICD); differential diagnosis of circulatory diseases	clinical diagnostic results examination of a patient with organ disease blood circulation; determine indications for the appointment of additional examination methods; identify syndromes and symptoms of cardiovascular diseases, substantiate their clinical diagnosis in accordance with the current international statistical classification of diseases and related health problems (ICD); conduct differential diagnostics of the identified cardiovascular pathology	analysis and comparison of the obtained clinical diagnostic results examination of a patient with organ disease blood circulation; the ability to analyze the main clinical manifestations cardiovascular disease, clinical diagnosis in accordance with the current international statistical classification diseases and health-related problems (ICD) and justify it; conducting differential diagnostics of the identified cardiovascular pathology With other diseases.
10	**PC-4.** Capable determine indications To	**ID PC-4.1.** Defines medical indications for provision ambulance, V volume number	Medical indications For rendering ambulance, including ambulance	Define medical indications for emergency care, in	Ability To definition of medical testimony

	hospitalization, indications for provision emergency, including specialized emergency , medical care	ambulance specialized medical care **ID PC-4.2.** Refer the patient for specialized medical care in an inpatient setting or in a day hospital setting if there are medical indications in accordance with the current procedures for providing medical assistance, clinical recommendations (treatment protocols) on issues of providing medical care taking into account the standards of medical care **ID PC-4.3.** Uses medical products in accordance with current procedures for the provision of medical care, clinical recommendations (treatment protocols) on issues of providing medical care, assistance taking into account medical standards help	specialized medical care in cardiology; medical indications for directions patient for the provision of specialized medical care in inpatient or day hospital conditions, principles of use of medical devices in accordance with current procedures for providing medical care, clinical guidelines (treatment protocols) on issues of providing medical care, taking into account the standards of medical care in cardiology	including emergency specialized medical care, to a patient with cardiovascular disease; determine medical indications for referring a patient for specialized medical care in a hospital or day hospital, principles of using medical devices in accordance with current procedures for providing medical care, clinical guidelines (protocols) treatment) in cardiology	to provide emergency care, in including emergency specialized medical care in cardiology; the ability to determine medical indications for referral patient for the provision of specialized medical care in a hospital or day hospital, the principles of using medical devices in accordance with current procedures for providing medical care, clinical guidelines (treatment protocols) on issues of providing medical care to patients with cardiovascular pathology
11	**PC-5.** Capable prescribe treatment	**ID PC-5.1.** Comprises plan treatment of the patient taking into account the diagnosis, age patient,	Modern methods applications, mechanism of action, indications and	Compose plan treatments patient with cardiovascular disease pathology With	Ability develop an individual plan

	patients	clinical picture of the disease, the presence of complications, concomitant pathology, in accordance with the current procedures for providing medical assistance, clinical recommendations (treatment protocols) on issues of providing medical care taking into account the standards of medical care **ID PC-5.2.** Prescribes medications, medical devices and therapeutic nutrition taking into account the diagnosis, age and clinical paintings diseases in accordance with the current procedures for the provision of medical care, clinical recommendations, taking into account the standards of medical care **ID PC-5.3.** Prescribes non-drug treatment taking into account the diagnosis, age and clinical paintings diseases in accordance with the current procedures for the provision of medical care, clinical recommendations,	contraindications for use medicines , medical devices at diseases of the circulatory system (taking into account the diagnosis, age and clinical picture of the disease) in accordance with current procedures for providing medical care, clinical guidelines (treatment protocols) on issues of providing medical care taking into account standards of medical care in cardiology; non-drug treatment taking into account the diagnosis, age and clinical picture of cardiovascular disease; principles of providing palliative care to patients with diseases of the circulatory system; principles personalized organization	taking into account the diagnosis, age, clinical picture of the disease in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on issues of providing medical care taking into account the standards of medical care in cardiology; prescribe medications , medical products, non-drug treatment for diseases of the circulatory system; provide palliative care for patients with circulatory diseases; organize personalized treatment for patients, including pregnant women women, elderly patients And senile	treatment of a patient with cardiovascular pathology, taking into account the diagnosis, age, clinical picture of the disease in accordance with current procedures for providing medical care, clinical guidelines (treatment protocols) on issues of providing medical care taking into account the standards of medical care in cardiology; prescribe non-drug treatment for diseases of the circulatory system; provide palliative care to patients with diseases of the circulatory system; organize personalized treatment of the patient, including pregnant women, elderly and senile patients age With cardiovascular

		taking into account the standards of medical care **of the ID PC-5.4.** It turns out palliative care at interaction with medical specialists and other health workers **ID PC-5.5.** Organizes personalized treatment of patients, including pregnant women, elderly and senile patients	treatments patient, V including pregnant women, elderly patients And elderly people with cardiovascular diseases	age with cardiovascular diseases, in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols)	diseases, in accordance with the current procedures for providing medical care, clinical guidelines (treatment protocols) on issues of providing medical care, taking into account the standards of medical care in cardiology
12	**PC-6.** Capable of monitoring the effectiveness and safety of the therapy being administered	**ID PC-6.1.** Evaluates the effectiveness And safety of use of medicines, medical devices, therapeutic nutrition and other methods of treatment **ID PC-6.2.** Takes into account the pharmacodynamics and pharmacokinetics of the main groups of drugs, prevents the development of undesirable effects drug reactions, and corrects them if they occur.	Information on efficacy and safety use of drugs , medical devices, therapeutic nutrition and other methods of treatment in cardiology; pharmacodynamics and pharmacokinetics of the main groups of drugs used in cardiology	To evaluate the effectiveness and safety of the use of drugs, medical devices, therapeutic nutrition and other methods of treating patients with cardiovascular pathology; take into account pharmacodynamics and pharmacokinetics when prescribing medicinal means used in	The ability to assess the effectiveness and safety of the use of drugs , medical devices, therapeutic nutrition and other methods of treating diseases of the circulatory system; ability to take into account at appointment of features of pharmacodynamics and pharmacokinetics of drugs used in treatment pathologies circulatory organs

				cardiology	
13	**PC - 10.** Able to conduct and monitor the effectiveness of events on preventive work and the formation of a healthy lifestyle	**ID PC-10.1.** Prescribes preventive activities for patients taking into account risk factors for the prevention and early detection of diseases, including and socially significant diseases	Forms and methods of educational work, preventive measures for patients taking into account risk factors for the prevention and early detection of pathology of the circulatory system, including socially significant diseases; risk factors for the development of cardiovascular diseases	To identify modifiable risk factors for the development of cardiovascular diseases; prescribe preventive measures to patients with taking into account factors risk for the prevention and early detection of diseases of the circulatory system, including and socially significant diseases V cardiology	Ability to conduct educational activities work, preventive measures for patients taking into account the identified risk factors development cardiovascular diseases for the prevention and early detection of pathology of the circulatory system, including socially significant ones
14	**PC-12.** Ready for maintaining medical records, including in electronic form	**ID PC-12.1 .** Fills out medical documentation, including in electronic form **ID PC-12.2 .** Works with personal data of patients and information constituting a medical secret **ID PC-12.3.** Prepares documents when referring patients on hospitalization, consultation, spa treatment, medical and social examination	Rules for the preparation of medical documentation (including V electronic (vide) in medical organizations of the cardiology profile; principles of working with personal data of patients and information constituting a medical secret	Fill out medical documentation (including in electronic form) in medical organizations with a cardiological profile; work with personal patient data And information constituting a medical secret; draw up documents upon referral patients for hospitalization,	Ability to complete medical documentation (including V electronic (in medical organizations with a cardiological profile); the ability to work With personal data of patients and information constituting a medical secret; to design documents when referring patients with

				consultation, spa treatment, medical and social expertise	cardiovascular diseases for hospitalization, consultation, health resort treatment treatment, medical and social expertise

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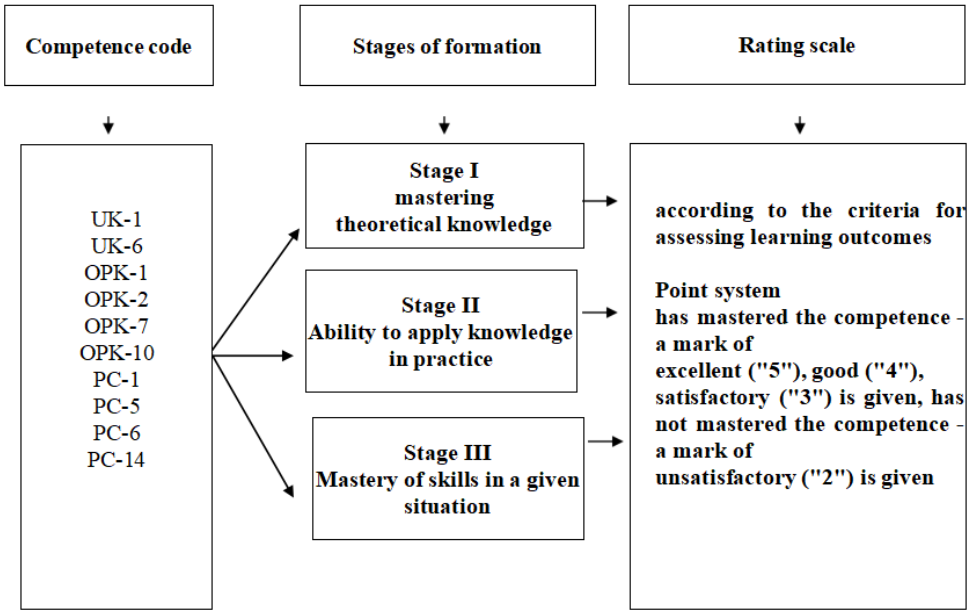
1.6. **Stages formations competencies And description scales assessments**



1.7. Forms organizations training And types control

Forms organizations training students	Types control
1. Lectures 2. Clinical practical classes 3. Independent work at the patient's bedside 4. Work in diagnostic rooms (functional diagnostics, X-ray operating room, echocardiography, clinical and biochemical laboratories) 5. Interactive forms: (role-playing game, brainstorming, interactive survey, video film, computer simulations, work in the certification-simulation center) 6. Internet class 7. Educational duty 8. Participation V rounds sick With head of department, professor, associate professors 9. Participation V research work of the department	*Input control:* solution test tasks *Current control:* - frontal survey (oral or written) - testing, V volume number And computer - examination home tasks - solution situational tasks - examination assimilation practical skills (work at beds sick, interviews on situational tasks, work with regulatory documents) -examination design abstract - report By educational on duty *Intermediate Certification:* – Credit (testing, interview on control questions, solving a situational problem)

Explanation. Theoretical knowledge By discipline students receive at lectures, clinical practical classes, taking part in the research work of the department, patient rounds with the head of the department, professor, associate professors, work V department functional diagnostics, X-ray-

operating, clinical and biochemical laboratories, in the certification and simulation center. During practical classes, the acquired material is consolidated and monitored. **Interactive forms** of training are used in the training process: business games, computer simulations, small group methods, etc. Practical application of theoretical material in everyday work is logical in the process of learning, helps to acquire practical skills and abilities. In the process of patient supervision, training duty, students consolidate and improve the basics of examining patients, skills in interpreting the results of clinical, laboratory and instrumental examination, formulating a clinical diagnosis, and prescribing an examination and treatment plan, medical deontology, medical ethics.

The entrance control is carried out at the first lesson, is designed to determine the level of preparedness of students and includes testing on previously completed disciplines.

Current monitoring is carried out at each clinical practical lesson and includes an assessment of the skills developed by students. during class theoretical knowledge and practical skills and includes: oral and test survey (similar theoretical and test questions will be offered at the final and midterm control), solving situational problems; control of practical skills (interpretation of clinical, laboratory and instrumental examination results, formulation of a clinical diagnosis, drawing up a plan for examination and treatment of the patient), report on duty with a report of the patient's medical history (complaints, anamnesis of the disease and life, physical examination data, results of additional examination methods, formulation and justification of the clinical diagnosis, differential diagnosis, treatment taking into account individual characteristics), as well as monitoring of patient care.

The final assessment (midterm certification) includes a test in the 12th semester and consists of an assessment of the theoretical knowledge and practical skills developed by students during the course of the course, includes a final test assessment (in the Moodle system), an interview on test questions, and a solution to a situational problem.

2. STRUCTURE AND CONTENT DISCIPLINES

2.1 Volume disciplines And types educational activities

Types academic work	Total hours	XII semester
Lectures	14	14
Clinical practical classes	34	34
Independent Job students	24	24
General labor intensity V hours	72	72
General labor intensity V credit units	2	2

2.2. Thematic plan lectures And their brief content

Item No.	Subject And content lectures	Codes formed competencies	Labor intensity (hours)
1	**Fibrillation atria. Treatment, prevention.** The lecture examines the relevance of the problem of diagnostics and treatment of atrial fibrillation at the present stage, provides data on the epidemiology of this rhythm disorder. Definition of atrial fibrillation, etiology, pathogenesis, risk factors, classification, clinical and functional diagnostic criteria, modern diagnostic methods, differential diagnostics of dependence syndromes from nosology is considered. Pharmacotherapy And interventional methods treatments fibrillation atria. Prevention complications.	UK-1, 3; OPK -1, 4, 7, 11; PC-.1, 2, 3, 4, 5, 6, 10,12	2
2	**Ventricular violations rhythm. Treatment, prevention sudden cardiac death.** The lecture emphasizes the relevance and significance of the problem under study, covers the issues of etiology, pathogenesis, classification of ventricular rhythm disturbances. The role of anamnestic, physical, functional, laboratory research methods in the differential diagnosis of ventricular rhythm disturbances. Approaches to tactics management of patients with ventricular arrhythmia at the present stage. Modern methods diagnostics And treatments ventricular violations rhythm. Prevention sudden cardiac death medicinal And interventional methods.	UK-1, 3; OPK -1, 4, 7, 11; PC-.1, 2, 3, 4, 5, 6, 10,12	2
3	**Syndrome dysplasia connecting fabrics. Prolapse mitral valve.** The lecture covers the issues of relevance of diagnostics and treatment of connective tissue dysplasia syndrome, epidemiological data. Definition, etiology, pathogenesis, risk factors, classifications, features of clinical manifestations of mitral valve prolapse depending on the degree of regurgitation, diagnostic criteria at the present stage. Treatment, approaches to prescribing therapy, choosing a therapy method, indications for prescribing surgical intervention.	UK-1, 3; OPK -1, 4, 7, 11; PC-.1, 2, 3, 4, 5, 6, 10,12	2
4	**Infectious endocarditis.** The lecture emphasizes the relevance and significance of the problem under study, covers issues of etiology, pathogenesis, classification, provides a definition, examines risk groups and predisposing factors. The clinical picture, kidney damage, skin damage in infective endocarditis, special forms of infective endocarditis, criteria are considered. diagnostics And differential diagnosis, rules research blood on	UK-1, 3; OPK -1, 4, 7, 11; PC-.1, 2, 3, 4, 5, 6, 10,12	2

	sterility, echocardiography data. Treatment depending on the etiologic agent and clinical situation. Complications of infective endocarditis. Prevention infectious endocarditis.		
5	**Chronic cardiac failure.** The lecture covers the issues of relevance of diagnostics and treatment of chronic heart failure syndrome, provides a definition, classification, examines the etiology and pathogenesis, clinical picture and differential diagnostics of systolic and diastolic dysfunction of the left ventricle. Approaches to the choice of monotherapy or a combination of drugs depending on the severity of chronic heart failure. Most rational combinations drugs. Indications To surgical methods treatment.	UK-1, 3; OPK -1, 4, 7, 11; PC-.1, 2, 3, 4, 5, 6, 10,12	2
6	**Thromboembolism pulmonary arteries.** The lecture emphasizes the relevance and significance of the problem under study, covers issues of etiology, pathogenesis, classification, provides a definition, examines risk groups and predisposing factors. Clinical manifestations of pulmonary embolism and deep vein thrombosis of the lower extremities. Diagnostics and differential diagnostics. Evaluation of the results of additional research methods. Prognosis. Treatment medicinal, indications To surgical methods treatment. Prevention	UK-1, 3; OPK -1, 4, 7, 11; PC-.1, 2, 3, 4, 5, 6, 10,12	2
7	**Preoperative Preparation cardiology sick.** Relevance, goals and objectives of preoperative preparation of patients. Features of preoperative preparation of patients with cardiovascular pathology and prevention of thromboembolic complications. Differential diagnostics of repolarization disorders by ECG, drug tests. Preoperative preparation of patients with rhythm disorders. Prevention of life-threatening arrhythmias. Circulatory failure: definition, etiology And pathogenesis, classification, criteria diagnostics, differential diagnosis, treatment, prevention. Drug therapy and its impact on forecast V peri- And postoperative period.	UK-1, 3; OPK -1, 4, 7, 11; PC-.1, 2, 3, 4, 5, 6, 10,12	2
Total hours			14

2.3. Thematic plan clinical practical classes And their content

No. p/p	Topic Title clinical practical classes	Content themes clinical practical classes	Codes formed competencies and their indicators achievements	Types of control	Lab or capacity (hours) sy)
1	**Chronic ischemic heart disease heart disease (coronary heart disease). Stable angina pectoris**	**Theoretical Part:** Epidemiology, etiology, pathogenesis And factors risk of coronary heart disease. Classification. Clinical and pathogenetic forms of coronary heart disease. Clinical manifestations of stable angina, diagnostic criteria, differential diagnostics. Load tests, their significance. Treatment of coronary heart disease depending on the functional class of angina, indications for endovascular and other surgical treatment methods. Diagnostic criteria for functional classes of stable angina. Painless ischemia (diagnostic criteria, treatment, prevention). Prevention diseases (primary, secondary). **Practical part:** analysis of a thematic patient, supervision of patients, solving situational problems, designing a workbook, working with ECG films, educational, scientific, medical and reference literature, Russian clinical guidelines for the diagnosis and treatment of stable angina, the standard of specialized medical care), participation in the work of the VEM office, coronary angiography, completing tasks according to the sample, reporting on on duty, drawing up conclusions on ECG data echocardiography (methods, diagnostic significance).	UK-1. ID: 1.1,1.2,1.3,1.4,1.5. UK-3. ID 3.1. OPK-1. ID:1.1,1.2,1.3. OPK-4. ID:4.1, 4.2,4.3,4.4,4.5. OPK-7. ID:7.1, 7.2,7.3,7.5, 7.6,7.7. OPK-11. ID:11.1, 11.2,11.3,11.4,11.5 PC-1. ID: 1.3,1.4. PC-2. ID: 2.1,2.2,2.3,2.4,2.5. PC-3. ID: 3.1,3.2,3.3,3.4,3.5, 3.6. PC-4. ID: 4.1,4.2,4.3. PC-5. ID: 5.1,5.2,5.3,5.4,5.5. PC-6. ID: 6.1,6.2. PC-10. ID: 10.1. PC-12. ID: 12.1,12.2,12.3.	Testing Front survey Interactive survey .	3.4
2	**Unstable angina. Acute myocardial infarction. Practical skills in certification**	**Theoretical Part:** Epidemiology ,etiology, pathogenesis of unstable angina and acute myocardial infarction. Classifications. Clinical manifestations. Main diagnostic criteria. Troponin test: significance. Differential diagnostics. Treatment and prevention. **Practical part:** Work on the standard simulation module (SIM) No. 40, analysis of situational tasks with various forms of unstable angina and acute myocardial infarction. Solving situational problems, registration working notebooks, educational stories diseases, Job With films ECG, V etc. on monitor, educational, scientific, medical And reference literature, National recommendations By diagnostics And treatment sick sharp	UK-1. ID: 1.1,1.2,1.3,1.4,1.5. UK-3. ID 3.1. OPK-1. ID:1.1,1.2,1.3. OPK-4. ID:4.1, 4.2,4.3,4.4,4.5. OPK-7. ID:7.1, 7.2,7.3,7.5, 7.6,7.7. OPK-11. ID:11.1, 11.2,11.3,11.4,11.5 PC-1. ID: 1.3,1.4. PC-2. ID: 2.1,2.2,2.3,2.4,2.5.	Testing Front Interacti survey public survey .	3.4

	simulation center	myocardial infarction with ST segment elevation ECG, for the treatment of acute coronary syndrome without persistent ST segment elevation on ECG, the standard of specialized medical care, completing tasks according to the sample. Drawing up conclusions on ECG, troponin test (methods, meaning).	PC-3. ID: 3.1,3.2,3.3,3.4,3.5, 3.6. PC-4. ID: 4.1,4.2,4.3. PC-5. ID: 5.1,5.2,5.3,5.4,5.5. PC-6. ID: 6.1,6.2. PC-10. ID: 10.1. PC-12. ID: 12.1,12.2,12.3.		
3	**Complications of myocardial infarction. Acute cardiac insufficiency . Cardiogenic shock. Practical skills in the certification and simulation center**	**Theoretical part:** Know the classification of complications of myocardial infarction. Definition And diagnostics acute cardiac insufficiency, cardiogenic shock, indications, contraindications To manipulations By topic classes, algorithm for performing manipulations, technique for performing manipulations on the simulator in accordance with the algorithms for their implementation. **Practical Part:** Job on SIME No. 08. Cardiopulmonary resuscitation on a phantom (carrying out indirect cardiac massage with imitation of cardiac response; taking an ECG with display on a monitor in five leads; carrying out artificial ventilation of the lungs (on dummies). Work with educational, scientific, medical and reference literature, Russian recommendations for the diagnosis and treatment of acute heart failure, By rendering ambulance medical help at cardiogenic shock, the standard of specialized medical care.	UK-1. ID: 1.1,1.2,1.3,1.4,1.5. UK-3. ID 3.1. OPK-1. ID:1.1,1.2,1.3. OPK-4. ID:4.1, 4.2,4.3,4.4,4.5. OPK-7. ID:7.1, 7.2,7.3,7.5, 7.6,7.7. OPK-11. ID:11.1, 11.2,11.3,11.4,11.5 PC-1. ID: 1.3,1.4. PC-2. ID: 2.1,2.2,2.3,2.4,2.5. PC-3. ID: 3.1,3.2,3.3,3.4,3.5, 3.6. PC-4. ID: 4.1,4.2,4.3. PC-5. ID: 5.1,5.2,5.3,5.4,5.5. PC-6. ID: 6.1,6.2. PC-10. ID: 10.1. PC-12. ID: 12.1,12.2,12.3.	Testing Front Interacti survey public survey .	3.4
4	**Tachyarrhythmias. Practical skills in the certification and simulation center**	**Theoretical Part:** Know classification, clinic, pathogenesis, diagnostics and differential diagnostics, treatment of tachyarrhythmias depending on the nosology, indications, contraindications for manipulations on the topic of the lesson, algorithm for performing manipulations, technique for performing manipulations on the simulator in accordance with the algorithms for their implementation. **Practical Part:** Job on SIMah №№ 04, 05. Conducting defibrillation with imitation of cardiac response; ECG recording with display on a monitor in five leads; work with educational, scientific, medical and reference literature, recommendations of the Russian Society of Cardiologists, the All-Russian Society of Cardiologists and the Association of Cardiologists of the Surgeons for the diagnosis and treatment of cardiac rhythm and conduction disorders, standards of specialized medical care for ventricular tachycardia, atrial fibrillation and flutter, standards of primary health care.	UK-1. ID: 1.1,1.2,1.3,1.4,1.5. UK-3. ID 3.1. OPK-1. ID:1.1,1.2,1.3. OPK-4. ID:4.1, 4.2,4.3,4.4,4.5. OPK-7. ID:7.1, 7.2,7.3,7.5, 7.6,7.7. OPK-11. ID:11.1, 11.2,11.3,11.4,11.5 PC-1. ID: 1.3,1.4. PC-2. ID: 2.1,2.2,2.3,2.4,2.5. PC-3. ID: 3.1,3.2,3.3,3.4,3.5, 3.6. PC-4. ID: 4.1,4.2,4.3. PC-5. ID: 5.1,5.2,5.3,5.4,5.5.	Testing Front Interacti survey public survey .	3.4

			PC-6. ID: 6.1,6.2. PC-10. ID: 10.1. PC-12. ID: 12.1,12.2,12.3.		
5	**Bradyarrhythmia. Practical skills in the certification and simulation center**	**Theoretical Part:** Know classification, clinic, pathogenesis, diagnostics, differential diagnostics, treatment of bradyarrhythmias depending on the nosology, indications, contraindications for manipulations on the topic of the lesson, algorithm for performing manipulations, technique for performing manipulations on the simulator in accordance with the algorithms for their implementation. **Practical part:** Work on SIMs No. 04, 05; conducting transthoracic cardiac stimulation with the corresponding physiological reaction HELL And Heart rate on monitor; removal ECG With display on a monitor in five leads; work with educational, scientific, medical and reference literature, Russian clinical guidelines for Holter ECG monitoring, for providing emergency medical care for bradycardia, and the standard of specialized medical care),	UK-1. ID: 1.1,1.2,1.3,1.4,1.5. UK-3. ID 3.1. OPK-1. ID:1.1,1.2,1.3. OPK-4. ID:4.1, 4.2,4.3,4.4,4.5. OPK-7. ID:7.1, 7.2,7.3,7.5, 7.6,7.7. OPK-11. ID:11.1, 11.2,11.3,11.4,11.5 PC-1. ID: 1.3,1.4. PC-2. ID: 2.1,2.2,2.3,2.4,2.5. PC-3. ID: 3.1,3.2,3.3,3.4,3.5, 3.6. PC-4. ID: 4.1,4.2,4.3. PC-5. ID: 5.1,5.2,5.3,5.4,5.5. PC-6. ID: 6.1,6.2. PC-10. ID: 10.1. PC-12. ID: 12.1,12.2,12.3.	Testing Front Interacti survey public surve y	3.4
6	**Pulmonary embolism**	**Theoretical Part:** Definition, etiology, pathogenesis. Modern classification. Clinic, features of anamnesis collection. Diagnostics, differential diagnostics. Treatment principles. **Practical Part:** analysis thematic sick, curation sick, solving situational problems, designing a workbook, working with handouts, educational, scientific, medical and reference literature, Russian clinical recommendations By diagnostics And treatment pulmonary hypertension, standard of specialized medical care, participation in the work of the X-ray room, echocardiography, clinical and biochemical laboratories, completing assignments according to a sample, reporting on duty, drawing up conclusions on laboratory work diagnostic methods.	UK-1. ID: 1.1,1.2,1.3,1.4,1.5. UK-3. ID 3.1. OPK-1. ID:1.1,1.2,1.3. OPK-4. ID:4.1, 4.2,4.3,4.4,4.5. OPK-7. ID:7.1, 7.2,7.3,7.5, 7.6,7.7. OPK-11. ID:11.1, 11.2,11.3,11.4,11.5 PC-1. ID: 1.3,1.4. PC-2. ID: 2.1,2.2,2.3,2.4,2.5. PC-3. ID: 3.1,3.2,3.3,3.4,3.5, 3.6. PC-4. ID: 4.1,4.2,4.3. PC-5. ID: 5.1,5.2,5.3,5.4,5.5. PC-6. ID: 6.1,6.2. PC-10. ID: 10.1. PC-12. ID: 12.1,12.2,12.3.	Testing Front Interacti survey public surve y	3.4
7	**Hypertension**	**Theoretical Part:** Epidemiology, etiology, pathogenesis And factors risk	UK-1. ID: 1.1,1.2,1.3,1.4,1.5.	Testing	3.4

	oh disease. Treatment, prevention of complications	cardiovascular complications. Classification of hypertensive crises. Clinical manifestations. Main diagnostic criteria. Differential diagnostics. Complications (diagnostic criteria, emergency care, prevention). Treatment, prevention and rehabilitation measures. **Practical Part:** analysis thematic sick, curation sick, solving situational problems, designing a workbook, interpreting laboratory and instrumental indicators, work with handouts, educational, scientific, medical and reference literature, clinical guidelines for the diagnosis and treatment of arterial hypertension, and the standard of specialized medical care), standard of primary health care for primary arterial hypertension participation in the work ECG room, completing tasks according to the sample, duty report. Design conclusions By ECG, daily blood pressure monitoring .	UK-3. ID 3.1. OPK-1. ID:1.1,1.2,1.3. OPK-4. ID:4.1, 4.2,4.3,4.4,4.5. OPK-7. ID:7.1, 7.2,7.3,7.5, 7.6,7.7. OPK-11. ID:11.1, 11.2,11.3,11.4,11.5 PC-1. ID: 1.3,1.4. PC-2. ID: 2.1,2.2,2.3,2.4,2.5. PC-3. ID: 3.1,3.2,3.3,3.4,3.5, 3.6. PC-4. ID: 4.1,4.2,4.3. PC-5. ID: 5.1,5.2,5.3,5.4,5.5. PC-6. ID: 6.1,6.2. PC-10. ID: 10.1. PC-12. ID: 12.1,12.2,12.3.	Frontal Interacti survey public surve y	
8	**Secondary arterial hypertension. Features of treatment in dependencies from nosology**	**Theoretical part:** Epidemiology, etiology, pathogenesis of secondary arterial hypertension. Classification. Clinical manifestations. Main diagnostic criteria, features of collecting complaints, anamnesis and physical examination. Differential diagnostics. Complications (diagnostic criteria, emergency care, prevention). Treatment depending on the nosology, prevention. **Practical part:** analysis of a case study or archival medical history, curation sick, solution situational tasks, design workbook, interpretation laboratory and instrumental indicators, Job with handouts, educational, scientific, medical and reference literature, clinical guidelines for the diagnosis and treatment of arterial hypertension in pregnant women, the standard of specialized medical care, participation in work ECG and echocardiography rooms, implementation tasks By sample, report By on duty. Design ECG findings, daily blood pressure monitoring.	UK-1. ID: 1.1,1.2,1.3,1.4,1.5. UK-3. ID 3.1. OPK-1. ID:1.1,1.2,1.3. OPK-4. ID:4.1, 4.2,4.3,4.4,4.5. OPK-7. ID:7.1, 7.2,7.3,7.5, 7.6,7.7. OPK-11. ID:11.1, 11.2,11.3,11.4,11.5 PC-1. ID: 1.3,1.4. PC-2. ID: 2.1,2.2,2.3,2.4,2.5. PC-3. ID: 3.1,3.2,3.3,3.4,3.5, 3.6. PC-4. ID: 4.1,4.2,4.3. PC-5. ID: 5.1,5.2,5.3,5.4,5.5. PC-6. ID: 6.1,6.2. PC-10. ID: 10.1. PC-12. ID: 12.1,12.2,12.3.	Testing Front Interacti survey public surve y	3.4
9	**Chronic heart disease insufficiency**	**Theoretical part:** Relevance of diagnosis and treatment of chronic heart failure syndrome, definition, classification, etiology And pathogenesis, clinical painting And differential diagnostics systolic And diastolic dysfunctions left ventricle. Approaches to the choice of drugs depending on the stage of chronic heart disease	UK-1. ID: 1.1,1.2,1.3,1.4,1.5. UK-3. ID 3.1. OPK-1. ID:1.1,1.2,1.3. OPK-4. ID:4.1, 4.2,4.3,4.4,4.5. OPK-7. ID:7.1, 7.2,7.3,7.5,	Frontal testing ny Interacti survey	3.4

		insufficiency. Most rational combinations drugs. Indications to surgical treatment methods. Prevention, prognosis. **Practical Part:** analysis thematic sick, curation sick, solving situational problems, preparing a workbook, working with handouts, educational, scientific, medical and reference literature, clinical guidelines for the diagnosis and treatment of chronic heart failure, the standard of specialized medical care, participating in the work of the echocardiography room, clinical and biochemical laboratory, performing tasks according to the model, duty report, preparation of conclusions on laboratory diagnostic methods.	7.6,7.7. OPK-11. ID:11.1, 11.2,11.3,11.4,11.5 PC-1. ID: 1.3,1.4. PC-2. ID: 2.1,2.2,2.3,2.4,2.5. PC-3. ID: 3.1,3.2,3.3,3.4,3.5, 3.6. PC-4. ID: 4.1,4.2,4.3. PC-5. ID: 5.1,5.2,5.3,5.4,5.5. PC-6. ID: 6.1,6.2. PC-10. ID: 10.1. PC-12. ID: 12.1,12.2,12.3.	public surve y	
10	**Infective endocarditis.** **Final lesson (credit)**	**Theoretical Part:** relevance And significance infectious endocarditis, epidemiology, etiology, pathogenesis, classification, definition, risk groups and predisposing factors. Clinical picture, kidney and skin lesions in infective endocarditis, special forms of infective endocarditis, diagnostic criteria and differential diagnosis, rules for blood sterility testing, echocardiography data. Treatment depending on the etiologic agent and clinical situation. Complications of infective endocarditis. Prevention of infective endocarditis. **Practical part:** analysis of a case study or archival medical history, curation sick, solution situational tasks, design workbook, interpretation laboratory and instrumental indicators, Job with handouts, educational, scientific, medical and reference literature, recommendations for rational pharmacotherapy of patients with cardiovascular diseases, standards of specialized medical care, participation in work echocardiography room, implementation tasks By sample, report By on duty. Design ECG findings, laboratory research methods. **Theoretical part:** interview on control questions for the midterm certifications (credit), answers on questions test control (in the Moodle system). **Practical Part:** solution situational tasks.	UK-1. ID: 1.1,1.2,1.3,1.4,1.5. UK-3. ID 3.1. OPK-1. ID:1.1,1.2,1.3. OPK-4. ID:4.1, 4.2,4.3,4.4,4.5. OPK-7. ID:7.1, 7.2,7.3,7.5, 7.6,7.7. OPK-11. ID:11.1, 11.2,11.3,11.4,11.5 PC-1. ID: 1.3,1.4. PC-2. ID: 2.1,2.2,2.3,2.4,2.5. PC-3. ID: 3.1,3.2,3.3,3.4,3.5, 3.6. PC-4. ID: 4.1,4.2,4.3. PC-5. ID: 5.1,5.2,5.3,5.4,5.5. PC-6. ID: 6.1,6.2. PC-10. ID: 10.1. PC-12. ID: 12.1,12.2,12.3.	Testing Front Interacti survey public surve y	3.4
Total hours					34

2.4. Interactive forms training

In order to activate students' cognitive activity, **interactive teaching methods** (discussions, interactive surveys, computer simulations, classes at the certification and simulation center, etc.).

Item No.	Topic clinical practical lesson	We work on the bone in hours	Interactive form of education	Labor intensity in hours, V % from the lesson
1	Chronic ischemic Heart disease. Stable angina. Treatment. Prevention	3.4	Interactive survey	20 minutes (0.33 hours) / 11.5%
2	Unstable angina pectoris. Acute myocardial infarction. Treatment, prevention. Practical skills in certification-simulation center	3.4	Roleplaying game SIM #40	20 minutes (0.33 hours) / 11.5%
3	Complications of myocardial infarction. Acute cardiac failure. Cardiogenic shock. Practical skills in certification-simulation center	3.4	Roleplaying game, SIM #08	20 minutes (0.33 hours) / 11.5%
4	Tachyarrhythmia. Practical skills V Certification and Simulation Center	3.4	Roleplaying game, SIM #04, SIM No. 05	20 minutes (0.33 hours) / 11.5%
5	Bradyarrhythmia. Practical skills in certification simulation center	3.4	Roleplaying game, SIM #04, SIM No. 05	20 minutes (0.33 hours) / 11.5%
6	Thromboembolism pulmonary arteries	3.4	Cerebral storm	20 minutes (0.33 hours) / 11.5%
7	Hypertensive disease. Treatment, prevention of complications	3.4	Video film	20 minutes (0.33 hours) / 11.5%
8	Secondary arterial hypertension. Peculiarities treatment depending on the nosology.	3.4	Interactive survey	20 minutes (0.33 hours) / 11.5%
9	Chronic heart failure	3.4	Video film	20 minutes (0.33 hours) / 11.5%
10	Infectious endocarditis. Final lesson (test)	3.4	Interactive survey	20 minutes (0.33 hours) / 11.5%

2.5. Criteria ratings students' knowledge

The assessment of learning outcomes is carried out in accordance with the “Regulations on the assessment system for the learning outcomes of students of the Federal State Budgetary Educational Institution of Higher Education Amur State Medical Academy of the Ministry of Health of Russia”.

The basis For definitions level knowledge, skills, skills are evaluation criteria :

- completeness and correctness:
- correct, accurate answer;
- correct, But incomplete or inaccurate answer;
- wrong answer;
- No answer.

At exhibiting marks taken into account classifications errors And their quality:

- rude errors;
- of the same type errors;
- not rude errors;
- shortcomings.

Distribution marks on clinical practical classes

No. p/p	Topic clinical practical classes	Theoretical what part	Practical part	General grade
1.	Chronic ischemic heart disease of the heart. Stable angina . Treatment. Prevention.	2- 5	2- 5	2- 5
2.	Unstable angina. Acute myocardial infarction. Treatment, prevention. Practical skills V certification-simulation center	2- 5	2- 5	2- 5
3.	Complications of myocardial infarction. Acute heart failure. Cardiogenic shock. Practical skills in certification-simulation center	2- 5	2- 5	2- 5
4.	Tachyarrhythmia. Practical skills V certification-simulation center	2- 5	2- 5	2- 5
5	Bradyarrhythmia. Practical skills V certification-simulation center	2- 5	2- 5	2- 5
6	Thromboembolism pulmonary arteries	2- 5	2- 5	2- 5
7	Hypertension . Treatment, prevention complications	2- 5	2- 5	2- 5
8	Secondary arterial hypertension. Features treatments V dependencies from nosology.	2- 5	2- 5	2- 5
9	Chronic heart disease failure	2- 5	2- 5	2- 5
10	Infectious endocarditis. Final lesson (test)	2- 5	2- 5	2- 5
	Average score			

Evaluation scales current knowledge control

The success of students in mastering the discipline "Differential diagnostics in cardiology" is determined by the quality of acquisition of knowledge, skills and practical skills, grade is exhibited By 5-ti point system: "5" - Great, "4"
- Fine, "3" - satisfactory, "2" - unsatisfactory.

Criteria assessments

Level success	Mark By 5-ti point scale
90- 100%	"5"
80- 89%	"4"
70- 79%	"3"
Below 70%	"2"

Input control

It is being held on first occupation, includes testing V Moodle system Access mode: https://educ-amursma.ru/mod/quiz/view.php?id=12334
Test control includes questions By disciplines, studied on previous courses.

Current control

Current control includes original And day off control knowledge.
Initial control **is** carried out by the teacher at the beginning of each lesson in the form of a frontal survey and solution of situational problems.
Final control – includes control over the methodology for performing practical tasks skills and registration of the protocol, testing in the Moodle system.
Mode access: https://educ-amursma.ru/mod/quiz/view.php?id=12291
The final grade during the current knowledge assessment is given on the day of the lesson, as the arithmetic mean result for all types of activities provided for in the given lesson of the discipline's work program.

Criteria ratings (marks) theoretical parts

"5" - for depth and completeness mastering the content of the educational material, in which the student can easily navigate, for the ability to connect theoretical questions with practical ones, express and justify their judgments, correctly and logically present the answer; when testing, allows up to 10% of erroneous answers.
"4" - the student has fully mastered the educational material, is oriented in it, correctly states the answer, but the content and form have some inaccuracies; during testing, allows up to 20% of erroneous answers.
"3" - student took possession knowledge And understandings main provisions educational material, but presents it incompletely, inconsistently, does not know how to express and justify his judgments; when testing, allows up to 30% of erroneous answers.
"2" - the student has fragmented and unsystematic knowledge of the educational material, is unable to distinguish between the main and the secondary, makes mistakes in defining concepts, distorts their meaning, presents the material in a disorderly and uncertain manner, and makes more than 30% of erroneous answers when tested.

Criteria ratings practical parts

"5" - the student supervises the thematic patient on a daily basis, has fully mastered the practical skills skills and abilities provided for by the work program of the discipline (correctly interprets the patient's complaints, anamnesis, objective examination data, formulates a clinical diagnosis, prescribes examination and treatment, interprets clinical, laboratory and instrumental indicators taking into account the norm).
"4" – the student supervises the thematic patient on a daily basis, has fully mastered practical skills and skills required by the job program of the discipline, but allows for some inaccuracies.
"3" - the student does not regularly supervise the patient, the student has only some practical skills and abilities.
"2" - the student has visited the supervised patient less than 4 times, performs practical skills and abilities with gross errors.

Working off debts By discipline

If a student misses a class for a valid reason, he has the right to work it off his And get maximum mark, provided working discipline program for this activity. A valid reason must be documented .

If the student missed class By disrespectful reason or receives mark "2" for all types of activities in the lesson, then he is obliged to work it off. In this case, the mark received for all types of activities is multiplied by 0.8.

If a student is excused from a class at the request of the dean's office (participation in sports, cultural and other events), then he is given a mark for this class. mark "5" given that provision report O execution mandatory extracurricular independent work on the topic of the missed class.

Criteria assessments intermediate certifications

Intermediate certification is being carried out V 3 stages:

1. Test control V the "Moodle" system .
   Mode access https://educ-amursma.ru/course/view.php?id=90

2. Change practical skills (competencies).
3. Interview By questions To credit And solution situational task.

Criteria final ratings (intermediate certification)

Excellent - for the depth and completeness of mastery of the content of the educational material, in which the student easily navigates, for the ability to combine theoretical issues with practical ones, express and justify your opinions, competently and it's logical state the answer; during testing, up to 10% of incorrect answers are allowed. Practical skills and abilities provided by the working program of the discipline have been fully mastered.

"Good" - the student has fully mastered the educational material, is oriented in it, correctly states the answer, but the content and form have some inaccuracies; during testing allows up to 20% of erroneous answers. Fully practical skills and abilities provided by the work program of discipline, but allows some inaccuracies

"Satisfactory" - the student has mastered the knowledge and understanding of the basic principles educational material, But sets out his incomplete, inconsistently, Not can

express and justify their judgments; when tested, allows up to 30% of incorrect answers. Possesses only some practical skills and abilities.

"Unsatisfactory" - the student has fragmented and unsystematic knowledge of the educational material, does not know how to distinguish between the main and the secondary, makes mistakes in defining concepts, distorts their meaning, disorderly and not confidently sets out material, during testing allows more than 30% of erroneous answers. Practical skills and abilities are performed with gross errors.

Based on the results of different assessments, an average grade is given in favor of the student. Student Maybe claim on receiving ratings "Great" automatically,

if he has won a prize in disciplinary or interdisciplinary Olympiads (university, regional) and has an average score based on the current academic performance of not below 4.8 points **.** The student can refuse the automatic grade and take the exam or test together with the group on a general basis.

Criteria assessments intermediate certifications (XII semester)

Stages	**Mark By 5- ti point scale**	**Binary scale**
Test control V Moodle system	3- 5	**passed**
Execution V full volume practical parts disciplines	3- 5	
Change practical skills (control formations competencies)	3- 5	
Test control V Moodle system	2	**Not passed**
Execution V full volume practical parts disciplines	2	
Change practical skills (control formations competencies)	2	

"Passed" - the student has fully mastered the educational material and is able to navigate it, correctly states the answer, and allows up to 30% of incorrect answers when tested. Practical skills and skills required by the job program of discipline.

"Failed" - the student has fragmented and unsystematic knowledge of the educational material, is unable to distinguish between the main and secondary, makes mistakes in defining concepts, distorts their meaning, presents the material in a disorderly and uncertain manner, and makes more than 30% of erroneous answers during testing. Performs practical skills and abilities with gross errors.

2.6. Independent Job students: auditorium And extracurricular

Independent work of students consists of two components: classroom and extracurricular (mandatory for all students and optional) work.

Auditorium independent Job students

Students' independent work in the classroom makes up 25% of the allotted time. on educational class. Auditorium Job includes **:** main didactic

tasks of independent work of students under the guidance of a teacher: consolidation of knowledge and skills acquired during the study academic discipline in lectures and practical classes; preventing their forgetting; expanding and deepening the educational material; developing the ability and skills of independent work; developing independent thinking and creative abilities of students.

Students' classroom work includes: checking their current knowledge on the topic of the practical lesson in the form of an oral or written survey, test control, solving situational problems, interpreting laboratory and instrumental indicators, drawing up a plan for examination and treatment. Familiarization with the available at the department methodological manuals, tables, schemes, stands, tablets. Supervision of patients, development of practical skills and abilities in the certification and simulation center. Individual work with mastering and implementation practical skills.

Extracurricular independent Job students

The main forms of extracurricular independent work can be: studying basic and additional educational and scientific literature; solving situational problems, test assignments, working in an online class; oral preparation messages (reports); writing educational stories diseases; duty V clinic; preparation for a duty report, performance of diagnostic manipulations; implementation of observation and self-observation of specific clinical phenomena being studied etc. This type of educational activity should be based on the activity, initiative, consciousness and independent work of students.

Extracurricular independent Job students

Item No.	Topic of clinical practice classes	Time for student preparation for class (hours)	Forms extracurricular independent works	
			Mandatory And identical for all students Duty V in hospital, duty report	By choice student
1	Chronic ischemic heart disease. Stable angina voltage. Treatment. Prevention	2	Preparation for theoretical issues (reading lecture material, basic and additional literature, methodical recommendations, abstracting, drafting synopsis, schemes, algorithm And etc.). Solution (or compilation) tasks, tests, writing recipes, algorithms, execution tasks By sample, Job V Internet class.	Report or computer presentation By topic: "Cardiac syndrome X", "Surgical methods of treating HIHD", "Sanatorium and resort treatment for diseases of the circulatory system"
2	Unstable angina pectoris. Spicy infarction . Treatment, prevention Practical skills V certification-	2	Preparation on theoretical issues (reading lecture material, basic and additional literature, clinical guidelines, abstracting, writing notes, schemes, algorithm And etc.).	Report or computer presentation By topic: "Variant angina" « Features of myocardial infarction at persons young

	simulation center		Solving (or composing) problems, tests, writing recipes, algorithms, execution tasks By sample, Job V Internet class.	age."
3	Complications myocardial infarction. Acute heart failure. Cardiogenic shock. Practical skills in the certification- simulation center	**2**	Preparation on theoretical issues (reading lecture material, basic and additional literature, methodological recommendations, abstracting, compiling notes, diagrams, algorithms, etc.). Solving (or compiling) problems, tests, writing recipes, algorithms, execution tasks By sample, Job V Internet class.	Preparation presentations or making a table, tablet on the topic: « Syndrome Dressler", "Breaks myocardium."
4	Tachyarrhythmias. Practical skills in the certification- simulation center	**2**	Preparation on theoretical issues (reading lecture material, basic and additional literature, methodological recommendations, abstracting, writing notes, schemes, algorithm And etc.). Solving (or composing) problems, tests, writing recipes, algorithms, Job V Internet class.	Manufacturing tablet or table on the topic: "Interventional methods of treatment and prevention of tachyarrhythmias."
5	Bradyarrhythmias. Practical skills in the certification- simulation center	**2**	Preparation on theoretical issues (reading lecture material, basic and additional literature, methodological recommendations, abstracting, compiling notes, diagrams, algorithms, etc.). Solving (or compiling) problems, tests, writing recipes, algorithms, execution tasks By sample, Job V Internet class.	Preparation presentations on the topic: "Features of management of pregnant women with disorders heart rate"
6	Thromboembolism pulmonary artery	**2**	Preparation on theoretical issues (reading lecture material, basic and additional literature, methodological recommendations, abstracting, compiling notes, diagrams, algorithms, etc.). Solving (or compiling) problems, tests, writing recipes, algorithms, execution tasks By sample, Job V Internet class.	Preparation presentations, or abstract review on the topic: " Modern antithrombotic drugs: classification, indications and contraindications "
7	Hypertension . Treatment, prevention of complications	**2**	Preparation on theoretical issues (reading lecture material, basic and additional literature, methodological recommendations, abstracting, compiling notes, diagrams, algorithms, etc.). Solving (or compiling) problems, tests, writing recipes, algorithms, execution tasks according to the sample, work in the online class.	Preparing a presentation, tables, tablets on the topic: "Antihypertensive drugs: classification, indications and contraindications for individual groups of drugs, "effective combinations".
8	Secondary arterial hypertension.	**2**	Preparation for theoretical issues (reading lecture	Preparation presentations on the topic: "Endocrine

	Peculiarities treatments depending on the nosology		material, basic and additional literature, methodological recommendations, abstracting, compiling notes, diagrams, algorithms, etc.). Solving (or compiling) problems, tests, writing recipes, algorithms, execution tasks By sample, Job V Internet class.	arterial hypertension", "Renal arterial hypertension", "Review of clinical guidelines for the diagnosis and treatment of arterial hypertension"
9	Chronic heart failure	**2**	Preparation on theoretical issues (reading lecture material, basic and additional literature, methodological recommendations, abstracting, compiling notes, diagrams, algorithms, etc.). Solving (or compiling) problems, tests, writing recipes, algorithms, execution tasks according to the sample, work in the online class.	Preparation presentations, tables on topic: "Review of Clinical Guidelines By diagnostics And treatment of chronic heart failure."
10	Infective endocarditis	**2**	Preparation on theoretical issues (reading lecture material, basic and additional literature, methodological recommendations, abstracting, compiling notes, diagrams, algorithms, etc.). Solving (or compiling) problems, tests, writing recipes, algorithms, execution tasks according to the sample, work in the online class.	Preparation presentations, tables, tablets on the topic: "Nonbacterial thromboendocarditis."
	Interim assessment (credit)	**2**	Preparation for solving clinical-situational problems and intermediate tests control knowledge. Preparing for an interview on questions To credit	
	Labor intensity V hours	**20**	**20**	**4**
	Total labor intensity (in hours)	**24**		

2.7. Research and development (project) Job

Research (project) work of students (RWS) is a mandatory section of the study of the discipline and is aimed at the comprehensive formation of universal, general professional And professional competencies students, involves the study of specialized literature and other scientific and technical information on the achievements of domestic and foreign science and technology in the relevant field of knowledge, participation in scientific research, etc. The topics of research can be chosen by students independently in consultation with the teacher or from the list below.

Approximate topics research (project) works students:

1. Peculiarities clinical currents infectious endocarditis V Amur region.
2. Clinical and functional features of pulmonary embolism in patients of the Amur Regional Clinical Hospital.
3. Peculiarities management pregnant With prosthetic valves hearts.

4. Peculiarities clinical currents syndrome dysplasia connecting fabrics in the Amur region.
5. Current questions diagnostics And treatments violations cardiac rhythm.

For ratings Research accepted binary scale evaluation: "passed", "not "passed."

3. EDUCATIONAL AND METHODOLOGICAL, MATERIAL AND TECHNICAL AND INFORMATION SUPPORT OF DISCIPLINE

3.1. Main literature

1. Martynov, A. I. Internal diseases: T. I.: textbook / edited by Martynov A. I., Kobalava AND. D. , Moiseeva WITH. IN. - Moscow : GEOTAR-Media, 2021. - 784 With. - ISBN 978-5- 9704-5886-0. Access mode: by subscription. http://www.studmedlib.ru/book/ISBN9785970458860.html
2. Martynov, A. I. Internal diseases: Vol. II.: textbook / edited by Martynov A. I., Kobalava AND. D. , Moiseeva WITH. IN. - Moscow : GEOTAR-Media, 2021. - 704 With. - ISBN 978-5- 9704-5887-7. Access mode: by subscription. http://www.studmedlib.ru/book/ISBN9785970458877.html

3.2. Additional literature

1. Ruksin, V. V. Emergency outpatient cardiology: a brief guide / Ruxin IN. IN. - Moscow : GEOTAR-Media, 2018. - 256 With. - ISBN 978-5-9704-4791-8. Access mode: by subscription. http://www.studmedlib.ru/book/ISBN9785970447918.html
2. Belyalov, F. AND. Arrhythmias hearts / F. AND. Belyalov. - 8th ed. , recycled and add. - Moscow : GEOTAR-Media, 2020. - 448 p. - ISBN 978-5-9704-5641-5. - Access mode: by subscription. http://www.studmedlib.ru/book/ISBN9785970456415.html
3. Reznik, E. IN. Clinical norms. Cardiology / E. IN. Reznik, AND. G. Nikitin. - Moscow : GEOTAR-Media, 2020. - 448 p. - ISBN 978-5-9704-5851-8. Access mode: by subscription. http://www.studmedlib.ru/book/ISBN9785970458518.html
4. Arutyunov, G. P. Diagnostics And treatment diseases hearts And vessels / G. P. Arutyunov - Moscow : GEOTAR-Media, 2015. - 504 With. - ISBN 978-5-9704-3146-7. Mode access : by subscription. http://www.studmedlib.ru/book/ISBN9785970431467.html

3.3. Educational and methodological security disciplines, prepared by staff departments

Educational benefits With vulture Coordination Advice By areas education "Healthcare And medical sciences", DV RUMTS And etc.

1. Sivyakova O.N., Konyuk E.F., Muzychenko L.V. Neurocirculatory dystonia. - Study guide. - Blagoveshchensk, 2009. - 20 p.
2. Sivyakova O.N. Diagnostics and treatment of angina. - Study guide. - Blagoveshchensk, 2010. - 47s.
3. Landyshev Yu.S., Pogrebnaya M.V., Vakhnenko Yu.V., Dorovskikh I.E., Urazova G.E. Diagnostics and principles of treatment of congenital heart defects / Study guide, recommended by the Educational and Methodological Association for Medical and Pharmaceutical Education of Russian Universities. Moscow-Blagoveshchensk, 2013. – 128 p.
4. Landyshev Yu.S., Pogrebnaya M.V., Vakhnenko Yu.V., Dorovskikh I.E., Urazova G.E. Acquired vices hearts. Diagnostics And treatment / Educational allowance,

recommended UMO By medical And pharmaceutical education universities of Russia. - Moscow-Blagoveshchensk, 2013. - 109 p.

Electronic And digital technologies:

Online course, educational and visual benefits For classes lecture type and practical classes.
Mode access: https://educ-amursma.ru/mod/folder/view.php?id=12379

Video films (DVD)

1. Propaedeutics internal diseases.
2. Coronary angiography.
3. Noises And tones V cardiology. X-ray, hemodynamics, ECHO picture of congenital and acquired heart defects, with cardiomyopathy.
4. Thrombuscavitieshearts.
5. Modern treatment heart attack myocardium.
6. Implantation cardioverter- defibrillator.
7. Heart resynchronizing therapy.

Multimedia presentations:

1. Peculiarities clinical paintings And difficulties diagnostics infective endocarditis and its complications.
2. PeculiaritiesIHD young.
3. Myocardial infarction in young people.
4. Infectious endocarditis of a prosthetic valve.
5. Mesothelioma-pericardium.
6. Myocardial ruptures.
7. Idiopathic pulmonary arterial hypertension.
8. Prevention of thromboembolic complications in artificial heart valves.
9. Surgical correction of cardiovascular pathology.
10. Cardiovascular system damage Marfan syndrome.
11. Respiratory arrest due to warfarin overdose.
12. Side effects of amiodarone.

Lectures (CD):

1. Clinical pharmacology.
2. Spicy And chronic pulmonary heart.
3. Treatment And prevention defeats mucous shells gastrointestinal tract in cardiac sick.
4. Basics electrophysiology hearts.
5. Arrhythmias hearts And mechanisms actions antiarrhythmic substances.
6. Flickering arrhythmia: questions pathogenesis, clinical significance, treatment.
7. Intracardiac electrophysiological study at arrhythmias.
8. Differential diagnostics paroxysmal violations rhythm hearts.
9. Method transesophageal stimulation V diagnostics supraventricular arrhythmia.
10. Radiofrequency catheter ablation - non-drug method treatments supraventricular tachyarrhythmias.
11. Ventricular violations rhythm hearts: classification, risk stratification.
12. Principles treatments ventricular violations rhythm hearts.
13. Holter monitoring V diagnostics violations rhythm And conductivity hearts.
14. Clinical pharmacology antiarrhythmic drugs.
15. Indications To implantation And choice optimal regime permanent pacemaker.
16. Principles diagnostics violations functions EX And their correction.

17. Holter monitoring ECG V development testimony To implantation EX And examination of patients With implanted EX.
18. Grade actions antiarrhythmic drugs With with help Holter monitoring.
19. Differential diagnostics syncopal states.
20. Methodical aspects Holter monitoring.
21. Holter monitoring V diagnostics IHD.
22. Urgent cardiology (A.L. Vertkin).
23. Docking And prevention fibrillation atria drugs 1C class (HE. Miller).
24. Problem commitment To therapy sick With cardiovascular diseases (F.T. Ageev).
25. New possibilities treatments sick arterial hypertension high risk. Focus on the vascular wall(F.T. Ageev).

Photo materials:

1. Photo demonstration patients With overdose amiodarone.
2. Photo demonstration patient With temporary pacemaker.
3. Photo album By complications systemic glucocorticoid therapy.
4. ECG albums With demonstration various violations rhythm And conductivity.
5. ECG albums By diagnostics various options ischemic diseases hearts.
6. ECG albums With demonstration hypertrophy various departments hearts.
7. Photo album "Diagnostics vices hearts"
8. Photo presentation "Diagnostics vices hearts"
9. Photo album "ECG diagnostics violations rhythm"
10. Photo presentation "ECG diagnostics violations rhythm"
11. Photo presentation "Diagnostics And treatment heart attack myocardium"
12. Photo presentation "ECG diagnostics hypertrophy"
13. Photo album "Diagnostics infectious endocarditis"
14. Photo presentation "Diagnostics And schemes treatments infectious endocarditis"

Scroll albums, stands, tables, tablets, handouts materials used in training (prepared by the department staff)

Stands :

1. Chronic pulmonary heart.
2. Acquired And congenital vices hearts.
3. Violations cardiac rhythm And conductivity.
4. Antiarrhythmic medicinal means.
5. Urgent help at tachyarrhythmias.
6. Heart attack myocardium.
7. Arterial hypertension.
8. Diseases cardiovascular systems.
9. Atherosclerosis coronary vessels.
10. Main stages of atherogenesis.
11. Non-coronary diseases myocardium.
12. Ischemic disease hearts.
13. Algorithm therapy systolic dysfunctions left ventricle.
14. Diagnostic And classification criteria cardiology diseases.
15. Differential diagnostics V electrocardiography.
16. ECG diagnostics ischemic diseases hearts.
17. ECG signs hypertrophy myocardium.
18. Stages formations electrocardiography How methods diagnostics V Russia And for abroad.

Tables:

1. Thromboembolism pulmonary arteries.
2. Rational combinations antibacterial drugs.
3. Pickwickian syndrome.
4. Complications systemic glucocorticoid therapy.
5. Pulmonary heart.
6. Clinical signs chronic pulmonary hearts.
7. Unstable angina pectoris.
8. Pathogenesis heart attack myocardium
9. Possibilities electrocardiography.
10. Types changes ECG at ischemic diseases hearts.
11. Scheme conductive cardiac systems .
12. Scheme For definitions provisions electrical axis of the heart.
13. Changes ECG at heart attack myocardium different localizations.
14. Classification arrhythmia hearts.
15. Indications To conducting Holter monitoring ECG.
16. Dyslipidemia And her complications.
17. Role ECG V diagnostics heart attack myocardium.
18. Normal electrocardiogram.
19. Significant dates V stories development electrocardiography.
20. ECG signs hypertrophy myocardium.
21. Criteria ratings ECG test With physical load.
22. Classification gradations ventricular extrasystoles.
23. Plan analysis And compilation conclusions By ECG.
24. Differential diagnostics large focal And small focal myocardial infarction .

Albums:

1. Thromboembolism pulmonary arteries.
2. Antibacterial drugs V tables And schemes.
3. Factors risk And clinical painting pulmonary embolism arteries.
4. Pericarditis.
5. Stenosis mouths aorta.
6. Stenosis left atrioventricular holes (mitral stenosis).
7. Amyloidosis.
8. Album By to the founders medicine.
9. Congenital vices hearts blue type.
10. Treatment thromboembolism pulmonary arteries.
11. ECG album With demonstration various violations cardiac rhythm and conductivity.
12. ECG album By diagnostics heart attack myocardium.
13. ECG album With demonstration hypertrophy various departments hearts.
14. Arterial hypertension.
15. Congenital vices hearts pale type.

Handouts materials:

ECG, forms with clinical, biochemical blood tests, urine tests, X-rays, troponin test, blood pressure monitoring diary, demonstration drugs (used in cardiological medical practice of drugs), tasks, tests, archival case histories, albums on the studied topics, standards for the provision of specialized help according to the studied topics.

Electronic educational benefits :
(posted on website Federal State Budgetary Educational Institution IN Amur GMA Ministry of Health Russia. Mode access: https://educ-amursma.ru/course/view.php?id=90

3.4. Equipment, used For educational process

Classroom for conducting lectures type №2 2 Corps №1 Federal State Budgetary Educational Institution of Higher Education Amur State Medical Academy of the Ministry of Health of the Russian Federation, 675006, Amur Region, Blagoveshchensk, Gorky St. 95.	Laptop, Video projector
Classroom 1 (according to Explication No. 154), area – 17.4 sq. m, for conducting clinical practical classes, group And individual consultations, current, midterm control and intermediate certification: 675000, Amur region, Blagoveshchensk, st. Voronkova 26, main frame Lit. A4 9 floor, block B premises No. 154	Educational audience, equipped specialized furniture Board educational – 1, teacher's desk – 1, student desks – 5, chairs – 14; Negatoscope-1 thematic stands -6. Folder-booklet with a set ECG-4. Folder-booklet With set X-rays - 1.
Educational audience 1, square - 18.8 sq. m, for conducting clinical practical classes, group and individual consultations, ongoing monitoring and midterm assessment: 675006, Amur Region, Blagoveshchensk, st. Gorky 99, KKH 1 floor	Educational audience, equipped specialized furniture (table teacher-1, tables For students-5, chairs-10; educational board-1, cabinet book-1), stands thematic - 4. Folder-booklet With set ECG-5. Folder-booklet With set of radiographs-1.
Classroom for conducting simulations activities: aud. No. 3 675006, Blagoveshchensk, Gorky St., 101, third floor. Area - 29.62 sq.m.	Equipment: table - 1 pcs., system video monitoring and process records simulation training - 1 pcs., bed medical - 1 piece, bedside nightstand - 1 pcs., table medical - 1 pcs., table procedural - 1 pcs., imitator patient, imitation adult man For ECG skills training - 1 pc., robot simulator For training skills extended cardiopulmonary resuscitation - 1 pcs., dummy For cardiopulmonary resuscitation - 1 pc., dummy training With opportunity conducting defibrillation - 1 pc., pulse oximeter - 1 pcs., glucometer - 1 pcs., recovery trainer cross-country ability respiratory paths - 1 pcs., Adult resuscitation simulator human - 1 pcs., phantom resuscitation - 1 pcs.

Classrooms for conducting simulations activities: aud. No. 27 675006, Blagoveshchensk, Gorky st., 101 Area - 33.55 sq.m.	Equipment: table - 1 pcs., chair - 1 pcs., laptop - 1 pcs., medical bed - 1 pcs., swaddling table - 1 pcs., dummy For auscultation with the possibility imitations auscultatory paintings various diseases - 1 pc., exercise machine auscultation with smartoscope - 1 pcs., exercise machine for training in execution skills measurements arterial pressure - 1 pcs., treatment table 1 pc., simulator patient imitation adult man for training ECG skills - 1 pcs., system video monitoring And records

3.5. Professional bases data, information and reference systems, electronic educational resources

Item No.	Resource name	Description resource	Access	Resource address
Electronic library systems				
1.	"Student Consultant" Electronic library of medical university.	For students and teachers of medical And pharmaceutical universities. Provides access to electronic versions of textbooks, teaching aids and periodicals publications.	library, individual access	http://www.studmedlib.ru/
2.	"Consultant doctor" Electronic medical library.	The materials posted in the library have been developed by leading Russian specialists based on modern scientific knowledge (evidence-based medicine). The information has been prepared taking into account the position of the scientific and practical medical society (worldwide, European and Russian) in the relevant specialty. All materials have undergone mandatory independent reviewing.	library, individual access	http://www.rosmedlib.ru/cgi-bin/mb4x
3.	PubMed	Free search engine in the largest medical bibliographic base MedLine data. Documents medical and biological articles from the specialized literature, A Also gives links on full text articles.	library, free access	https://pubmed.ncbi.nlm.nih.gov/
4.	Oxford Medicine Online.	Oxford Publications Collection publishing houses on medical topics, unifying over 350 editions	library, free access	http://www.oxfordmedicine.com

		V general resource With the possibility of cross-searching. Publications include The The Oxford Handbook of Clinical Medicine and The Oxford Textbook of Medicine, electronic versions of which are constantly updated.		
5.	Biology Knowledge Base human	Reference information on physiology , cell biology , genetics , biochemistry , immunology , pathology . (Resource of the Institute molecular genetics RAS .)	library, free access	http://humbio.ru/
6.	Medical online library	Free reference books, encyclopedias, books, monographs, abstracts, English language literature, tests.	library, free access	http://med-lib.ru/
Informational systems				
7.	Russian Medical Association	Professional Internet resource. Objective: to facilitate the implementation of effective professional activities of a physician. staff. Contains the charter, personalities, structure, rules introduction, information about the Russian Medical Union.	library, free access	http://www.rmass.ru/
8.	Web-medicine	The site presents a directory of professional medical resources, including links to the most authoritative thematic sites, magazines, societies, as well as useful documents and programs. The site is intended for doctors, students, employees medical universities and scientific institutions.	library, free access	http://webmed.irkutsk.ru/
Databases				
9.	World Health Organization	The site contains news, statistical data on countries, incoming in World Health Organization, WHO fact sheets, reports, publications and much more.	library, free access	http://www.who.int/ru/
10.	Ministries science and higher education of the Russian Federations	Website Ministries sciences And Higher Education of the Russian Federation contains news, newsletters, reports, publications And much	library, free access	http://www.minobrnauki.gov.ru

		other.		
11.	Ministry of Education of the Russian Federation.	Website Ministries education of the Russian Federations contains news, newsletters, reports, publications And much other.	library, free access	https://edu.gov.ru/
12.	Federal portal "Russian education"	A single window of access to educational resources. At this portal Access to textbooks on all areas of medicine and health care is provided.	library, free access	http: //www.edu.ru/ http://window w.edu.ru/catalog/?prubr=2.2.81.1
Bibliographic bases data				
13.	BD "Russian Medicine"	It is being created V CNMB, covers the entire collection, starting from 1988. The database contains bibliographic descriptions of articles from domestic journals And collections, dissertations and their abstracts, as well as domestic And foreign books, collections of institute proceedings, conference materials, etc. Thematically, the database covers all areas of medicine and related areas of biology, biophysics, biochemistry, psychology And etc.	library, free access	http://www.scsml.rssi.ru/
14.	eLIBRARY.RU	Russian information portal in the field of science, technology, medicine and education, containing abstracts and full texts of more than 13 million scientific articles and publications. Electronic versions of more than 2,000 Russian scientific and technical journals are available on the eLIBRARY.RU platform, V volume number more 1000 magazines V open access.	library, free access	http://elibrary.ru/defaultx.asp
15.	Portal Electronic library of dissertations	IN present time The electronic library of dissertations of the Russian State Library contains more than 919,000 full texts of dissertations and abstracts.	library, free access	http://diss.rsl.ru/?menu=disscatalog/
16.	Medline.ru	Medical and biological portal for specialists. Biomedical magazine. Latest update February 7, 2021	library, free access	http://www.medline.ru

3.6. Licensed And free distributed software software used in the educational process

I. Commercial software products		
1.	Operating room system M.S. Windows 7 Pro	Number licenses 48381779
2.	Operating room system M.S. Windows 10 Pro, MS Office	CONTRACT №142 A from 25.12.2019
3.	MS Office	Number licenses: 43234783, 67810502, 67580703, 64399692, 62795141, 61350919
4.	Kaspersky Endpoint Security For business Extended	Agreement No. 977 by/20 from 24.12.2020
5.	1C:University PROF	LICENSE CONTRACT No. 2191 from 15.10.2020
6.	1C: Library PROF	LICENSE CONTRACT No. 2281 from 11.11.2020
II. Free distributed software security		
1.	Google Chrome	Freely distributed Distribution conditions: https://play.google.com/about/play-terms/index.html
2.	Browser «Yandex»	Freely distributed License Agreement for the Use of Browser Programs «Yandex» https://yandex.ru/legal/browser_agreement/
3.	Dr.Web CureIt!	Freely distributed License Agreement: https://st.drweb.com/static/new-www/files/license_CureIt_ru.pdf
4.	OpenOffice	For free distributed License: http://www.gnu.org/copyleft/lesser.html
5.	LibreOffice	For free distributed License: https://ru.libreoffice.org/about-us/license/

3.7. Resources information and telecommunications networks "Internet"

Internet resources:

Standards of primary health care **https://www.rosminzdrav.ru/ministry/61/22/stranitsa-979/stranitsa-983/1-standarty- primary medical and sanitary assistance**

Standards of specialized medical care **https://www.rosminzdrav.ru/ministry/61/22/stranitsa-979/stranitsa-983/2-standarty-specialized medical assistance**

Procedures for the provision of medical care to the population of the Russian Federation **https://www.rosminzdrav.ru/ministry/61/4/stranitsa-857/poryadki-okazaniya- medical-assistance-to-the-nation-of-the-russian-federation**

Federal electronic medical library **http://www.femb.ru (Clinical recommendations)**

4. FUND EVALUATION TOOLS

4.1. Current test control (input, original, weekend), final Examples of test tasks for

entrance control (with standard answers)
Test tasks located V system "Moodle".
Mode access: https://educ-amursma.ru/mod/quiz/view.php?id=12334 Total number of tests - 149.

Specify one correct answer

1. "TYPICAL PATHOLOGICAL PROCESS" - THIS
    1) This is a standard process formed in the course of evolution, containing protective and adaptive mechanisms, developing in response to the action of pathogenic factors (inadequate stimuli) and is essentially a sanogenetic mechanism
    2) this is an inadequate (quantitatively and qualitatively) response to a physiological stimulus or to the action of a non-physiological stimulus
    3) this is a long-term pathological process or recovery with a functional defect
    4) This answer organism or his parts on external or internal impacts

2. THE REACTION OF AG-GCAT (IGE) ON THE SURFACE OF TARGET CELLS (MAST, BASOPHILS), ACCOMPANIED BY SUBSEQUENT ACTIVATION OF THESE CELLS AND RELEASE OF MEDIATORS, IS THE CENTRAL PATHOGENETIC LINK OF ALLERGY
    1) I - like
    2) II- type
    3) IV- type
    4) V- type
3. ACUTE INFLAMMATION IS CHARACTERISTIC OF THE FOLLOWING SEQUENCE OF PATHOPHYSIOLOGICAL PROCESSES
    1) alteration → activation of lysosomal enzymes, release of mediators and reaction of the microcirculatory bed → change in permeability, exudation and emigration, phagocytosis → proliferation and restoration of the defect
    2) alteration → disorder microcirculation → proliferation
    3) alteration → emigration → disorder microcirculation → proliferation
    4) alteration → proliferation → disorder microcirculation → emigration Answer

standards: correct answer 1).

Examples test tasks outcome control
Test tasks located V system "Moodle".
Mode access : https://educ-amursma.ru/mod/quiz/view.php?id=12291
General quantity tests - 100.
Specify one correct answer.

1. MAIN SIGN LEFT VENTRICULAR HEART FAILURE IS

1. weakness
2. attacks cardiac asthma
3. edema legs
4. venous stagnation V big circle blood circulation

2. MAIN SIGN RIGHT VENTRICULAR HEART FAILURE IS

1. weakness
2. dyspnea
3. attacks cardiac asthma
4. venous stagnation V big circle blood circulation

3. ANTAGONIST ANGIOTENSIN-CONVERTING THE ENZYME IS

1. Apressin
2. Nitrosorbide
3. Sidnofarm
4. Lisinopril

Standards answers: 1-2, 2-4, 3- 4.

Examples test weekend tasks control
Test tasks located V system "Moodle".
Mode access : https://educ-amursma.ru/mod/quiz/view.php?id=12291
General quantity tests - 100.

1. MOST HEAVY FLOW ANGINA PECTORIS OBSERVED U SICK

1) with stenosis trunk left coronary arteries

2) With proximal defeat back coronary arteries

3) With distal defeat envelope arteries

4) With proximal defeat envelope arteries

2. EQUIVALENT ANGINA PECTORIS MAYBE SERVE NEXT SYMPTOM

1) heartburn at fast walking

2) dizziness at transition V orthostasis

3) increase HELL at physical load

4) piercing pain V heart at tilts torso

3. MOST LONG ANTIANGINAL EFFECT PROVIDES

1) nitroglycerine

2) sustak

3) nitrogranulong

4) monosan

Standards answers

1	1
2	1
3	4

Examples test final assignments control (With standard answers)
Test tasks located V system "Moodle".
Mode access: https://educ-amursma.ru/course/view.php?id=90 Total number tests – 727.

Specify one correct answer

1. CRITERIA POSITIVE SAMPLES WITH DOSED PHYSICAL EXERCISE
   1) dyspnea
   2) fatigue
   3) depression segment ST on 2 mm
   4) depression segment ST on 1 mm

2. IN PULMONOLOGICAL PRACTICE DRUGS, CAUSING THE DEVELOPMENT OF ARTERIAL HYPERTENSION ARE
   1) penicillins
   2) bronchodilators
   3) cromoglycate sodium
   4) drugs from licorice

3. SPECIFIED CHANGES ECG CHARACTERISTIC FOR ANGINA PECTORIS
   1) pathological tooth Q
   2) depression segment ST
   3) appearance negative teeth T
   4) transient blockade legs beam Gisa

Standards answers

1- 3
2- 4
3- 2

4.2. Situational tasks

Situational tasks And clinical examples presented in system Moodle. Access mode: https://educ-amursma.ru/course/view.php?id=90
Quantity situational tasks - 100, quantity clinical examples - 10.

Examples situational tasks For current control With answer standards :

Task number 1.

Patient X., 62 years old, was admitted to the clinic with complaints of periodic increase in temperature to 38-40 ° C with chills, decreasing after taking aspirin, weakness, sweating, loss of appetite, abdominal pain.

She fell ill acutely, 2 weeks ago. Nausea, vomiting, pain in the right half of the abdomen, fever appeared. During these 2 weeks, she received antispasmodic and antibacterial drugs at home. Later, a cough joined in, and the patient was sent to the district hospital with a diagnosis of "Right-sided pneumonia". Antibiotic treatment conducted for 10 days turned out to be ineffective.

On examination, the patient's condition is severe. The patient is lethargic and adynamic. Temperature is 37.2 ° C. The skin is pale, the color of "café au lait" with elements of hemorrhagic rashes, a positive tourniquet symptom. In the lungs - vesicular breathing, weakened on the right in the lower sections. Heart - the borders are uniformly expanded due to the left and upper borders, a coarse systolic murmur is heard at the apex and in Botkin's point. The pulse is rhythmic, 86-100 / min, satisfactory filling. The tongue is dry, coated with a whitish-gray coating. The abdomen is soft, moderately painful in the right hypochondrium. The liver is soft, painful, protrudes 2 cm from under the costal arch. The spleen is not palpable. Blood analysis: leukocytes. - 9.7 x 10^{9} /l, 10-2%, p/y-11%, segmental-74%, lymph.-10%; mon-3%, ESR - 40 mm/hour, toxicogenic granularity of leukocytes is detected. Er. - 3.3 x10^{12} /l, Hb-108 g/l, CRP - (+++), RF (++), fibrinogen 6.0 mmol/l. ECG - sinus tachycardia, cicatricial changes on the posterior wall of the myocardium. Chest X-ray: lungs without focal and infiltrative changes; heart - borders are expanded in cross-section, the aorta is compacted. EchoCG: presence of vegetations on the mitral valve cusps with the formation of mitral insufficiency. Decreased contractility of the left ventricle.

Questions:

1. Your diagnosis.
2. Select main syndromes of this disease.
3. Which additional methods research Not were carried out?
4. Tactics treatment.
5. Prevention infectious endocarditis.

Reference answers To task №1:

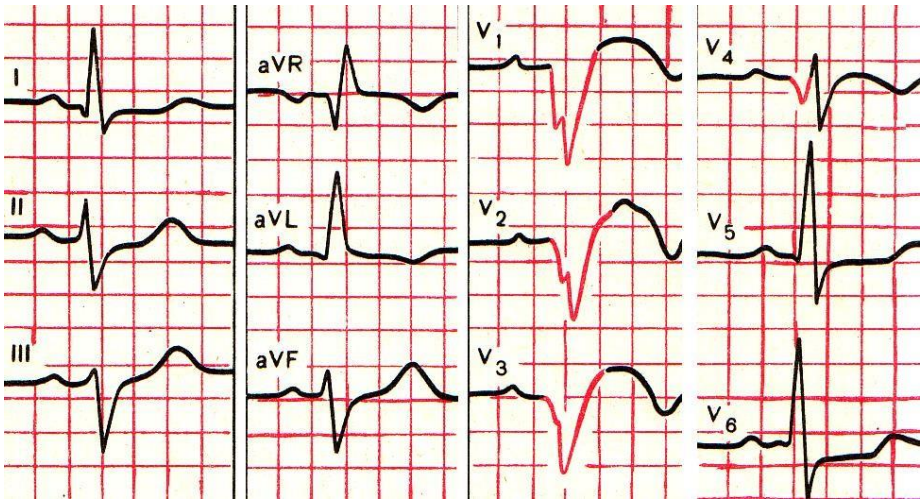
1. Primary infective endocarditis, infectious-toxic phase, acute course. NKIIA (FC II).
2. Syndrome of inflammatory changes and septicemia (fever, chills, hemorrhagic rashes, changes in acute phase blood parameters: leukocytosis with a shift to the left, increased ESR, presence of CRP, RF, increased fibrinogen); intoxication syndrome (general weakness, severe sweating, headaches, loss of appetite, pale skin); thromboembolic complications syndrome (abdominal pain); valvular complications syndrome (formation of mitral insufficiency); syndrome of immune damage to organs and systems (myocarditis and hepatitis).
3. Multiple blood cultures were not performed to detect the causative agent of endocarditis.
4. Prescribing antibacterial therapy taking into account blood culture; prescribing agents with antimicrobial action (dioxidine, antistaphylococcal globulin And etc.); non-drug means (plasmapheresis,

autotransfusion of ultraviolet-irradiated blood); prescription of NSAIDs; if there is no effect, heart valve replacement with excision of damaged areas is indicated (after the severity of the process has subsided).

5. Persons with an increased risk of developing infective endocarditis are subject to the necessary observation and control. This applies primarily to patients with prosthetic heart valves, congenital or acquired heart defects, vascular pathology, with a history of infective endocarditis, and foci of chronic infection. The development of bacteremia can accompany various medical procedures: surgical interventions, urological and gynecological instrumental examinations, endoscopic procedures , tooth extraction , etc. For preventive purposes, a course of antibiotic therapy is prescribed for these interventions. It is also necessary to avoid hypothermia, viral and bacterial infections. It is necessary to sanitize foci of chronic infection at least once every 3-6 months.

Task #2

Patient T., 56 years old, felt unwell at work during a meeting. Suddenly, burning pain appeared behind the breastbone, radiating to the left shoulder blade. The pain did not subside. reception nitroglycerin, existing at one from employees. Their intensity was increasing. An ambulance was delivered to the city hospital where the ECG was recorded the following changes (Fig. 1).



In the emergency room, the patient's shortness of breath increased, he developed severe genera l weakness and cold sweat, decreased HELL to 80/50 mm rt. Art., developed tachycardia to 160 V minute. On ECG (rice. 2):

Fig. 2.

Tachycardia docked i/v introduction B-blockers. Sick placed V intensive care unit for further treatment and observation.

Questions

1. What was the cause of the pain syndrome? What Do ECG changes confirm this diagnosis?
2. Which laboratory indicators are changing at this disease?

3. Which complication main diseases developed at patient? IN how what is its cause? What are the types of this tachycardia?
4. Possible consequences this arrhythmia.
5. Principles treatments sick.

Reference answers To task №2

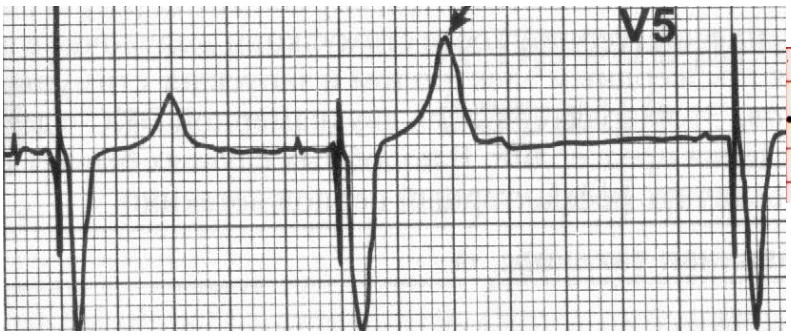
1. IHD. Spicy anteroseptal THEM (Q-positive). Paroxysmal ventricular tachycardia. CHF IIA (FC II).
2. Leukocytes, ESR, enzymatic spectrum blood (V etc., KFK-MV, LDG, AST, ALT), myoglobin, troponin, blood lipid profile
3. Paroxysmal ventricular tachycardia as a result necrotic changes in the LV myocardium. Arrhythmic cardiogenic shock.
4. Arrhythmic cardiogenic shock, fibrillation ventricles With possible asystole.
5. Complex treatment main diseases, appointment lidocaine With switching to beta-blockers or cordarone (depending on the dynamics of the disease and Holter monitoring data).

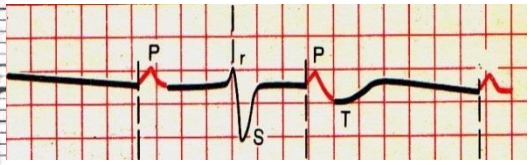
Task №3

Patient K., 71 years old, **complains** of pain in the heart of an angina-like nature, shortness of breath when climbing more than one floor, and dizziness attacks. There have been repeated attacks of short-term loss of consciousness.

Medical history . IHD was diagnosed 10 years ago. Repeatedly examined and treated at the place of residence. Over the past 2 years, heart pain has become more frequent, tolerance to physical activity has decreased to the level characteristic of FC III angina. Coronary angiography was recommended. However, the patient did not undergo the examination. Over the past 2-3 months, the patient noticed episodes of a rare pulse (up to 40 per minute), which were accompanied by general weakness and dizziness. Short-term loss of consciousness was observed three times. He did not seek medical attention. He associated fainting with atherosclerosis of the cerebral vessels. On the eve of hospitalization, another fainting spell developed, as a result of which the patient fell down the stairs and broke his hip. In the emergency room of the city hospital, a rare pulse (36 per minute) and arterial hypertension (165/100 mm Hg) were recorded. The ECG revealed the following changes:

Sick translated For continuations treatments V cardiac surgery clinic, where the operation was performed after which the ECG was recorded:





Questions

1.Which arrhythmia, which caused syncopal states, developed in sick?

1. Complication what diseases she showed up?

2. Mechanism development fainting And arterial hypertension at this arrhythmia.
3. Which operation completed to the patient?

4. Peculiarities ECG after this operations. Which types similar operational benefits are currently used? How do they differ from the operation performed?

Reference answers To task №3

1. Atrioventricular blockade III Art. (full)
2. IHD. Angina pectoris voltage, FC III. GB II, AG II, risk IY.
3. Severe bradycardia due to impaired conduction of impulses from the atria To ventricles. Increase impact volume because of long-term pauses between ventricular contractions leads to hypertension.
4. Implantation of pacemaker.
5. The presence of pacemaker impulses and deformed ventricular complexes. Dissociation between P waves and QRS complexes. The most optimal is the implantation of dual-chamber pacemakers (in the atria and ventricles), which cause sequential excitation atria And ventricles, preventing the appearance of pacemaker syndrome.

Examples situational tasks intermediate control (with standard answers)

Presented V system Moodle.

Mode access: https://educ-amursma.ru/course/view.php?id=90

Situational task 1

Sick ABOUT., 50 years, presents complaints on general weakness, increase body temperature up to 37.5-38 ^{0} C, sweating, followed by chills, increased shortness of breath, aching pain in the heart area.

Considers himself ill With 35 years old when after chest trauma (bruise) suddenly developed pain in the heart area, palpitations, severe shortness of breath. In the cardiology department, a mitral valve cusp detachment and post-traumatic mitral insufficiency were diagnosed. The patient was implanted with an artificial mitral valve, after which until recently (subject to protective regime) He felt myself quite satisfactory. Pathological noise disappeared. Shortness of breath was a concern during physical exertion.
Deterioration well-being notes V flow latest 3 weeks. After removal The local swelling of the tooth persisted for several days, and soon regional lymphadenitis and purulent discharge from the socket appeared. At the dental clinic, an incision was made at the site of the swelling, the purulent contents were removed, and drainage was installed. After 2 days, the swelling disappeared, however, the temperature remained elevated, and there was a tendency for it to increase. General weakness increased, shortness of breath increased, and pain appeared in the heart area.

Features of physical examination. The body type is normosthenic, satisfactory. nutrition. Temperature 37.7 ^{0} C. Cutaneous cover pale, moist. Peripheral lymph nodes are not enlarged. Interphalangeal joints of the hands are swollen, skin above them is hyperemic, movements are painful. Percussion sound of the lungs is pulmonary, breathing is vesicular, no wheezing. Respiratory rate is 24 per minute. The left border of the heart is shifted outward by 2.5 cm. Heart sounds are muffled, the “melody of a working prosthesis” of the mitral valve is heard. A blowing systolic murmur is heard at the apex. Heart rate is 92 per minute. Blood pressure is 110/60 mm Hg. Swelling of the shins.
Stomach soft, moderately painful V left hypochondrium. Dimensions liver 11 X 10 X 9 cm, spleen – 14 x 8 cm. No dysuria.

Additional data . Clinical analysis blood: Er. 3.3 X 10^{12} /l, Nv 120 g/l, L. 10.5 x 10^{9} /l, lymphocytes 20%, s/y 75%, p/y 4%, monocytes 1%, ESR 25 mm/hour.
Clinical analysis urine: protein 0.5 g/l, L. 10-155 V field of vision, Er. 5-6 V field vision, hyaline cylinders 8-10 in the field of vision.

Questions : Preliminary diagnosis of the disease. What additional studies are necessary For his confirmation. Presumable Etiology of the disease. Tactics of antibacterial therapy.

Reference answers To task 1

Diagnosis **:** Secondary infectious endocarditis, subacute flow. Infectious-toxic phase. Moderate degree activity. Paravalvular fistula at the site of the mitral valve prosthesis. Infectious myocarditis. NC IIA (FC II).

Exclude diffuse glomerulonephritis. It is necessary to

perform :

- biochemical analysis blood with examination of acute phase indices, liver function tests, transaminases, LDH, protein fractions,
- microbiological blood test for the presence of bacteria and fungi (in 3 blood samples of 20-30 ml each),
- immunological study blood,
- ECG, ECHOCG,
- Ultrasound liver, spleen, kidneys.

If infection of prosthetic valves is suspected, before receiving the results of microbiological blood tests, prescribe intravenous vancomycin 30 mg/kg/day V 2-x introductions, Not more 2 g/substance gentamicin 3 mg/kg/day V 2-3-x introductions, acting on Str. Epidermidis and enterococci. After receiving the results of bacterial culture, adjustments are made to the treatment.

Situational task 2

Patient T., 36 years, 10 days located on treatment in department pulmonology with diagnosed with lung abscess. Complained **of** severe weakness, sweating, fever up to 39-39.5 ^{0} C, dry cough, pain in the left half of the chest, shortness of breath with minor physical exertion. This morning, while coughing, a sharp piercing pain suddenly appeared in the left half of the chest radiating to the neck and left arm, shortness of breath increased.

According to the physical examination data . The patient's condition is severe. Temperature 39.2 ^{0} C. The position is forced (semi-sitting). The mobility of the lower pulmonary edge on the right is 10 cm, on the left - 7 cm. Percussion sound over the lower sections of the left lung tympanic. Vocal tremor and breathing in this area are sharply weakened. The right border of the heart is determined at 2.5 cm outward from the right edge of the sternum, the left - at 2 cm inward from the left midclavicular line. Heart rate 115 per minute, blood pressure 90/60 mm Hg. No peripheral edema. The abdomen is soft, painless. Liver along the edge of the costal arch: 10 x 9 x 7 cm. No dysuria.

Additional data . Complete blood count: erythrocytes 3.4 x 10^{12} /l, Hb 115 g/l, leukocytes 15.4 x 10^{9} /l, lymphocytes 15%, s/y 80%, p/y 5%, ESR 28 mm/hour. ECG: decreased R wave voltage in all leads, sinus tachycardia, electrical axis deviated to the right, increased P amplitude and decreased T amplitude in leads II, III.

Questions

1. Cause appearances sharp pain V chest cage.
2. Pathogenesis this phenomenon.
3. Additional methods examinations, necessary For confirmations diagnosis.
4. Urgent help to the patient.

Reference answers To task 2

1. Pneumothorax on background abscess easy.
2. Pneumothorax arises at autopsy abscess V pleural cavity.
3. X-ray examination of the chest organs. If indicated, computed tomography of the organs chest cells. At fluoroscopy to occurrence cavities diffuse darkening is detected. When a cavity is formed and its purulent contents are released, enlightenment appears. In the case of an unemptied abscess, a darkening of a round shape with inflammatory infiltration around is detected. If there is air or liquid contents in the cavity, a pronounced darkening (horizontal level) and enlightenment above it is noted.
4. Anesthesia. Oxygen therapy. Suppression cough reflex. Pleural puncture and air removal (in case of a sharp deterioration in the patient's condition - a rapid drop in blood pressure, increased shortness of breath. Treatment underlying disease.

Expectant therapy is relevant for closed limited small pneumothorax. In case of total form to prevent shock reaction and rapid After straightening the lung, a drain is placed into the pleural cavity, and active (using an electrovacuum device) or passive (according to Bulau) air aspiration is performed.

Spontaneous recurrent pneumothorax is being treated surgical by way.

Situational task 3

Patient K., 68 years old, was admitted to the emergency room in a serious condition. Contact is difficult. Psychomotor agitation. Vomiting of bile has occurred several times. Facial hyperemia is noteworthy. Temperature is 37.4 degrees C. The skin is moist and warm. Muscle hypotonia of the right extremities, hemihypesthesia on the right. The gaze is directed to the right. Speech is difficult to perceive.

The left border of the heart is displaced outward by 2 cm. The second heart sound is accentuated above the aorta. Systolic murmur is in the second intercostal space to the right of the sternum. Heart rate is 90 beats per minute. Blood pressure is 220/110 mm Hg. The pulse is tense. There is no edema. Vesicular breathing, no wheezing. Respiratory rate is 26 beats per minute. The abdomen is unremarkable.

It is known that the patient has been suffering from arterial hypertension for 20 years. Adapted to pressure of 150/90-100 mm Hg. Not examined. When worsening, he took adelfan, papazol on his own. According to the patient, the worsening occurred suddenly while working in the garden. A severe headache appeared, speech changed. An ambulance was called.

In **the clinical blood analysis** there is slight leukocytosis. In **the biochemical blood analysis** : glucose 4.2 mmol/l, urea 6.7 mmol/l, cholesterol 5.0 mmol/l, B-lipoproteins 3.0 mmol/l. In **the clinical urine analysis** : specific gravity 1.008, protein 0.02 g/l, hemoglobin 8-10 in the visual field. **Ophthalmologist** : pronounced signs of hypertensive retinopathy with edema and isolated small focal hemorrhages. **EEG** : changes in brain biopotentials with interhemispheric asymmetry.

Questions: Diagnosis. Its rationale. What complication of the underlying disease is present. Patient management tactics.

Reference answers To task 3

Hypertension stage III, AG degree 3, risk IY. Hypertensive crisis complicated by circulatory disorder in the left middle cerebral artery basin (hemorrhagic stroke is not excluded). NC IIA, FC II.

Diagnosis exhibited on based on syndromes:

arterial hypertension: systolic-diastolic AG, crisis flow With debut V
48 years, cerebral complaints And With good effect on antihypertensive therapy;
cardiomegaly And defeats others target organs (kidneys, vessels ocular bottom, brain);
cardiovascular syndrome And availability focal neurological symptoms; circulatory failure;
parenteral dyspepsia. A Also availability factors risk cardiovascular complications - age 68 years.
Shown hospitalization V vascular center For treatments stroke And selection adequate antihypertensive therapy with target BP < 130/85 mmHg.

4.3. Scroll practical skills, which must have student after mastering the discipline

1. Interpret in a patient with a cardiac disease, complaints, history of the disease, life, features of the drug history, data from a physical examination of the cardiovascular system (palpation of the apical impulse, determination of the boundaries of cardiac dullness and the width of the vascular bundle, auscultation, the ratio of tones, determination of pulse characteristics).
2. Select main symptoms And syndromes, explain their pathogenesis.
3. Compose plan examinations sick With diseases organs cardiovascular system.
4. Interpret taking into account the norm: clinical blood test, biochemical analysis blood (lipid profile, fibrinogen, C-reactive protein, procalcitonin test, D-dimer, transaminases, potassium level, blood gases); blood culture analysis; ECG data, echocardiography, troponin test, bicycle ergometry, Holter ECG and blood pressure monitoring, X-ray examination results, coronary angiography data.
5. Based on the received information to formulate and justify a clinical diagnosis.
6. Conduct differential diagnostics By main syndromes V cardiology.
7. Prescribe treatment for the patient taking into account features of the clinical course of the disease, age, presence of complications, concomitant pathology.
8. Fill out the drug therapy prescription sheet and describe the main groups of drugs.
9. Diagnose complications and provide emergency care in case of angina attack, myocardial infarction, cardiogenic shock and acute heart failure, heart rhythm disturbances, hypertensive crisis.
10. To draw up a plan of rehabilitation and preventive measures for cardiac diseases.
11. Conduct indirect massage hearts, know criteria efficiency.
12. Perform artificial ventilation of the lungs (mouth to mouth, mouth to nose), know the criteria for effectiveness.
13. Conduct defibrillation, know indications To conducting And complications.

4.4. Scroll questions To credit

1. Ischemic heart disease. Stable angina pectoris, etiology, pathogenesis, classification, clinical picture, diagnostics, differential diagnosis, treatment, prevention.
2. Ischemic heart disease. Acute coronary syndrome. Unstable angina. Myocardial infarction: etiology, pathogenesis, classification, clinical presentation, diagnostics, differential diagnosis, treatment, prevention.

3. Complications of myocardial infarction. Predisposing factors. Classification, clinical presentation, diagnostics, differential diagnosis, treatment, prevention.
4. Syndrome of connective tissue dysplasia, mitral valve prolapse. Etiology, pathogenesis, classification, clinical presentation, diagnostics, differential diagnosis, treatment, prevention.
5. Acute heart failure, cardiogenic shock. Classification, mechanism of development, clinical picture, diagnostics, differential diagnosis, treatment, prevention.
6. Infective endocarditis. Etiology, pathogenesis, classification, clinical features, diagnostics, differential diagnosis, treatment, prevention.
7. Hemodynamic arterial hypertension: etiopathogenesis, classification. Clinical presentation, diagnostics, differential diagnosis, treatment.
8. Arterial hypertension in pregnant women: etiology, classification. Features of hemodynamics, criteria diagnostics, differential diagnosis, treatment.
9. Arterial hypertension in coarctation of the aorta: hemodynamics, clinical picture, diagnostic criteria, differential diagnosis, indications for surgical treatment.
10. Arterial hypertension in elderly patients: hemodynamics, clinical features, diagnostic criteria, treatment. Prevention of postural syncopal conditions.
11. Ischemic heart disease in elderly patients: clinical presentation, diagnostic criteria, treatment, indications for surgical treatment.
12. Hypertension. Definition, diagnostic criteria, clinical features, differential diagnostics, treatment, prevention of complications.
13. Symptomatic arterial hypertension: classification, diagnosis, differential diagnosis, treatment, prevention of complications.
14. Renal arterial hypertension: classification, clinical presentation, diagnostics, differential diagnosis, treatment.
15. Endocrine arterial hypertension (Itsenko-Cushing syndrome and disease, pheochromocytoma, aldosteronoma), clinical presentation, diagnostics, differential diagnosis, treatment.
16. Rhythm disorders (atrial extrasystole, paroxysmal supraventricular tachycardia), pathogenesis, clinic, change hemodynamics And ECG, treatment, indications for electropulse therapy.
17. Fibrillation And flutter atria: pathogenesis, classification, changes on ECG, treatment, indications To electropulse therapy, interventional methods treatment. Prevention of thromboembolic complications.
18. Sick sinus syndrome: diagnostics, clinical picture, treatment, indications for implantation of artificial sinus node driver rhythm. Syndrome takhi-bradi.
19. Syndrome Morgagni-Adams-Stokes: etiology, clinic, diagnostics, treatment.
20. Atrioventricular block: pathogenesis, classification, clinical picture, nature of ECG changes, treatment. Indications for temporary cardiac stimulation, for pacemaker implantation.
21. Pulmonary embolism: etiology, classification, clinical features, diagnostics, differential diagnosis, treatment, prevention.
22. Ventricular violations rhythm: etiology, pathogenesis, classifications, Clinic, nature of ECG changes, treatment, prevention of sudden cardiac death.
23. Chronic cardiac failure: definition, classifications, etiology, pathogenesis, clinical features, diagnostics, drug and surgical treatment.
24. Syndrome Wolff-Parkinson-White: etiology, pathogenesis, classification, Clinic, diagnostics, nature of ECG changes, treatment.
25. Preoperative Preparation cardiology sick. Goals And tasks. Features of selection of drug therapy