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No	a module / discipline	module component	cycle of discipline	Course Description	prerequisites	postrequisites	the department participating in the module	the number of credits (hours)	classroom 10%+38%	Independent clinical work under the guidance of a clinical mentor 37%	Independent work of students 15%	amount of hours	course (specialization training trajectory)	responsible department for the module / discipline	Head of the department
I. Educational program: "7R01102 - Adult rheumatology, children's"															
1	Issues of prolongation of pregnancy and prognosis criteria for systemic diseases	Prolongation of pregnancy in systemic diseases. Physiology and pathophysiology of pregnancy	MI	Comprehensive examination of the patient using clinical, instrumental, morphological and immunological methods. Differential diagnosis of systemic diseases.	Disciplines of residency	Disciplines of magistracy	Department of Internal Medicine №4	2	29	22	9	2	Department of Internal Medicine №4	Tuganbekova S.K.	
		Prolongation of pregnancy with heart defects. Physiology and pathophysiology of pregnancy		Comprehensive examination of the patient using clinical, instrumental, morphological and immunological methods. Differential diagnosis of systemic diseases.				2	29	22	9				
2	Actual problems in rheumatology	Modern aspects of immunosuppressive therapy	MI	Medicines used in rheumatology. Modern approaches to the choice of immunosuppressive therapy.	Disciplines of residency, magistracy	Research work	Department of Internal Medicine №4	2	29	22	9	2	Department of Internal Medicine №4	Tuganbekova S.K.	
		Autologous stem cells in the clinic of internal diseases		Evaluation of the effectiveness of autologous stem cells in the clinic of internal diseases.				2	29	22	9				
3	Immunology and biological therapy in modern rheumatology		MI	Improving the knowledge and skills of residents in the interpretation of laboratory and instrumental diagnostics in primary care.	Internship in General Medicine	Disciplines of magistracy, doctoral studies	Department of Family Medicine №1	4	58	44	18	2	Department of Family Medicine №1	Abisheva S.T.	
4	Rheumatic diseases and pregnancy		MI	Rheumatic diseases, diffuse connective tissue diseases and pregnancy. Pregnancy management.	Internship in General Medicine	Disciplines of magistracy, doctoral studies	Department of Family Medicine №1	4	58	44	18	2	Department of Family Medicine №1	Abisheva S.T.	
5	Indices and questionnaires used in rheumatology		MI	Indices, questionnaires for identifying the activity and functional ability of patients with rheumatic diseases.	Internship in General Medicine	Disciplines of magistracy, doctoral studies	Department of Family Medicine №1	4	58	44	18	2	Department of Family Medicine №1	Abisheva S.T.	
6	Modern principles of therapy for seronegative spondyloarthritis (SNSA)		MI	Principles of SNSA therapy, NSAID therapy, basic drugs, indications for antibiotic therapy, muscle relaxants, the role of GCS in the treatment of SNSA, physiotherapy exercises and physiotherapy.	Internship in General Medicine	Disciplines of magistracy, doctoral studies	Department of Family Medicine №1	4	58	44	18	2	Department of Family Medicine №1	Abisheva S.T.	
2. Educational program: "7R01103 - Allergy and immunology adult, children"															
7	Modern aspects of diagnosis and treatment of allergic diseases	Modern approaches to the appointment of immunomodulators	MI	Algorithm of diagnosis, differential diagnosis and modern therapy of allergic diseases reduces the risk of complications, as well as chronicity of the pathological process.	Internship disciplines	Disciplines of magistracy and PhD	Department of Internal Medicine with courses in Nephrology, Hematology, Allergy and Immunology	1	15	11	5	2	Department of Internal Medicine with courses in Nephrology, Hematology, Allergy and Immunology	Turebekov D.K.	
		Molecular Allergy Diagnostics						1	15	11	5				
		Allergen-Specific Immunotherapy						1	15	11	5				
		Vaccines and vaccination						1	15	11	5				
8	Topical issues of allergy and immunology	Clinical Immunology and Allergy in Pediatrics	MI	The study of a wide range of problems associated with the pathology of the immune system in adults and children. Principles of emergency care in allergy and immunology.	Internship disciplines	Disciplines of magistracy and PhD	Department of Internal Medicine with courses in Nephrology, Hematology, Allergy and Immunology	1	15	11	5	2	Department of Internal Medicine with courses in Nephrology, Hematology, Allergy and Immunology	Turebekov D.K.	
		Secondary immunodeficiencies						1	15	11	5				
		Immunopathology in various diseases						1	15	11	5				
		Principles of emergency care in allergy and immunology						1	15	11	5				
3. Educational program: "7R01104 - Gastroenterology for adults, children"															
9	Current aspects of cancer's prevention in gastroenterology	Topical issues of diseases of the gastrointestinal tract	MI	The development of students' skills for precancerous diseases diagnostics in the internal medicine's clinic. Differential diagnosis of precancerous diseases and selection of patient management tactics	Internship disciplines	Master, doctoral discipline, clinical practice	Department of internal medicine with a course in gastroenterology, endocrinology and pulmonology	2	29	22	9	2	Department of internal medicine with a course in gastroenterology, endocrinology and pulmonology	Ainabekova B.A.	
		Precancerous diseases of the gastrointestinal tract						2	29	22	9				
10	Innovative technologies in the treatment of viral hepatitis	Selected issues of modern Hepatology	MI	The last decade has been characterized by the latest achievements in molecular biology, Virology, and genetic engineering, which allowed us to discover new hepatotropic viruses, study pathogenesis in more detail, and develop new approaches to antiviral therapy of viral hepatitis. The educational program of this discipline involves the study of the basic principles of treatment of chronic viral hepatitis in accordance with the competence model of the specialist.	Internship disciplines	Master, doctoral discipline, clinical practice	Department of internal medicine with a course in gastroenterology, endocrinology and pulmonology	2	29	22	9	2	Department of internal medicine with a course in gastroenterology, endocrinology and pulmonology	Ainabekova B.A.	
		Topical issues of rational therapy of chronic viral hepatitis						2	29	22	9				

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									classroom 10%+38%	Independent clinical work under the guidance of a clinical mentor 37%	Independent work of students 15%				
11	Parasitic diseases of the liver and intestines	Parasitic diseases of the gastrointestinal tract. Differential diagnostic aspects	MI	Improving knowledge, skills and abilities based on evidence-based medicine, modern scientific achievements in the field of gastroenterology, using international experience in the field of additional professional education	Internship disciplines	Master, doctoral discipline, clinical practice	Department of internal medicine with a course in gastroenterology, endocrinology and pulmonology	2	29	22	9	2	Department of internal medicine with a course in gastroenterology, endocrinology and pulmonology	Ainabekova B.A.	
		Innovative methods for diagnosing and treating parasitic diseases						2	29	22	9				
12	Genetic diseases in gastroenterology	Genetic diseases in gastroenterology	MI	Study of modern principles of diagnosis and management of patients with genetic abnormalities of the gastrointestinal tract, features of viral lesions of the gastrointestinal tract.	Internship disciplines	Disciplines of magistracy and PhD	Department of Internal Medicine with courses in Nephrology, Hematology, Allergology and Immunology	4	58	44	18	2	Department of Internal Medicine with courses in Nephrology, Hematology, Allergology and Immunology	Turebekov D.K.	
4. Educational program: "7R01105 - Adult Hematology"															
13	Selected issues of hematology	Features of the clinical course and treatment of diseases of the blood system in the conditions of a new coronavirus infection Covid-19	MI	Study of modern principles of diagnosis and management of patients with disorders in the hemostasis system in viral diseases.	Internship disciplines	Disciplines of magistracy and PhD	Department of Internal Medicine with courses in Nephrology, Hematology, Allergology and Immunology	4	29	22	9	2	Department of Internal Medicine with courses in Nephrology, Hematology, Allergology and Immunology	Turebekov D.K.	
		Urgent conditions in diseases of the blood system and the provision of urgent therapy							29	22	9				
14	The main aspects of hematology	Principles of drug therapy of hemostatic disorders in congenital thrombophilia	MI	Study of modern principles of drug therapy for hemostasis disorders in hematology.	Internship disciplines	Disciplines of magistracy and PhD	Department of Internal Medicine with courses in Nephrology, Hematology, Allergology and Immunology	4	29	22	9	2	Department of Internal Medicine with courses in Nephrology, Hematology, Allergology and Immunology	Turebekov D.K.	
		Prevention of thromboembolic complications							29	22	9				
5. Educational program: "7R01107 - «Adult and paediatric pulmonology"															
15	Respiratory support in the practice of pulmonologist	Respiratory support for ARF	MI	Improving knowledge, abilities, practical skills based on evidence-based medicine for respiratory support in providing care to patients with acute and chronic respiratory failure.	Disciplines of internship	Disciplines of Master's degree, Doctoral study, clinical activity	Department of Internal Medicine with a course of gastroenterology, endocrinology and pulmonology	2	29	22	9	2	Department of Internal Medicine with a course of gastroenterology, endocrinology and pulmonology	Ainabekova B.A.	
		Respiratory support for CRF						2	29	22	9				
16	Radiation methods for diagnosing disseminated lung diseases	Principles of radiation diagnostics of disseminated lung diseases. Radiation diagnosis of focal dissemination	MI	Improving knowledge on the differential diagnosis of disseminated lung diseases. Formation of students' skills in radiation diagnostics of disseminated diseases of the lung.	Disciplines of internship	Disciplines of Master's degree, Doctoral study, clinical activity	Department of radiology and nuclear medicine	2	29	22	9	2	Department of radiology and nuclear medicine	Abdrakhmanova Zh.S.	
		Radiation diagnosis of interstitial lung damage						2	29	22	9				
17	Mobile spirometry		MI	Improving the knowledge and skills of residents in spirometry.	Internship in General Medicine	Disciplines of magistracy, doctoral studies	Department of Family Medicine №2	4	58	44	18	2	Department of Family Medicine №2	Latypova N.A.	
18	Interstitial lung disease (ILD)	Radiology of ILD	MI	Deepening knowledge on IZL. Study of differential diagnostic criteria for ILD based on radiological and clinical diagnostics.	Department of Radiology and Nuclear Medicine	Internal medicine, pulmonology, radiology	Department of Radiology and Nuclear Medicine	2	29	22	9	2	Department of Radiology and Nuclear Medicine	Abdrakhmanova Zh.S.	
		Differential diagnosis of ILD	MI		Internal Medicine, Pulmonology	Disciplines of magistracy, doctoral studies	Department of Family Medicine №2	2	29	22	9		Department of Family Medicine №2	Latypova N.A.	
19	The main aspects of pulmonology	Principles of drug therapy of respiratory diseases	MI	Study of modern principles of drug and non-drug therapy in pulmonology.	Internship disciplines	Disciplines of magistracy and PhD	Department of Internal Medicine with courses in Nephrology, Hematology, Allergology and Immunology	2	29	22	9	2	Department of Internal Medicine with courses in Nephrology, Hematology, Allergology and Immunology	Turebekov D.K.	
		Rehabilitation in pulmonology						2	29	22	9				
20	Selected questions of pulmonology	Orphan lung diseases and accumulation diseases.Fungal lung lesions. Lung damage in immunodeficiency	MI	Study of modern principles of diagnosis and management of patients with rare respiratory diseases and comorbid conditions.	Internship disciplines	Disciplines of magistracy and PhD	Department of Internal Medicine with courses in Nephrology, Hematology, Allergology and Immunology	2	29	22	9	2	Department of Internal Medicine with courses in Nephrology, Hematology, Allergology and Immunology	Turebekov D.K.	
		Features of management of patients with combined respiratory and cardiovascular pathology						2	29	22	9				

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									classroom 10%+38%	Independent clinical work under the guidance of a clinical mentor 37%	Independent work of students 15%				
6. Educational program: "7R01108 - Endocrinology adult, pediatric"															
21	Peculiarities of the course, diagnosis and treatment of the cardiovascular system diseases in patients with endocrine pathology	Peculiarities of the course, diagnosis and treatment of cardiovascular system diseases in patients with diabetes mellitus	MI	Improving students' skills in diagnosis, treatment, and management of cardiovascular diseases in comorbid patients with background endocrine pathology.	Internship disciplines	Master, doctoral discipline, clinical practice	Department of internal medicine with a course in gastroenterology, endocrinology and pulmonology	2	29	22	9	2	Department of internal medicine with a course in gastroenterology, endocrinology and pulmonology	Amabekova B.A.	
		Peculiarities of the course, diagnosis and treatment of cardiovascular system diseases in patients with thyroid pathology						2	29	22	9				
22	Differentiated management of patients with impaired calcium-phosphorus metabolism	Peculiarities of osteoporosis management in comorbid patients with endocrine and rheumatological pathology	MI	Improving students' skills in differentiated management of patients with calcium-phosphorus metabolism disorders on the background of combined pathology of the bone-joint and urinary systems.	Internship disciplines	Master, doctoral discipline, clinical practice	Department of internal medicine with a course in gastroenterology, endocrinology and pulmonology	2	29	22	9	2	Department of internal medicine with a course in gastroenterology, endocrinology and pulmonology	Amabekova B.A.	
		Peculiarities of the course, diagnosis and treatment of calcium-phosphorus metabolism disorders in renal diseases						2	29	22	9				
23	Differentiated management of patients with endocrine oncopathology	Features of the course, diagnosis, differential diagnosis and management of oncopathology of the endocrine system	MI	Improving the skills of students in diagnosis, differential diagnosis, treatment, tactics of managing malignant neoplasms of the endocrine system.	Internship disciplines	Master, doctoral discipline, clinical practice	Department of Oncology	2	29	22	9	2	Department of Oncology	Makshev A.K.	
		Topical issues of complex therapy of endocrine tumors						2	29	22	9				
24	Rational pharmacotherapy of type 2 diabetes	Modern views on rational pharmacotherapy of type 2 diabetes	MI	Modern views on rational pharmacotherapy of type 2 diabetes.	Disciplines of residency	Disciplines of magistracy	Department of Internal Medicine №4	4	58	44	18	2	Department of Internal Medicine №4	Tuganbekova S.K.	
25	Endocrine hypertension and cardiac pathology	Scientific concepts for the pathogenesis of endocrine hypertension and cardiac pathology	MI	Scientific concepts for the pathogenesis of endocrine hypertension and cardiac pathology.	Disciplines of residency	Disciplines of magistracy	Department of Internal Medicine №4	4	58	44	18	2	Department of Internal Medicine №4	Tuganbekova S.K.	
26	Topical issues of endocrinology	Urgent conditions in endocrinology	MI	To study modern approaches to the management of endocrine patients with the following conditions: diabetic comas, thyrotoxic crisis, acute adrenal insufficiency, hypopituitarism, hyper- and hypocalcemia, crisis with pheochromocytoma and hyperaldosteronism.	Internship disciplines	Disciplines of magistracy and PhD	Department of Internal Medicine with courses in Nephrology, Hematology, Allergology and Immunology	4	58	44	18	2	Department of Internal Medicine with courses in Nephrology, Hematology, Allergology and Immunology	Turebekov D.K.	
		Reproductive endocrinology	MI	Study of modern principles of diagnosis and management of patients with impaired reproductive function against the background of endocrine diseases.				4	58	44	18				
7. Educational program: "7R01109 - Adult Nephrology, children's"															
27	Nephrology - urgent conditions	Nephrology - urgent conditions	MI	Tactics for emergency conditions in nephrology.	Disciplines of residency	Disciplines of magistracy	Department of Internal Medicine №4	2	29	22	9	2	Department of Internal Medicine №4	Tuganbekova S.K.	
		Hepatorenal syndrome		Timely diagnostics and management tactics.				1	15	11	4				
		AKI (acute renal failure)		Issues of diagnosis and treatment tactics.				1	15	11	4				
28	Morphological criteria for prognosis and optimization of treatment of glomerular diseases	Morphological criteria for the prognosis of glomerular diseases	MI	Modern methods of diagnosis of morphological changes in glomerular diseases.	Disciplines of residency	Disciplines of magistracy	Department of Internal Medicine №4	2	29	22	9	2	Department of Internal Medicine №4	Tuganbekova S.K.	
		Optimization of treatment of glomerular diseases		Principles of treatment of glomerular diseases.				2	29	22	9				
29	Secondary kidney damage	Systemic and vascular lesions of the kidneys. Renal lesions associated with monoclonal gammopathy	MI	Comprehensive examination of the patient using clinical, instrumental, morphological and immunological methods.	Disciplines of residency	Disciplines of magistracy	Department of Internal Medicine №4	2	29	22	9	2	Department of Internal Medicine №4	Tuganbekova S.K.	
		Metabolic and TMA (thrombotic microangiopathy)		Comprehensive examination of the patient using clinical, instrumental, morphological and immunological methods.				1	15	11	4				
		Questions of differential approaches to the diagnosis and treatment of secondary kidney lesions		Differential diagnosis of systemic diseases.				1	15	11	4				

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30	The main aspects of nephrology	Emergency conditions in nephrology	MI	Within the framework of the discipline, it is planned to study hypotheses about the primary role of the kidneys in the development of arterial hypertension (AH), the role of hypertension in the development of hypertensive nephropathy with an outcome in terminal chronic kidney disease	Internship disciplines	Disciplines of magistracy and PhD	Department of Internal Medicine with courses in Nephrology, Hematology, Allergology and Immunology	2	29	22	9	2	Department of Internal Medicine with courses in Nephrology, Hematology, Allergology and Immunology	Turebekov D.K.	
		Kidneys and arterial hypertension						2	29	22	9				
31	Selected questions of nephrology	Features of management of patients after kidney transplantation	MI	Study of modern approaches to immunosuppressive therapy in patients after transplantation				4	58	44	18	2			
8. Educational program: "7R01111 - Infectious diseases in adults, children"															
32	Zoonotic infections		MI	Based on the modular principle in integration with clinical disciplines, to form residents' knowledge about current zoonotic infections.	Disciplines of the internship "General medical practice" and "Internal medicine"	Disciplines of magistracy and doctoral studies	Department of Infectious Diseases and Clinical Epidemiology	4	58	44	18	2	Department of Infectious Diseases and Clinical Epidemiology	Kulzhanova Sh.A.	
33	SARS-CoV-2 coronavirus infection		MI	Epidemiology, clinic, main diagnostic criteria, principles of treatment for new coronavirus infection Covid-19.	Disciplines of the internship "General medical practice" and "Internal medicine"	Disciplines of magistracy and doctoral studies	Department of Infectious Diseases and Clinical Epidemiology	4	58	44	18	2	Department of Infectious Diseases and Clinical Epidemiology	Kulzhanova Sh.A.	
34	Modern approaches in the diagnosis and treatment of infectious brain lesions		MI	Study of clinical and pathological features of emergency conditions in children due to central nervous system damage in infectious pathology. Differential diagnosis of infectious brain damage in children, modern approaches to treatment, identification of early and late complications, as well as the study of antibacterial resistance and a management program in an infectious hospital. Highlights of the WHO Global Strategy for the Control of Antimicrobial Resistance.	Major disciplines of residency	Master's and doctoral disciplines	Department of Children's Infectious Diseases	4	58	44	18	2	Department of Children's Infectious Diseases	Baeshva D. A.	
35	Tactics of the introduction of coronavirus infection in children at the outpatient and inpatient stages		MI	To study the epidemiology and clinical and laboratory features of COVID-19 in children.	Major disciplines of residency	Master's and doctoral disciplines	Department of Children's Infectious Diseases	4	58	44	18	2	Department of Children's Infectious Diseases	Baeshva D. A.	
36	Medical law-regulator of the activities of a pediatric infectious disease specialist		MI	The study of modern legislation in the field of the rights and obligations of health workers and patients from the standpoint of the demands of future professional activity.	Major disciplines of residency	Master's and doctoral disciplines	Department of Medical Law and Ethics	4	58	44	18	2	Department of Medical Law and Ethics	Abdiltov K.S.	
37	IT - practice of a pediatric infectious disease specialist (virtual consultations / consultations)		MI	Studying the basics and technical aspects of digitalization in medicine. The use of modern tools and frameworks to improve the skills of medical workers.	Major disciplines of residency	Master's and doctoral disciplines	Department of Biostatistics and Informatics and Information Technology	4	58	44	18	2	Department of Biostatistics and Informatics and Information Technology	Abdikadir Zh.N	
38	Tactics of managing patients with sepsis on the background of protein-energy malnutrition		MI	A study of the classification, symptoms, and management of PEU in sepsis in children. The main causes of malnutrition and their correction in children.	Major disciplines of residency	Master's and doctoral disciplines	Department of Children's Infectious Diseases	4	58	44	18	2	Department of Children's Infectious Diseases	Baeshva D. A.	
39	Current issues of coronavirus infection (COVID-19) in children: clinic, diagnosis, treatment, complications and prevention.		MI	Current issues of coronavirus infection (COVID-19) in children: clinic, diagnosis, treatment, complications and prevention.	Major disciplines of residency	Master's and doctoral disciplines	Department of Children's Infectious Diseases	4	58	44	18	2	Department of Children's Infectious Diseases	Baeshva D. A.	
9. Educational program: "7R01112 - Dermatovenereology for adults, children"															
40	Actual issues of dermatovenereology	Trichology	MI	The study of etiology, pathogenesis, clinical features and treatment of socially significant dermatoses.	Basic and specialized disciplines of residency	Disciplines of magistracy and doctoral studies	Department of dermatovenereology and dermatocosmetology	2	29	22	9	2	Department of dermatovenereology and dermatocosmetology	Batpenova G.R.	
		Dermatocology						2	29	22	9				
41	Principles for the diagnosis and treatment of chronic dermatoses	Systemic and external pharmacotherapy in dermatology	MI	Study of the diagnosis and treatment of chronic dermatoses.	Basic and specialized disciplines of residency	Disciplines of magistracy and doctoral studies	Department of dermatovenereology and dermatocosmetology	2	29	22	9	2	Department of dermatovenereology and dermatocosmetology	Batpenova G.R.	
		Laboratory diagnostics in dermatovenereology						2	29	22	9				
42	Infectious and non-infectious skin lesions	Multifactorial skin diseases	MI	The study of the etiology, pathogenesis, clinic, diagnosis, treatment of dermatoses of infectious and non-infectious origin.	Basic and specialized disciplines of residency	Disciplines of magistracy and doctoral studies	Department of dermatovenereology and dermatocosmetology	2	29	22	9	2	Department of dermatovenereology and dermatocosmetology	Batpenova G.R.	
		Fungal dermatosis						2	29	22	9				

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									classroom 10%+38%	Independent clinical work under the guidance of a clinical mentor 37%	Independent work of students 15%				
10. Educational program: "7R01113 - "Psychiatry for adults, children"															
43	Gerontologic psychiatry in specialty		MI	Gerontologic psychiatry in specialty forming of knowledge and skills of organization of psychiatryc help for patients of gerontologic age for residents. Study in gerontopsychiatry is due to tendency to constant increasing of the share of elderly in population of country, that causes the increasing of frequency of mental diseases, specific for old age and also increasing of number of young patients who have reached the old age.	Disciplines of internship	Disciplines of magistracy and doctoral studies	Department of Psychiatry and narcology	4	58	44	18	2	Department of Psychiatry and narcology	Rakisheva A.S	
44	Teenage Psychiatry and addictology		MI	The Teenage Psychiatry and addictology study questions concerning to teenagers health and processes of monitoring of their development, pathologic forms of behavior specific for teenagers - chemical and nonchemical dependences, delinquency and deviation behavior, suicidal and self-damaging behavior.	Disciplines of internship	Disciplines of magistracy and doctoral studies	Department of Psychiatry and narcology	4	58	44	18	2	Department of Psychiatry and narcology	Rakisheva A.S	
11. Educational program: "7R01114 -Radiology"															
45	Physical and technical basis of radiation diagnostic methods		MI	The history of CT, MRI, ultrasound. The principle of diagnostic methods. Methods of obtaining CT,MRI, ultrasound images. Methods of diagnostic research.	Major disciplines of residency	Master's and doctoral disciplines	Radiology named after academician Zh.Kh. Hamzabayev	4	58	44	18	2	Radiology named after academician Zh.Kh. Hamzabayev	Rakhimzhanova R.I	
46	Radiation diagnostics Radiation therapy in oncology		MI	Radiation diagnosis and radiation therapy for metastases of tumors in the bones, lungs, abdomen, kidneys and other organs. Methodical aspects of radiation diagnosis and radiation therapy: patient training, laying, positioning, safety. Indications and contraindications. Algorithms of x-ray diagnostic and x-ray therapy procedures for metastases.	Major disciplines of residency	Master's and doctoral disciplines	Radiology named after academician Zh.Kh. Hamzabayev	4	58	44	18	2	Radiology named after academician Zh.Kh. Hamzabayev	Rakhimzhanova R.I	
12. Educational program: "7R01115 - Radiation oncology"															
47	Computed tomography in oncological diseases		MI	Organization of X-ray and CT services in the Republic of Kazakhstan. History of the development of CT Techniques for obtaining CT images. How CT works. Techniques for head and neck CT. CT for: Oncological diseases of the skull and brain, nose, nasopharynx and paranasal sinuses, larynx. Methodology for the study of respiratory organs. CT in malignant lung tumors. Benign lung tumors. CT in oncological diseases of the mediastinum. Methods of CT examination of oncological diseases of the digestive system and abdominal cavity. CT in diseases of the colon and small intestine, pancreas, liver and biliary tract, non-organ oncological diseases of the abdominal cavity.	Anatomy, General Surgery, Nervous Diseases, Cardiology, Radiation Diagnostics and RadioTherapy	Pathological anatomy, hospital surgery, vascular surgery, neurosurgery, urology, cardiac surgery anesthesiology, radiation diagnostics and radiation therapy, radionuclide diagnostics	Radiology and nuclear medicine	4	58	44	18	2	Radiology and nuclear medicine	Abdrakhmanova Zh.S	
48	Magnetic resonance imaging in oncology		MI	Organization of MRI service in the Republic of Kazakhstan. History of the development of MRI Methods for obtaining MRI images. Principle of operation of MRI Methods of MRI of the head and neck. MRI diagnostics for: Oncological diseases of the skull and brain, nose, nasopharynx and paranasal sinuses, larynx. MRI method for examining the respiratory organs. Malignant tumors of the lungs. Benign tumors of the lungs. Methods for the study of oncological diseases of the digestive system and abdominal cavity. Oncological diseases of the colon and small intestine, pancreas, liver and biliary tract. Extraorgan oncological diseases of the abdominal cavity.	Anatomy, General Surgery, Nervous Diseases, Cardiology, Radiation Diagnostics and RadioTherapy	Pathological anatomy, hospital surgery, vascular surgery, neurosurgery, urology, cardiac surgery anesthesiology, radiation diagnostics and radiation therapy, radionuclide diagnostics	Radiology and nuclear medicine	4	58	44	18	2	Radiology and nuclear medicine	Abdrakhmanova Zh.S.	

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									classroom 10%+38%	Independent clinical work under the guidance of a clinical mentor 37%	Independent work of students 15%				
49	Breast Cancer Screening		MI	Organization of work during screening mammography studies in women in polyclinic conditions. The role of radiological methods in early radiodiagnosis of various diseases of the mammary gland in order to prevent complications, malignant processes. The role of electromammography in the detection of oncological diseases during mass preventive examinations of the population. Organizational principles of using the X-ray method in mammology. Organization of mammological screening of breast tumors. Peculiarities of radiological examination of the mammary gland in polyclinic conditions, laying, projections and technique for performing an X-ray examination of the mammary gland, determining the quality of a mammogram, choosing the degree of required normal, hard and soft radiation. Detection of diseases of the mammary glands at the outpatient stage. BIRADS - a system for screening studies. Emergency medical care with interventional radiation research methods. Occupational health and safety in x-ray rooms and laboratories. Measures of protection against the damaging effect of ionizing radiation.	Anatomy, General Surgery, Nervous Diseases, Cardiology, Radiation Diagnostics and RadioTherapy	Pathological anatomy, hospital surgery, vascular surgery, neurosurgery, urology, cardiac surgery, anesthesiology, radiation diagnostics and radiation therapy, radionuclide diagnostics	Radiology and nuclear medicine	4	58	44	18	2	Radiology and nuclear medicine	Abdrakhmanova Zh.S.	
13. Educational program: "7R01124 - Oncology (adult)"															
50	Oncological mammology	Modern aspects of breast cancer treatment	MI	The study of the discipline on the principles of treatment of breast cancer patients is relevant and is of great importance in the preparation of the residency for the formation of the foundations of clinical thinking, mastering communicative and clinical skills, collecting anamnesis, examination of patients, and knowledge and application of treatment methods at the present stage.	Specialized disciplines of the residency	Disciplines of magistracy, doctoral studies	Department of Oncology	2	29	22	9	2	Department of Oncology	Makishev A.K.	
		Rehabilitation of breast cancer patients	MI	The study of the discipline, which includes the principles of rehabilitation of breast cancer patients, is of great importance in the training of resident oncologists to form the foundations of clinical thinking, mastering communicative and clinical skills, collecting anamnesis, examining patients, medical examination, and being competent in the diagnosis of the most common complications.	Specialized disciplines of the residency	Disciplines of magistracy, doctoral studies	Department of Oncology	2	29	22	9	2	Department of Oncology	Makishev A.K.	
51	Nutritional support for cancer patients	Enteral nutrition of cancer patients	MI	The study of the causes of nutritional disorders in cancer patients and the principles of their correction, as well as indications and contraindications of enteral nutrition in a surgical hospital, is of great importance in the preparation of a residency for the formation of the foundations of clinical thinking, mastering communicative and clinical skills, collecting anamnesis, examining patients, and being competent in the diagnosis of the most common nutritional disorders.	Specialized disciplines of the residency	Disciplines of magistracy, doctoral studies	Department of Oncology	2	29	22	9	2	Department of Oncology	Makishev A.K.	
		Parenteral nutrition of cancer patients	MI	The study of the causes of nutritional disorders in cancer patients and the principles of their correction, as well as indications and contraindications of parenteral nutrition in a surgical hospital, is of great importance in the preparation of a residency for the formation of the foundations of clinical thinking, mastering communicative and clinical skills, collecting anamnesis, examining patients, and being competent in the diagnosis of the most common nutritional disorders.	Specialized disciplines of the residency	Disciplines of magistracy, doctoral studies	Department of Oncology	2	29	22	9	2	Department of Oncology	Makishev A.K.	
14. Educational program: "7R01130 - Pediatrics"															
52	Acquired and congenital diseases of the bronchopulmonary system in children	Interstitial and disseminated diseases in pediatric pulmonology	MI	Studying and mastering methods of diagnosis and treatment of interstitial and disseminated lung diseases in children.	internship disciplines	master, doctoral disciplines	Department of Children's diseases with courses of pulmonology and nephrology	2	29	22	9	2	Department of Children's diseases with courses of pulmonology and nephrology	Muldakhmetov M.S.	
		Congenital and hereditary lung diseases in children		Studying and mastering methods of diagnosis and treatment of congenital and hereditary lung diseases in children.				2	29	22	9				

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									classroom 10%+38%	Independent clinical work under the guidance of a clinical mentor 37%	Independent work of students 15%				
53	Modern aspects of hereditary diseases in children	Biochemical aspects of hereditary diseases Orphan diseases in the Republic of Kazakhstan, criteria for diagnosis and treatment	MI	Organization of medical and genetic assistance to children in the Republic of Kazakhstan. Description of the patient's phenotype. Mucoviscidosis. Congenital hypothyroidism. Phenylketonuria. Adrenogenital syndrome. Congenital epidermolysis bullosa (butterfly disease). Progeria (Hutchinson-Guilford syndrome). Congenital ichthyosis. Inherited forms of mental and physical development disorders in children. Screening diagnostics of hereditary diseases in the Republic of Kazakhstan	Specialized disciplines of the residency	Master's degree courses	Department of Pediatrics Diseases with the course of Allergology. Hematology and Endocrinology	4	58	44	18	2	Department of Pediatrics Diseases with the course of Allergology, Hematology and Endocrinology	Mocenko M.A.	
15. Educational program: "7R01131 "Neonatology"															
54	Ultrasound diagnostics in neonatology	Neurosonography in neonatology	MI	Deepening and systematizing the knowledge of a neonatologist in ultrasound diagnostics, in accordance with modern principles of evidence-based medicine, and acquiring skills in conducting ultrasound examinations and their correct interpretation. Training of a neonatologist who has a volume of knowledge, skills and practical skills that meet modern requirements and is ready for continuous professional development. Deepening and systematizing the knowledge of a neonatologist in ultrasound diagnostics, in accordance with modern principles of evidence-based medicine, and acquiring skills in conducting ultrasound examinations and their correct interpretation. Training of a neonatologist who has a volume of knowledge, skills and practical skills that meet modern requirements and is ready for continuous professional development.	Internship in General Medicine	Disciplines of magistracy, doctoral studies	department of Neonatology	2	29	22	9	2	department of Neonatology	Jasalykova K.K.	
		Echocardiography in neonatology						2	29	22	9				
55	Features of hemodynamics in newborns		MI	Deepening and systematization of the knowledge of a neonatologist in cardiology and hemodynamic features, principles of treatment in neonatology. Training of a neonatologist who has a volume of knowledge, skills and practical skills that meet modern requirements and is ready for continuous professional development.	Internship in General Medicine	Disciplines of magistracy, doctoral studies	department of Neonatology	4	58	44	18	2	department of Neonatology	Jasalykova K.K.	
16. Educational program: "7R01134 - "Forensic medical examination"															
56	Molecular genetic studies in forensic medicine	Molecular genetic studies in forensic medicine	MI	Train to evaluate and anticipate the legal consequences on matters relating to biological material evidence, ie, items related to the incident and help to reveal his circumstances, by deepening theoretical and clinical specialist training for independent work as a forensic expert, to ensure that the current level and the high quality of the forensic medical examination is appointed by law enforcement agencies.	Profiling related disciplines	Master's or doctoral degree disciplines	The department of forensic medicine	3	45	33	12	2	The department of forensic medicine	V.Ossipov	
		Molecular genetic studies in forensic medicine						1	14	11	5				
57	Forensic histology	General questions of forensic histology	MI	The features of sampling, fixation, processing, analysis and storage of histological material for the purposes of forensic medical practice are considered. Possible errors and conditions of their occurrence are highlighted. The general pathological processes and the nature of structural tissue damage in the aspect of forensic medical examination are described.	Profiling related disciplines	Master's or doctoral degree disciplines	The department of forensic medicine	1	14	11	5	2	The department of forensic medicine	V.Ossipov	
		Morphological diagnosis of causes of death						3	43	33	14				
17. Educational program: "7R01137 - Adult, pediatric neurology"															
58	Modern aspects of diagnosis, treatment and prevention of stroke. Issues of Medical Rehabilitation	Anatomical features of blood circulation	MI	Study of international recommendations for stroke management. The relevance of the problem of stroke, which occupies the second place in the structure of mortality and the first on the causes of disability.	Nervous diseases, clinical pharmacology, medical rehabilitation	Master's and doctoral courses	Department of Neurology	1	14	11	5	2	Department of Neurology	A.Kh. Dzhuksybayeva	
		Ischemic stroke						1	14	11	5				
		Hemorrhagic stroke						1	14	11	5				
		Pharmacology, surgical interventions in vascular diseases of Brains						1	14	11	5				
59	Demyelinating and autoimmune diseases of the nervous system	Clinical manifestation of demyelinating CNS diseases	MI	Acquisition of comprehensive theoretical knowledge and improvement of professional abilities and skills in the etiopathogenesis, diagnosis, treatment, rehabilitation and prevention of demyelinating and autoimmune diseases of the nervous system in accordance with modern international standards and the principles of evidence-based medicine.	Residency profile disciplines	Master's and doctoral courses	Department of Neurology	1	14	11	5	2	Department of Neurology	A.Kh. Dzhuksybayeva	
		Immunology and pharmacology of demyelinating CNS diseases						1	14	11	5				
		Clinical features of the course of Devik's disease						1	14	11	5				
		Neuroimaging methods in the diagnosis of demyelinating CNS diseases						1	14	11	5				

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									classroom 10%+38%	Independent clinical work under the guidance of a clinical mentor 37%	Independent work of students 15%				
60	Pain syndromes in neurological practice	Pathophysiology of pain	MI	The variety of pain syndromes in both general medical and neurological practice in particular dictates a clear knowledge on the issues of differentiation of these manifestations, including headaches, facial pain, vertebroalgia, as well as issues of adequate pain management.	Residency profile disciplines	Master's and doctoral courses	Department of Neurology	1	14	11	5	2	Department of Neurology	A.Kh. Dzhabysbayeva	
		Mechanisms of nociceptive and neuropathic pain						1	14	11	5				
		Headaches and facial pains						1	14	11	5				
		Back and limb pain						1	14	11	5				
61	Anatomical and physiological features of the nervous system in children. Issues of neurophysiology. Clinical syndromology. Research methods in pediatric neurology. Issues of teaching	Cerebrovascular Diseases and Craniocerebral Injuries in Children	MI	Knowledge of the fundamentals of pediatric clinical neurology is determined not only by the role of the nervous system in the development of somatic pathology, but also by the medical and social significance of pediatric neurological diseases. It especially concerns CVD, PNS pathology, craniocerebral traumas, epilepsy, neuro-muscular and hereditary diseases of childhood.	Residency profile disciplines	Master's and doctoral courses	Department of Neurology	1	14	11	5	2	Department of Neurology	A.Kh. Dzhabysbayeva	
		Pathology of the peripheral nervous system in children						1	14	11	5				
		Epilepsy in children						1	14	11	5				
		Neuromuscular and inherited diseases of childhood						1	14	11	5				
62	Clinical somnology	General somnology	MI	The discipline presents materials on the most important modern problems of somnology, a branch of biological science dealing with the study of sleep. The questions of human and animal sleep evolution, neurophysiological and biochemical mechanisms of this process organization are considered. Clinical aspects of somnology are considered, focusing on the most relevant widespread types of sleep disorders. Issues of sleep disorders in diseases of internal organs and the nervous system are discussed.	Residency profile disciplines	Master's and doctoral courses	Department of Neurology	1	14	11	5	2	Department of Neurology	A.Kh. Dzhabysbayeva	
		Private somnology						1	14	11	5				
		The Somnology, functional methods for studying sleep disorders						1	14	11	5				
		Sleep disorders, sleep disorders in somatic pathology						1	14	11	5				
18. Educational program: "7R01138 - Family medicine"															
63	Patronage service in Primary Healthcare	Early Child Development	MI	In this module, students will gain knowledge about the main technologies and tools for implementing the UNIVERSAL PROGRESSIVE MODEL OF HOME-VISITING SERVICES, the skills of a comprehensive assessment of the needs of pregnant women and young children, identifying signs of prenatal and postnatal depression in women according to the Edinburgh Scale, monitoring early childhood development, parenting counseling on attachment, exclusive breastfeeding, complementary feeding, home child injury prevention, neglect, and abuse detection and prevention through an effective case management methodology involving a multidisciplinary team of professionals, as well as other sectors providing services to families.	Basic and major disciplines of residency	Disciplines in residency	Department of Family Medicine №3	2	29	22	9	2	Department of Family Medicine №3	S. Urazova	
		Universal progressive model of nursing care for pregnant women and young children						2	29	22	9				
64	Current issues of allergology in the work of a general practitioner	Modern aspects of diagnosis and treatment of allergic diseases	MI	The course will consider topical issues of diseases of allergology: the most common nosologies that a general practitioner encounters at an outpatient appointment, diagnostic aspects, differential diagnosis, basic principles of treatment based on the laws of evidence-based medicine.	Internship discipline	Magistracy discipline	Department of Family Medicine №3	2	29	22	9	2	Department of Family Medicine №3	S. Urazova	
		Modern aspects of the prevention of allergic diseases						2	29	22	9				
65	Relevant issues of laboratory and instrumental diagnostics in primary care		MI	Improving the knowledge and skills of residents in the interpretation of laboratory and instrumental diagnostics in primary care.	Internship in General Medicine	Disciplines of magistracy, doctoral studies	Department of Family Medicine №2	4	58	44	18	2	Department of Family Medicine №2	Latypova N.A.	
66	Respiratory pathology in children in family medicine.		MI	Improving the knowledge and skills of residents in the diagnosis, differential diagnosis and treatment of respiratory pathology in children in family medicine.	Internship in General Medicine	Disciplines of magistracy, doctoral studies	Department of Family Medicine №2	4	58	44	18	2	Department of Family Medicine №2	Latypova N.A.	
67	Electrocardiographic diagnostics in practice of a general practitioner		MI	Improving the knowledge and skills of residents in the electrocardiographic diagnostics.	Internship in General Medicine	Disciplines of magistracy, doctoral studies	Department of Family Medicine №2	4	58	44	18	2	Department of Family Medicine №2	Latypova N.A.	
68	Rheumatic diseases in the practice of a family doctor		MI	Improvement of knowledge and skills of residents in the diagnosis, differential diagnosis and treatment of rheumatic pathology in the practice of a family doctor.	Internship in General Medicine	Disciplines of magistracy, doctoral studies	Department of Family Medicine №1	4	58	44	18	2	Department of Family Medicine №1	Abisheva S.T.	
69	Rehabilitation of patients with cardiovascular diseases in a polyclinic		MI	Improving the knowledge and skills of residents in the rehabilitation of patients with cardiovascular diseases in the practice of a family doctor.	Internship in General Medicine	Disciplines of magistracy, doctoral studies	Department of Family Medicine №1	4	58	44	18	2	Department of Family Medicine №1	Abisheva S.T.	
70	Management of patients with metabolic disorders in the practice of a family doctor		MI	Improving the knowledge and skills of residents in the diagnosis and treatment of metabolic diseases. Management of a comorbid patient in the work of a family doctor.	Internship in General Medicine	Disciplines of magistracy, doctoral studies	Department of Family Medicine №1	4	58	44	18	2	Department of Family Medicine №1	Abisheva S.T.	

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									classroom 10%+38%	Independent clinical work, under the guidance of a clinical mentor 37%	Independent work of students 15%				
19. Educational program: "7R01139 - Therapy"															
71	Features of the diagnosis and treatment of diseases of the internal organs in pregnant women	Features of diagnostics and treatment of diseases of the cardiovascular and respiratory systems in pregnant women	MI	The formation of residents' skills in the diagnosis and treatment of pathologies of the heart, lungs, liver, gastrointestinal tract, kidneys, hematopoietic and endocrine systems in pregnant women	Internship disciplines	Master, doctoral discipline, clinical practice	Department of internal medicine with a course in gastroenterology, endocrinology and pulmonology	2	29	22	9	2	Department of internal medicine with a course in gastroenterology, endocrinology and pulmonology	Ainabekova B.A.	
		Features of diagnostics and treatment of diseases of the digestive, urinary, hematopoietic and endocrine systems in pregnant women						2	29	22	9				
72	Features of the diagnosis and treatment of COVID-19 in patients with a therapeutic profile	Features of diagnosis and treatment of COVID-19 in patients with diseases of the cardiovascular and respiratory systems	MI	Formation of students' skills in the diagnosis and treatment of COVID-19 in patients with pathology of the cardiovascular, respiratory, digestive, urinary, hematopoietic and endocrine systems	Internship disciplines	Master, doctoral discipline, clinical practice	Department of internal medicine with a course in gastroenterology, endocrinology and pulmonology	2	29	22	9	2	Department of internal medicine with a course in gastroenterology, endocrinology and pulmonology	Ainabekova B.A.	
		Features of the diagnosis and treatment of COVID-19 in patients with pathology of the digestive, urinary, hematopoietic and endocrine systems						2	29	22	9				
73	Liver diseases in therapeutic practice: modern principles of diagnosis, prevention and treatment	Modern principles of diagnosis, prevention, treatment of acute and chronic liver diseases	MI	The study of modern methods of diagnosis, prevention and treatment of liver diseases is an integral part of the training of a general practitioner, due to the widespread prevalence of these diseases, as well as the introduction of the latest diagnostic and treatment methods from the standpoint of evidence-based medicine into clinical practice.	Internship disciplines	Master, doctoral discipline, clinical practice	Department of Internal medicine with a course of geriatrics	3	43	33	14	2	Department of Internal medicine with a course of geriatrics	Tkachev V.A.	
		Liver cirrhosis and its complications						1	14	11	5				
74	Differential diagnosis for nephrotic syndrome in therapeutic practice	Differential diagnosis in primary nephrotic syndrome	MI	Nephrotic syndrome is one of the most important and difficult nephrological syndromes. Differential diagnosis in nephrotic syndrome and the establishment of the main diagnosis that led to its formation is a responsible and difficult task in therapeutic practice. The increase in cases of nephrotic syndrome in adulthood and old age, requiring clarification of its nosological affiliation, is of paramount importance for treatment and prognosis.	Internship disciplines	Master, doctoral discipline, clinical practice	Department of Internal medicine with a course of geriatrics	2	29	22	9	2	Department of Internal medicine with a course of geriatrics	Tkachev V.A.	
		Differential diagnosis in secondary nephrotic syndrome						2	29	22	9				
20. Educational program: "7R01140 - Physical medicine and rehabilitation adult, children"															
75	Rehabilitation of sportsmen		MI	Features of rehabilitation of athletes with TBI, limb and spine injuries. The use of physical methods for the recovery of athletes. Recovery time and sports forecast.	Bases of medical rehabilitation, Physiotherapy, Physical therapy (kinesitherapy), Functional diagnostics, Balneology, Erotherapy, Inpatient rehabilitation, including children's rehabilitation.	Disciplines of master's, PhD degrees	Rehabilitation and sports medicine	2	29	22	9	2	Rehabilitation and sports medicine	Slivkina N. V.	
76	Robotic rehabilitation		MI	Features of robotic rehabilitation is the interaction of the central nervous system with other functional systems using robots for upper and lower limbs.	Bases of medical rehabilitation, Physiotherapy, Physical therapy (kinesitherapy), Functional diagnostics, Balneology, Erotherapy, Inpatient rehabilitation, including children's rehabilitation.	Disciplines of master's, PhD degrees	Rehabilitation and sports medicine	2	29	22	9	2	Rehabilitation and sports medicine	Slivkina N. V.	

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									classroom 10%+38%	Independent clinical work under the guidance of a clinical mentor 37%	Independent work of students 15%			
77	Rehabilitation of post-stroke patients		MI	Features of rehabilitation of post-stroke patients. Principles, stages, methods. Ergotherapy, kinesiotherapy and mechanotherapy in the rehabilitation of post-stroke patients. Evaluation scales.	Bases of medical rehabilitation, Physiotherapy, Physical therapy (kinesitherapy), Functional diagnostics, Balneology, Erotherapy, Inpatient rehabilitation, including children's rehabilitation.	Disciplines of master's, PHD degrees	Rehabilitation and sports medicine	4	58	44	18	2	Rehabilitation and sports medicine	Slivkina N. V.
78	Rehabilitation of children with cerebral palsy		MI	Features of rehabilitation of children with cerebral palsy. Principles, stages, methods. Ergo and kinesiotherapy in the rehabilitation of children with cerebral palsy. Problems of social rehabilitation.	Bases of medical rehabilitation, Physiotherapy, Physical therapy (kinesitherapy), Functional diagnostics, Balneology, Erotherapy, Inpatient rehabilitation, including children's rehabilitation.	Disciplines of master's, PHD degrees	Rehabilitation and sports medicine	2	29	22	9	2	Rehabilitation and sports medicine	Slivkina N. V.
79	Features of rehabilitation after Covid infection		MI	Methodology of individual selection of rehabilitation methods in patients who have suffered Covid infection. Formulation of rehabilitation diagnosis and rehabilitation prognosis in these patients. Setting rehabilitation goals. Social and professional rehabilitation.	Bases of medical rehabilitation, Physiotherapy, Physical therapy (kinesitherapy), Functional diagnostics, Balneology, Erotherapy, Inpatient rehabilitation, including children's rehabilitation.	Disciplines of master's, PHD degrees	Rehabilitation and sports medicine	2	29	22	9	2	Rehabilitation and sports medicine	Slivkina N. V.
80	Examination of temporary and permanent disability (ITU)		MI	Determination of temporary disability based on the assessment of health status, nature and working conditions, social factors. Holding of medical and social expertise. Features of establishing disability for children.	Bases of medical rehabilitation, Physiotherapy, Physical therapy (kinesitherapy), Functional diagnostics, Balneology, Erotherapy, Inpatient rehabilitation, including children's rehabilitation.	Disciplines of master's, PHD degrees	Rehabilitation and sports medicine	2	29	22	9	2	Rehabilitation and sports medicine	Slivkina N. V.
81	Rehabilitation and assistive technologies based on ICF		MI	Methodology of individual selection of technical auxiliary (compensatory) means and special means of transportation, taking into account the criteria of the ICF. Setting rehabilitation goals. Social and professional rehabilitation of persons with disabilities.	Bases of medical rehabilitation, Physiotherapy, Physical therapy (kinesitherapy), Functional diagnostics, Balneology, Erotherapy, Inpatient rehabilitation, including children's rehabilitation.	Disciplines of master's, PHD degrees	Rehabilitation and sports medicine	2	29	22	9	2	Rehabilitation and sports medicine	Slivkina N. V.

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№	a module / discipline	module component	cycle of discipline	Course Description	prerequisites	postrequisites	the department participating in the module	the number of credits (hours)	amount of hours			course (specialization / training trajectory)	responsible department for the module / discipline	Head of the department
									classroom 10%±38%	Independent clinical work under the guidance of a clinical mentor 37%	Independent work of students 15%			
21. Educational program: "7R01142 - Clinical pharmacology"														
82	Topical issues of clinical pharmacology	The basis of clinical pharmacology	MI	Topical issues of rational use of medicines and drug provision, development of clinical recommendations, examination of restrictive lists in the field of drug provision, development of science and the national service of clinical pharmacology. Rational use of medicines is an essential component. Irrational use of medicines can lead to low effectiveness of treatment; increased morbidity and mortality; unreasonable spending of financial resources; the formation of adverse psychosocial phenomena, etc.	Basic and profile disciplines of residency	Master's or doctoral disciplines	Clinical pharmacology	2	29	22	9	2	Clinical pharmacology	Ahmadyar N.S.
		Rational use of medicines	MI					2	29	22	9			
83	Safe use of medicines	Drug safety	MI	The study of research and activities related to the identification, evaluation and prevention of side effects of medicines.	Basic and profile disciplines of residency	Master's or doctoral disciplines	Clinical pharmacology	4	38	45	17	2	Clinical pharmacology	Ahmadyar N.S.
84	Principles of rational use of antibacterial agents	Antibacterial therapy and prevention of antibiotic resistance	MI	The basis for the introduction of a rational policy for the use of antibiotics is the prospect of improving the quality of medical care for the population, reducing treatment costs, as well as preventing the spread of polyresistant strains of microorganisms.	Basic and profile disciplines of residency	Master's or doctoral disciplines	Clinical pharmacology	4	38	45	17	2	Clinical pharmacology	Ahmadyar N.S.

Approved at the meeting of quality assurance committee for educational programs of residency and additional education

Protocol no.5 from 16.03.2022 y.

Head of the Registrar's office  N. Tlesheva