

ОҢТҮСТІК ҚАЗАҚСТАН
MEDISINA
AKADEMIASY
«Оңтүстік Қазақстан медицина академиясы» АҚ



SOUTH KAZAKHSTAN
MEDICAL
ACADEMY
АО «Южно-Казакстанская медицинская академия»

Approved by
Rector of the «SKMA» JSC
Zh. Seitzhanova
« 04 » 05 2025y.



EDUCATIONAL PROGRAM

Group of the educational program: VM 086 Medicine

Code of the EP: 6B10115

Title of the educational program: Medicine

Level of the educational program: Bachelor and specialized master's degree

Shymkent, 2025



The educational program 6B10115 «Medicine» was developed by the members of the «Medicine» EP AC

Agreed with employers:

Chief physician of the CP №7

Zhanabayev N.S.

Chief physician of the CH №2

Pozilov B.Dzh.

Chairman «Medicine» EP AC

Ayvezkhanlyzy D.

Protocol № 4 of «14» 03 2025y.

Agreed by the Methodological Council

Vice Rector for academic affairs

Anartayeva M.U.

Protocol № 9 of «02» 05 2025y.

Approved by the Academic Council

Protocol № 13 of «02» 05 2025y.



ОҢТҮСТІК ҚАЗАҚСТАН MEDISINA AKADEMIASY «Оңтүстік Қазақстан медицина академиясы» АҚ		SOUTH KAZAKHSTAN MEDICAL ACADEMY АО «Южно-Казахстанская медицинская академия»	
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Passport of the educational program

1. Mission of the educational program: Training of qualified and competitive personnel capable of self-improvement and scientific research.

2. Purpose of educational program: Training of master physician with a system of general cultural, professional and research competencies, capable and ready for practical activity.

3. Rationale of the educational program:

-for students: obtaining a continuous integrated medical education, including basic training -bachelor's degree, internship and master's degree.

At the end of 6 years of study the graduate will be awarded degree of Master and receive a diploma with the qualification of a doctor.

-need on the labor market: providing personnel with qualities such as high skill and professional perseverance, availability of the necessary practical and theoretical knowledge, competence, observation and insight, developed clinical thinking and predilection.

4. Professional standard, on the basis of which the educational program is developed:

Normative documents for the development of educational program

-Order of the Minister of Health of the Republic of Kazakhstan "On approval of the state mandatory standards for levels of education in the field of health care" of 04.07.2022, № KRDSM-63 with amendments and additions of 26.06.2025, № 61

- Order of the Minister of Science and Higher Education of the Republic of Kazakhstan "On approval of the state mandatory standards of higher and postgraduate education" of 20.07.2022, № 2 with amendments and additions of 04.03.2025, № 90

- Order of the Minister of Health of the Republic of Kazakhstan "On approval of professional standards in the field of healthcare" of 25.01.2024, № 46 (Professional Standard: "General Medical Practice/Family Medicine")

- Order of the Minister of Science and Higher Education of the Republic of Kazakhstan "On approval of the state mandatory standards of higher and postgraduate education" of 20.07.2022, № 2 with amendments and additions of February 20, 2023, № 66;

- Order of the Minister of Healthcare of the Republic of Kazakhstan "On approval of the state mandatory standards for levels of education in the field of health care" of 04.07.2022, № KRDSM-63;

- Order of the Minister of Healthcare of the Republic of Kazakhstan "On approval of model curricula on medical and pharmaceutical specialties" of 09.01.2023, № 4;

- Order of the Vice-Minister of Healthcare of the Republic of Kazakhstan "On approval of step-by-step implementation of continuous integrated medical education" of 08.08.2022, № 661;

- Code of the Republic of Kazakhstan dated 07.07.2020 № 360- VI "On People's Health and Health Care System" (with amendments and

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additions as of 04.07.2022);

- Law of the Republic of Kazakhstan "On Education" dated 27.07.2007 № 319- III with amendments as of 04.07.2022
- Order of the Minister of Education and Science of the Republic of Kazakhstan dated 16.10.2013 № 420 "On Approval of Standard Rules of Higher and (or) Postgraduate Education Organizations" with amendments and additions of 29.12.2021
- Order of the Minister of Education and Science of the Republic of Kazakhstan dated April 20, 2011 № 152 "On approval of rules of educational process organization by credit technology of education" (as amended on May 06, 2021)
- Order of the Minister of Healthcare of the Republic of Kazakhstan dated January 30, 2008, №27 "On approval of the list of programs of continuous integrated education on clinical specialties" (as amended on May 14, 2021)
- Order of the Minister of Education and Science of the Republic of Kazakhstan from 30.10.2018 № 595 with amendments and additions as of 29.12.2021. "On approval of the Standard Rules of activity of educational organizations of respective types and kinds",
- Order of the Director of the BP AM № 45 o/d MES RK dated June 30, 2021. "Guidelines for the development of educational programs of higher and postgraduate education"
- "Regulations on the Order and Procedures for the Development of Educational Programs" "SKMA" JSC from **22.04.2024y.**
- Internal regulatory documents of SKMA JSC.

5. Area of professional activity: the area of professional activity of graduates who have mastered the educational program 6B10115 "Medicine" includes the protection of public health by providing medical care to adults and children.

6. Objects of professional activity:

- healthcare management organizations;
- healthcare organizations;
- organizations of education;
- organization of science;
- organization of social protection;
- adult and child populations;
- a set of means and technologies aimed at creating conditions for the protection of public health.

Types of professional activity:

- therapeutic and preventive and diagnostic; - organization and management;
- scientific-research; - pedagogical.



General information

№	EP characteristics	Details
1	Registration number	6B10100121
2	Code and classification of the field of education	6B10 Healthcare
3	Code and classification of training areas	6B101 Healthcare
4	Group of educational programs	BM 086 Medicine
5	Code, Name of the educational program	6B10115 Medicine
6	Type of the EP	Updated EP
7	SCED level	
8	NQF level	7
9	IQF level	7
10	Distinctive features of EP	Continuous integrated educational program
	Partner University (JEP)	-
	Partner University (TDEP)	-
11	Key competences	KC1 Medical knowledge: Synthesize professional and scientific medical knowledge to provide qualified medical care.
		KC2 Communications: Communicate effectively with the patient, the patient's environment, and health care professionals to achieve better patient outcomes.
		KC3 Clinical skills: Implementation of qualified medical care of the basic category of complexity. Determining the strategy of providing qualified medical care of the second category of complexity to the population
		KC4 Professionalism: Coordination of activities in health care organizations. Ability to make decisions and take responsibility for the result of qualified medical care provision

		<p>KC5 Personal and professional development: Ability to learn independently and train other members of the professional team, actively participate in discussions, conferences and other forms of continuous professional development</p> <p>KC6 Regulatory and legal knowledge: Ability to act within the legal and organizational framework of the health care system of the Republic of Kazakhstan</p> <p>KC7 Research: Ability to investigate and evaluate the results of their professional activities, to apply the principles of diagnostics, and to apply the principles of medical research. Application of modern research methods in public health care with consideration of bioethics and introduction into clinical practice</p>
12	Learning outcomes	<p>LO1.Applies fundamental knowledge of biomedical, clinical, epidemiological, and social-behavioral sciences to practice.</p> <p>LO2. Provides patient-centered care in biomedical, clinical, epidemiological sciences aimed at diagnosis, treatment and prevention of the most common diseases.</p> <p>LO3.Promotes activities within the framework of the RK health legislation to ensure quality health care.</p> <p>LO4.Communicates effectively with patients, their families and health care providers in an ethical, deontological and inclusive manner, resulting in effective information sharing and collaboration.</p> <p>LO5.Demonstrates skills in formulating a clinical diagnosis, prescribing a treatment plan based on evidence-based practices.</p> <p>LO6.Conducts outpatient appointments, diagnosis, treatment, follow-up and rehabilitation of pediatric and adult patients, including pregnant women, based on evidence-based practice principles.</p> <p>LO7.Observes the norms of public health protection, sanitary and hygienic regime and norms of labor safety in health care organizations, epidemiological safety of the environment.</p> <p>LO8.Provides emergency medical care for urgent and life-threatening conditions.</p> <p>LO9.Works in the electronic databases of the RK health care system, providing documentation of the processes of medical services and management of medical and statistical information as part of the processes of digitalization of health care.</p>

		<p>LO10.Qualitatively performs professional duties on the basis of self-control and continuous improvement of his/her activity.</p> <p>LO11.Analyzes the effectiveness of diagnosis and treatment results, applying the principles of personalized medicine.</p> <p>LO12.Applies the results of modern research methods in his/her professional activity using artificial intelligence, including processing and analyzing big data, processing medical images, diagnosing diseases, taking into account bioethics and observing all ethical norms.</p> <p>LO13.Evaluates population health indicators and its physical, radiological, chemical and bio-environmental determinants, applying advanced technologies to identify hidden patterns, risk prediction.</p> <p>LO14. Conducts sanitary and educational activities to strengthen the health of the population, preserve health and prevent diseases.</p>
13	Form of training	full-time
14	Language of training	Kazakh, Russian and English
15	Period of study	6 years
16	Amount of credits	360
17	Awarded degree, qualification	Master's degree, physician
18	Availability of an appendix to the license for the direction of personnel training	KZ73LAA00011788
19	Availability of EP accreditation	Yes
	Name of the accreditation body	“Independent Agency for Accreditation and Rating” IAAR
	№ accreditation certificate, validity period of accreditation	Bachelor - No. AB 5420, 21.06.2024 - 20.06.2029 Master - No. AB 5420, 21.06.2024 - 20.06.2029.
20	Information on disciplines	Appendix 1.2.

Appendix 1.2

Competencies/learning outcomes achievability matrix

№	Name of discipline	Brief description of discipline	Cycle (GED, BD, PD)	Component (MC, UC, EC)	Credit number	EP Learning outcomes
Cycle of general education disciplines					46	
1	History of Kazakhstan	Formation of the worldview, civil and moral positions of the future specialist based on a deep understanding and scientific analysis of the main stages, patterns and originality of the historical development of Kazakhstan, as well as the ability to use the methods and techniques of historical description to analyze the causes and consequences of events in the history of Kazakhstan.	GED	MC	5	LO 1 LO 10
2	Physical education	Formation of a person who is competitive and capable of physical self-improvement through the skills of building a personal educational trajectory throughout life for selfdevelopment and career growth, focused on a healthy lifestyle to ensure full-fledged social and professional activities through methods and means of physical culture.	GED	MC	6	LO1 LO14
3	Foreign language	Formation of language using skills and speech means based on a system of grammatical knowledge for building communication programs in a foreign language, self-improvement and professional success;	GED	MC	8	LO1 LO4

		communication in oral and written forms in a foreign language to solve problems of interpersonal, intercultural and professional communication; analysis of information in accordance with the communication situation and the ability to interpersonal social and professional communication in a foreign language				
4	Kazakh (Russian) language	Formation of communication skills in oral and written forms in Kazakh and Russian languages to solve the problems of interpersonal, intercultural and professional communication; analysis of information in accordance with the communication situation and the ability to interpersonal social and professional communication in Kazakh and Russian languages; use of language and speech means based on the system of grammatical knowledge to build communication programs in Kazakh and Russian, professional success and self-improvement	GED	MC	8	LO1 LO4 LO10
5	Information and communication technology	Fundamental concepts of information and communication technologies, including the architecture of computer systems, types of software, database systems, data analysis and management, network technologies, cybersecurity, Internet technologies, cloud technologies, multimedia	GED	MC	3	LO 1 LO 4 LO 9
6	Philosophy	Formation of the assessment results based on worldview positions formed by the foundations of knowledge of philosophy, which require scientific understanding and the definition and application of methods of scientific and philosophical knowledge in the world; interpret the content and specific features of the mythological,	GED	MC	5	LO1 LO4 LO10

		scientific and scientific worldview; characteristics of the quantity and quality of the analysis of social assets, processes and problems.				
7	Socio-political knowledge module (psychology, cultural studies, sociology and political science)	Applies acquired knowledge for effective socialization and adaptation in changing socio-cultural conditions. He is able to analyze social processes, critically comprehend information, and apply sociological research methods in various fields. Has the skills of logical and reasoned analysis of psychological phenomena. He is able to perceive and interpret socially significant cultural knowledge, the psychological foundations of inclusion and the principles of equality and acceptance of differences, and use them in personal and professional activities.	GED	MC	6	LO1 LO2 LO4
8	Legal, financial - economic, environmental and scientific knowledge *	Based on economic, financial, legal, environmental and scientific knowledge, the formation of one's own moral and civic position; general competencies in dealing with social, business, cultural, financial, legal and ethical norms of Kazakh society for self-development and lifelong education, mobility in the modern world and critical thinking; skills in applying scientific methods and research techniques a specific science.	GED	EC	5	LO1 LO3 LO4 LO10
9	Fundamentals of Economics and Law*	Formation of knowledge on the fundamentals of constitutional, administrative, civil and family, financial and labor, environmental and land and criminal rights of the Republic of Kazakhstan. The market and competition. Money and inflation. The monetary system. Financial system and fiscal policy. Features of the development of the	GED	EC		LO1 LO3 LO10

		national economy in the Republic of Kazakhstan. The choice of a business idea and a startup, business planning in the system of entrepreneurial activity, the content of the business plan, the skills of their development. Basic concepts of law and state-legal phenomena.				
10	Ecology, sustainable development and life safety, scientific research methods*	Development of environmental literacy: based on environmental, scientific knowledge and sustainable development, formation of skills: to analyze environmental problems, develop analytical and critical thinking skills when considering environmental issues, identify and study environmental problems, search for cause-effect relationships and propose appropriate solutions; conduct and interpret environmental research: data collection skills, information analysis and application of environmental techniques to study natural systems; apply environmental knowledge to analyze and solve problems related to environmental pollution and their impact on the human body. Mastering the methodological foundations of scientific knowledge. Application of scientific research methods in theory and practice.	GED	EC		LO1 LO7 LO13
	Fundamentals of Anti-Corruption Culture and Entrepreneurship Skills*	Formation of an anti-corruption culture. Theoretical and methodological foundations of the concept of "corruption". Political power and corruption. Nepotism. The transformation of corruption in modern states. Anti-corruption policy in the Republic of Kazakhstan and the role of the social sphere in it. Legal responsibility for acts of corruption.	GED	EC		LO1 LO3 LO10

Cycle of basic disciplines					105	
9	Introduction to the profession	Integrated discipline: the formation of medical knowledge, moral and ethical aspects, the professional activity of a doctor, the organization of healthcare and the therapeutic and protective regime. Developing skills to use safe care, effective communication with patients, colleagues, and family members. Knowledge of medical law, patients' rights, legal responsibility, compliance with the legislation of Kazakhstan, development of self-control, continuous improvement of professional skills and competencies.	BD	UC	4	LO2 LO3 LO4 LO10
10	Training practice "Safe Care"	Formation of skills of effective communication with the patient, high-quality performance of professional duties, organization of self-control in order to continuously improve their activities. Implementation of an individual approach to the patient and implementation of patient-centered care. Reception and sanitary treatment of patients. Transportation of patients. Nutrition of the patient. Care for the seriously ill. Prevention of pressure sores. Change of linen. Sanitary and epidemiological regime of the hospital.	BD	UC	1	LO2 LO4 LO5 LO7
11	Molecular Biology and Medical Genetics	Integrated discipline: formation of knowledge about cell structure, polymorphism, biomembranes, tissue organization, molecular mechanisms of biopotentials, regulation of acid-base states and their role in pathologies; about the basic concepts and principles of genetics: structure and function of genes, mechanisms of inheritance and mutation; skills: analyze and interpret genetic data; explain hereditary laws and their application in practical situations,	BD	UC	6	LO1 LO11 LO13

		such as predicting the risk of developing genetic diseases in children. The acquired knowledge will help in medical practice: to successfully prevent genetic diseases in children; to properly consult patients and develop individual treatment plans; to effectively interact with patients and colleagues in the field of genetics and heredity.				
12	Chemistry	Formation of fundamental knowledge about chemical processes in the human body, types of concentrations for determining the quantitative content of substances in biological fluids and the preparation of medical solutions, the biological role of organic compounds used in medicine. The basic principles of qualitative and quantitative analysis for the diagnosis and treatment of diseases	BD	UC	4	LO1 LO11
13	Musculoskeletal system and skin in normal	Integrated discipline: Formation of fundamental knowledge about anatomical, physiological and histological features of the musculoskeletal system and skin, with mastery of Latin terminology necessary for precise interdisciplinary and clinical interaction. The application of this knowledge in biomedical and clinical sciences. Biomechanisms of excitability-contractility, occurring in muscles in connection with the skeleton, the phenomenon of movement. Knowledge of the macroscopic and microscopic structure of bones, joints, and muscles.	BD	UC	6	LO1 LO2 LO4

14	Introduction to clinic	<i>Integrated discipline:</i> formation of professional skills for work in medical institutions, including patient care, performance of medical procedures, record keeping, development of communication skills and understanding of ethical standards, compliance with the principles of inclusion, ensuring quality care and compliance with the legislation of the Republic of Kazakhstan in the field of health care.	BD	UC	3	LO1 LO2 LO3 LO4 LO6
15	Educational practice “As a ward and procedure nurse assistant”	Formation of skills of effective communication with the patient, high-quality performance. professional duties, organization of self-control in order to continuously improve their activities. Organization of work in medical organizations, Methods of using medicines. Organization of the work of the treatment room. The injection procedure. Blood and urine sampling techniques for laboratory tests. Preparation of patients for X-ray, instrumental, ultrasound and other research methods.	BD	UC	1	LO2 LO4 LO5 LO14
16	Nervous system, sensory organs, vision, hearing and balance in normal	Integrated discipline: the formation of fundamental knowledge about their anatomical, physiological and histological features of the nervous system and sensory organs, vision, hearing and balance, the application of this knowledge in biomedical and clinical sciences. The structure and membranes of the brain and spinal cord. Formation of plexuses of spinal nerves. Topography of cranial nerves. Ventricles of the brain, circulation of	BD	UC	5	LO1 LO2 LO4

		cerebrospinal fluid. The pathways of the brain and spinal cord. The autonomic nervous system. The structure of the senses, vision, hearing, and balance.				
17	Cardiovascular system in normal	<i>Integrated discipline:</i> building fundamental knowledge of the anatomical, physiological and histological features of the cardiovascular system, applying this knowledge to biomedical and clinical sciences, providing patient-centered care, respecting the principles of ethics and deontology for effective professional practice in health care.	BD	UC	4	LO1 LO2 LO4
18	Digestive and endocrine systems in normal	<i>Integrated discipline:</i> formation of fundamental knowledge about anatomical, physiological and histological features of digestive organs and endocrine system, application of this knowledge in biomedical and clinical sciences, providing patient-centered care, observing the principles of ethics and deontology for effective professional practice in health care.	BD	UC	4	LO1 LO2 LO4

19	Digestive and endocrine systems in pathology	Integrated discipline: formation of fundamental knowledge on the basics of semiotics, syndromology, physical examination methods and basic laboratory parameters, issues of etiology, pathogenesis, morphogenesis of the digestive and endocrine systems, acquisition of skills in choosing and analyzing the effectiveness of diagnostic methods and properties of medicines for the treatment of diseases, taking into account the principles of evidence-based medicine and a patient-centered approach.	BD	UC	5	LO1 LO2 LO6 LO11
20	Normal genitourinary system	<i>Integrated discipline:</i> formation of fundamental knowledge of anatomical, physiological and histological features of the organs of the genitourinary system, application of this knowledge in biomedical and clinical sciences, providing patient-centered care, observing the principles of ethics and deontology for effective professional practice in health care.	BD	UC	3	LO1 LO2 LO4
21	Normal blood and lymph	<i>Integrated discipline:</i> building fundamental knowledge of the anatomical, physiological and histological features of blood and lymph., applying this knowledge to biomedical and clinical sciences, providing patient-centered care, adhering to the principles of ethics and deontology for effective professional practice in health care.	BD	UC	3	LO1 LO2 LO4
22	General pathology	Integrated discipline: forms fundamental knowledge about the patterns of development of common pathological processes for the diagnosis of the most common diseases. Promotes understanding of the skills of pathophysiological analysis of clinical and laboratory data, description of macro - and micro-preparations, pathophysiological foundations of	BD	UC	5	LO1 LO2 LO11

		prevention and treatment of various diseases. Promotes the development of medical technologies using artificial intelligence, medical image processing, and disease treatment.				
23	Biochemistry	Formation of knowledge about the functional organization of enzymes, the role of membranes in metabolism, mechanisms of transport of substances, vitamins and their biological role, anaerobic ways of obtaining energy, catabolism, metabolism of carbohydrates, lipids and proteins, as well as the concept of nitrogen balance as an indicator of protein metabolism. Principles of analysis for the diagnosis and treatment of diseases	BD	UC	4	LO1 LO11
24	Fundamentals of pharmacology and formulation	Formation of basic knowledge about pharmacodynamics and pharmacokinetics of drugs, their classification, action, indications, contraindications, side effects, dosage and rules of prescriptions in Latin, with further application in emergency care and selection of rational therapy on the basis of evidence-based medicine.	BD	UC	3	LO1 LO6 LO8
25	Microbiology and immunology	It forms knowledge about the morphophysiology and genetics of microorganisms, etiopathogenesis, immunity, laboratory diagnostics, prevention, and further promotes understanding of the skills of immunological diagnostic methods and mechanisms of functioning of the immune system, observing the norms of the legislation of the Republic of Kazakhstan. Applies scientific knowledge based on evaluation of results for the diagnosis and treatment of diseases.	BD	UC	6	LO1 LO3 LO7

26	Genitourinary system in pathology	Integrated discipline: formation of fundamental knowledge on the basics of semiotics, syndromology, physical examination methods, etiology, pathogenesis, morphogenesis of the genitourinary system, development of skills in choosing and analyzing the effectiveness of diagnostic methods and properties of medicines for the treatment of diseases, taking into account the principles of evidence-based medicine and a patient-centered approach.	BD	UC	4	LO1 LO2 LO6 LO11
27	Industrial practice “As a physician assistant - resident-1”	Acquisition of practical skills in therapeutic and diagnostic manipulations, care of patients of all ages, taking into account ethics and inclusion, formulation of a preliminary clinical diagnosis. Development of effective communication, self-control, professional responsibility and record keeping in the context of digitalization of health care to ensure quality medical care	BD	UC	3	LO4 LO5 LO6 LO9 LO10
28	Public health and the foundations of evidence-based medicine	Formation of knowledge on health protection policy, activities of health care structures, types of medical care, regulatory and legal aspects, ethics and deontology. The principles of evidence-based medicine, patient-centered approach, basics of prevention, sanitary-hygienic norms and sanitary-educational work to promote public health are mastered.	BD	UC	7	LO3 LO4 LO7 LO14
29	Propaedeutics of pediatric diseases	Formation of knowledge about methods of examination of children, physiological features of childhood, symptoms and syndromes of diseases, principles of diagnosis. Formation of communication skills with children and parents, respecting	BD	UC	5	LO4 LO6 LO9 LO10

		ethical principles and inclusion, as well as the basics of medical records and care of children in outpatient settings, taking into account self-monitoring and improvement.				
30	Fundamentals of Radiologic Diagnosis	Formation of knowledge on radiation diagnostics and modern methods of imaging, including artificial intelligence: radiography, ultrasound, CT, MRI, radioisotope and interventional diagnostics, mastering the principles of image interpretation, ensuring radiation safety, compliance with the legislation of the Republic of Kazakhstan, development of clinical thinking and application of patient-oriented approach taking into account ethical standards	BD	UC	3	LO2 LO3 LO4 LO12
31	Hygiene and epidemiology	Integrated discipline: Promotes the formation of skills in the learning process about the principles and features of hygienic rationing of various environmental factors. Carries out its activities within the framework of the legislation of the Republic of Kazakhstan in the field of healthcare. Conducts preventive and health-improving activities in the pediatric service to evaluate biorisks. Adheres to the norms of sanitary and hygienic regime and occupational safety.	BD	UC	6	LO1 LO2 LO7 LO14
32	Foreign language (professional)	Formation of skills of communicative competence necessary for professional interaction, mastery of a professional foreign language for conducting oral and written communication in a scientific and clinical environment, ensuring continuous improvement of activities using modern information sources and technologies.	BD	UC	3	LO4 LO10 LO12

33	Healthcare management	Formation of managerial and communicative competence of a healthcare professional within the framework of the legislation of the Republic of Kazakhstan. Mastering the principles of management, developing leadership skills, making managerial decisions, analyzing performance, ensuring teamwork, implementing digital technologies, effective communication, self-improvement and continuous professional development in healthcare	BD	UC	3	LO3 LO4 LO9 LO10
34	Clinical epidemiology*	Formation of clinical and epidemiological research skills using evidence-based medicine. Early diagnosis, identification and elimination of risk factors. Organization of scientific research: setting goals, selecting methods, collecting and analyzing data, and presenting results. Environmental impact assessment, preventive and health education measures.	BD	EC	4	LO7 LO12 LO13 LO14
35	Artificial intelligence and digital medicine *	Formation of knowledge and skills about digital technologies in medicine and healthcare, modern software and hardware for processing medical information. The ability to use information flows in the professional activity of a doctor, telemedicine services, artificial intelligence for diagnosis, verification of the correctness of drug administration, access to resources and medical data.	BD	EC		LO9 LO12 LO13
		Cycle of profile disciplines			149	
36	Cardiovascular system in pathology	<i>Integrated discipline:</i> formation of fundamental knowledge on semiotics, syndromology, physical examination methods, etiology, pathogenesis and morphogenesis of cardiovascular system, mastering the skills of selection and analysis of the	PD	UC	5	LO1 LO2 LO6 LO11

		effectiveness of diagnostic methods and properties of drugs for the treatment of diseases, taking into account the principles of evidence-based medicine and patient-centered approach.				
37	Respiratory System in Normal	<i>Integrated discipline:</i> building fundamental knowledge of the anatomical, physiological and histological features of the respiratory organs, applying this knowledge to biomedical and clinical sciences, providing patient-centered care, respecting the principles of ethics and deontology for effective professional practice in health care.	PD	UC	4	LO1 LO2 LO4
38	Respiratory system in pathology	<i>Integrated discipline:</i> the formation of fundamental knowledge on the basics of semiotics, syndromology, physical examination methods, etiology, pathogenesis, morphogenesis of the respiratory system, mastering the skills of selection and analysis of the effectiveness of diagnostic methods and properties of drugs for the treatment of diseases, taking into account the principles of evidence-based medicine and patient-centered approach.	PD	UC	5	LO1 LO2 LO6 LO11
39	Project Activities and Biostatistics	<i>Integrated discipline:</i> Formation of knowledge about methods and tools of project management in medicine, practical skills of using methods of descriptive statistics and theory of hypothesis testing in biomedical research to analyze diagnosis and treatment, as well as processing statistical data using advanced technologies to identify patterns and risk prediction.	PD	UC	5	LO 3 LO 11 LO13
40	Blood and lymph in pathology	<i>Integrated discipline:</i> formation of fundamental knowledge on the basics of semiotics, syndromology, physical	PD	UC	4	LO1 LO2

		examination methods, etiology, pathogenesis, morphogenesis of the blood and lymphatic system, mastering the skills of selection and analysis of the effectiveness of diagnostic methods and properties of drugs for the treatment of diseases, taking into account the principles of evidence-based medicine and patient-centered approach.				LO6 LO11
41	Musculoskeletal system and skin in pathology	<i>Integrated discipline:</i> formation of fundamental knowledge on the basics of semiotics, syndromology, physical examination methods, etiology, pathogenesis, morphogenesis of musculoskeletal system and skin, mastering the skills of selection and analysis of the effectiveness of diagnostic methods and properties of drugs for the treatment of diseases, taking into account the principles of evidence-based medicine and patient-centered approach.	PD	UC	4	LO1 LO2 LO6 LO11
42	General surgery	Formation of skills in the organization of primary surgical care: aspetics and antiseptics; injuries, burns and care for them; wounds and wound process and types of surgical sutures; bleeding, blood loss and care for them; local and regional anesthesia in surgery, general anesthesia; issues of ethics and deontology in surgery; issues of hospitalization. The acquired knowledge will make it possible in medical practice to correctly diagnose and analyze research results to assess the condition of surgical patients, provide surgical care, develop and implement preventive and rehabilitative measures to preserve the health of children.	PD	UC	3	LO2 LO4 LO6 LO8

43	Topographical anatomy with operative surgery	Formation of the anatomical foundations of clinical thinking and basic skills of basic surgical techniques: the general principle of the layered structure of the human body; topographic anatomy of specific areas; clinical anatomy of internal organs, cellular spaces, neurovascular formations, bones and large joints; age-related features of the structure, shape and position of organs in children; technique of performing basic surgical techniques using general surgical and specialized instruments; issues of ethics and deontology. In his professional activity, a pediatrician can apply the acquired topographic and anatomical knowledge to substantiate the diagnosis, explain the features of the course of pathological processes, and solve diagnostic and anatomical and surgical problems.	PD	UC	5	LO1 LO2 LO4 LO6
44	Nervous system, sensory organs, vision, hearing and balance in pathology	<i>Integrated discipline:</i> the formation of fundamental knowledge on the basics of semiotics, syndromology, physical examination methods, etiology, pathogenesis and morphogenesis of pathological processes of the nervous system and sensory organs, mastering the skills to select and analyze the effectiveness of diagnostic methods and properties of drugs for the treatment of diseases, taking into account the principles of evidence-based medicine and patient-centered approach.	PD	UC	4	LO1 LO2 LO6 LO11
45	Internal diseases-1	Effective measures aimed at the diagnosis, treatment and prevention of the main forms of diseases of the respiratory, cardiovascular, and urinary systems. Postcovid syndrome. Diagnosis, provision of qualified and urgent medical care	PD	UC	5	LO4 LO5 LO6 LO9

		for urgent and life-threatening conditions. Research and evaluation of treatment outcomes based on scientific evidence. Maintaining medical records (medical history).				LO11
46	Internal diseases-2	Effective measures aimed at the diagnosis, treatment and prevention of the main forms of diseases of the digestive and endocrine, musculoskeletal systems, hematopoiesis system. Diagnosis, provision of qualified and urgent medical care for urgent and life-threatening conditions. Research and evaluation of treatment outcomes based on scientific evidence. Maintaining medical records (medical history).	PD	UC	5	LO4 LO5 LO6 LO9 LO11
47	Childhood diseases-1	The main directions of development of pediatric science. Age periods of a child's development. Patterns of growth and development of children. Children's health. Health groups. The concept of diseases by systems. Clinic, diagnosis, and treatment of diseases of the respiratory system, cardiovascular system, gastrointestinal tract, hematopoietic system, urinary system, and endocrine system.	PD	UC	5	LO4 LO5 LO6 LO9 LO11
48	Childhood diseases-2	Organization of medical care for children. Etiology, clinical symptoms, indicators of additional research methods, course, complications, prognosis, diseases of the respiratory system, cardiovascular system, gastrointestinal tract, hematopoietic system, urinary system, endocrine system. Maintaining medical records (medical history).	PD	UC	5	LO4 LO5 LO6 LO9 LO11
49	Obstetrics	Fundamentals of the organization of obstetric care to the population; physiology of pregnancy and childbirth, general principles of examination and features of pregnancy management; Management, reception of physiological	PD	UC	5	LO2 LO4 LO5 LO6

		childbirth. Principles and methods of first aid in emergency obstetric pathology; principles of medical examination. Methods of diagnosis of physiological and pathological processes related to reproductive function. Proper medical behavior with colleagues, patients and their relatives from the modern perspective of medical ethics and deontology.				LO8
50	Gynecology	Integrated discipline: formation of skills in the organization of health protection of children and adolescents; family planning; application of methods of contraception based on scientific principles; diagnosis, treatment and prevention of pediatric gynecological diseases. Mastering the main stages of medical and diagnostic work by gynecological patients of child and adolescent age. Oncogynecology: types, causes of development, diagnosis and treatment. The acquired theoretical knowledge and practical skills will allow the pediatrician to freely solve professional tasks, improve his activities and conduct research in the field of preserving the reproductive health of children and adolescents.	PD	UC	5	LO2 LO3 LO5 LO6 LO8
51	Infectious diseases	Preventive examinations. Algorithms of early and differential diagnosis, tactics of management of patients with infectious diseases based on modern methods and scientific data. Information technologies of Primary health care. Effective communication in teamwork when solving patient problems. Working with documentation in an electronic system. Communication skills, self-control, patient support. Infectious disease research skills.	PD	UC	5	LO3 LO6 LO7 LO9 LO14

52	Pediatric infectious diseases	The formation of knowledge in the field of infectology, taking into account age characteristics, the study of the relationship with clinical microbiology and immunology, the development of diagnostic methods, pharmacotherapy and prevention of infectious diseases. Development of skills in compliance with health protection standards, sanitary regime, epidemiological safety and medical documentation management within the framework of the legislation of the Republic of Kazakhstan.	PD	UC	4	LO3 LO6 LO7 LO9 LO14
53	Phthisiology	Formation of knowledge and skills on diagnostic methods, fundamentals of pharmacotherapy and prevention of tuberculosis, based on the application of scientific principles. Skills of compliance with the norms of public health protection, sanitary and hygienic regime, occupational safety in healthcare organizations, epidemiological safety of the environment.	PD	UC	4	LO3 LO7 LO11 LO12 LO14
54	Fundamentals of surgical diseases	Formation of knowledge and skills in the diagnosis of surgical pathology, emergency care, choice of patient management tactics and indications for hospitalization. The use of modern treatment and rehabilitation technologies, compliance with ethics and deontology, effective communication, formulation of a clinical diagnosis using evidence-based medicine and fulfillment of duties within the framework of the legislation of the Republic of Kazakhstan.	PD	UC	5	LO3 LO4 LO5 LO6 LO8
55	Traumatology	Formation of knowledge and skills in the diagnosis, treatment and prevention of injuries of the musculoskeletal	PD	UC	4	LO2 LO4

		system, emergency care for injuries, principles of surgical and conservative treatment, restoration of functions after injuries. Rehabilitation methods, injury prevention, compliance with standards of medical care, effective communication, the use of evidence-based medicine and emergency care.				LO5 LO6 LO8
56	Pediatric Surgery	Formation of knowledge and skills in the diagnosis of surgical pathology in children, patient management tactics, indications for hospitalization, the use of new diagnostic technologies and surgical interventions. Issues of ethics, deontology, effective communication, formulation of clinical diagnosis, use of evidence-based medicine, provision of emergency care and compliance with the legislation of the Republic of Kazakhstan.	PD	UC	5	LO3 LO4 LO6 LO8 LO9
57	Clinical practice-3	Collection of complaints and medical history, objective examination, physical examination of patients, interpretation of clinical data, identification of the leading syndrome, appointment of an examination and treatment plan, keeping a diary of dynamic observation and medical history. Ensuring a patient-centered approach, effective communication, the use of evidence-based medicine and the management of medical records in digital format.	PD	UC	3	LO2 LO3 LO5 LO6 LO9 LO10
58	Fundamentals of General Medical Practice	Organization of the work of GPs, the basics of management of a medical outpatient clinic. Maintenance of accounting and reporting documentation, medical audit in PHC. Effective interaction with specialists and patients in solving health problems. Algorithms for rational differential	PD	UC	6	LO4 LO5 LO6 LO8 LO9

		diagnosis, management tactics and dynamic monitoring of patients. Diagnosis and provision of emergency and emergency medical care to patients with acute diseases of internal organs at the prehospital stage. Communicative competence in extreme situations.				
59	Industrial practice "As an assistant to a general practitioner"	Organization of GP work, outpatient clinic management, documentation management and medical audit in PHC conditions, differential diagnosis, patient management tactics, dynamic monitoring, correction of the treatment plan, emergency care, effective communication with patients, formulation of a clinical diagnosis using evidence-based medicine and modern technologies	PD	UC	3	LO4 LO5 LO6 LO8 LO9
60	Emergency medical care-1	Formation of students' knowledge and practical skills in the field of emergency care at the pre-hospital stage in accordance with the legislation of the Republic of Kazakhstan and international standards. Development of competencies in the application of modern algorithms of basic and advanced cardiopulmonary resuscitation, management of terminal conditions and assistance in emergency situations. Mastering the principles of organizing an emergency medical service, effective diagnosis and treatment of emergency conditions in various fields of medicine (cardiology, pulmonology, endocrinology, etc.)	PD	UC	5	LO3 LO4 LO8 LO9 LO11
61	Emergency medical care-2	Formation of students' knowledge and practical skills in the field of emergency care for injuries, acute infectious diseases, mental and neurological disorders, surgical and	PD	UC	4	LO3 LO4 LO8

		urological conditions, poisoning, as well as in pediatric and obstetric and gynecological practice. Mastering algorithms for the diagnosis and treatment of emergency conditions in various fields of medicine, using the principles of evidence-based medicine. Formation of medical documentation management skills in the context of digitalization of healthcare and the use of electronic accounting systems.				LO9 LO11
62	Neurology	Formation of skills for the diagnosis of neurovascular, neuromuscular, demyelinating, degenerative diseases of the brain. Neurological examination, identification of lesion symptoms and substantiation of topical diagnosis, fundamentals of pharmacotherapy, prevention and rehabilitation. Effective interaction with patients and other specialists. Documenting the processes of providing medical services. Continuous improvement of activities. Research skills in the field of neurology	PD	UC	5	LO4 LO5 LO6 LO9 LO11
63	Mental disorders(psychiatry and narcology)	Integrated discipline: organization of psychiatric and drug treatment services. Methods of examination of patients in psychiatry. Legal issues of psychiatry and narcology. Forensic psychiatric and narcological examination. General psychopathology: disorders of sensation and perception, thinking, memory and intelligence, emotional disorders, disorders. volition and drives, pathology of attention and consciousness. Issues of ethics and deontology. High-quality performance of professional duties and medical care within the framework of the legislation of the Republic of Kazakhstan	PD	UC	3	LO 2 LO 3 LO 4 LO 6

64	Visual diagnostics	Formation of knowledge on radiation diagnostics and modern methods of pathology visualization, including artificial intelligence: radiography, ultrasound, CT, MRI, radioisotope and interventional diagnostics, mastering the principles of image interpretation, ensuring radiation safety, compliance with the legislation of the Republic of Kazakhstan, the development of clinical thinking and the application of a patient-oriented approach taking into account ethical standards.	PD	UC	4	LO2 LO3 LO4 LO11 LO12
65	Clinical pathomorphology and forensic medicine	Integrated discipline: Formation of skills in the lifetime and postmortem pathomorphological diagnosis of common diseases and emergencies: pathoanatomic autopsy, protocol, epicrisis, formulation of diagnosis, comparison of diagnoses, rules for sampling material for biopsy examination, pathohistological conclusion. Procedural and organizational bases of forensic medical examination within the framework of legislation. Features of the pathoanatomical examination of fetal and child corpses that died in the perinatal period and infancy. Expertise in examining the corpses of children with various signs of violent and non-violent death. Filling out a medical death certificate, coding the causes of death.	PD	UC	3	LO3 LO6 LO8 LO13
66	Clinical Pharmacology	Formation of knowledge about the clinical and pharmacological approach to choosing effective and safe drugs for the treatment and prevention of diseases, conducting pharmacological analysis and expertise of drug therapy, developing a drug formulation based on clinical	PD	UC	4	LO2 LO5 LO6 LO8 LO9

		recommendations and scientific research, applying knowledge in practice to provide emergency care in urgent conditions and analyzing the effectiveness of treatment..				LO11
67	Eye diseases and otolaryngology	Formation of skills in the diagnosis and treatment of eye diseases and diseases of the ear and nose, prevention methods, formulation of clinical diagnosis, application of evidence-based medicine and advanced technologies to analyze the effectiveness of treatment results, patient-centered approach, effective communication skills, medical records management and self-monitoring for continuous improvement of professional activities.	PD	UC	4	LO2 LO4 LO6 LO9 LO10 LO11
68	Outpatient polyclinic therapy	The principles of the organization of the work of the GP: diagnosis, differential diagnosis, treatment of the most common diseases among the adult population according to clinical protocols. Screening studies of target population groups. Stationary replacement technology. Examination of working capacity. Emergency and emergency medical care at the pre-hospital stage. Effective interaction of GPs with patients and other specialists. Medical examination. Work in an automated information system. Application of scientific principles in the work. Conducting research. Health indicators assessment, health education, health protection and prevention.	PD	UC	5	LO4 LO5 LO6 LO8 LO9 LO13 LO14
69	Ambulatory polyclinic pediatrics	Formation of skills and abilities of organizing and conducting a complex of preventive measures (dynamic medical supervision of children of various age groups, the frequency of complex examinations by their doctors of	PD	UC	4	LO4 LO5 LO6 LO8

		<p>narrow specialties); medical and advisory assistance at home and in a polyclinic; medical examination and rehabilitation, therapeutic and preventive care in preschool institutions and schools; anti-epidemic measures and vaccination immunoprophylaxis; providing first aid for emergency conditions in children and adolescents; maintaining medical records, including in electronic form. The acquired knowledge will allow the pediatrician in medical activity to provide full medical care, including in critical conditions, to carry out preventive and rehabilitative measures to preserve life and health at all age periods of children's lives and successfully solve their professional tasks.</p>				<p>LO9 LO13 LO14</p>	
	Internship program					30	
70	Internal diseases GMP	<p>Diagnosis, treatment, prevention, follow-up and rehabilitation of adult patients based on modern methods and scientific data. Working with documentation in an electronic system. Effective communication with patients, self-monitoring, and support. Mastering research skills in therapy, using advanced technologies to improve diagnosis and treatment.</p>	PD	UC	7	<p>LO4 LO6 LO8 LO9 LO11 LO12 LO14</p>	
71	Pediatric diseases in GMP	<p>Diagnosis, treatment, prevention, dispensary supervision, rehabilitation, medical, social and emergency care for children based on modern methods and scientific data. Patronage of pregnant women and young children. Routine checkups. Working with documentation in an electronic system. Communication skills, self-control, patient support.</p>	PD	UC	5	<p>LO4 LO6 LO8 LO9 LO11 LO12</p>	

		Mastering research skills in pediatrics, using advanced technologies to improve diagnosis and treatment.				LO14
72	Obstetrics and Gynecology in GMP	Diagnosis, treatment, prevention, follow-up and rehabilitation of gynecological patients, management of pregnant women using modern methods. Patronage of pregnant women. Working with documentation in an electronic system. Communication skills, self-control, patient support. Mastering research skills in obstetrics and gynecology, using advanced technologies to improve diagnosis and treatment.	PD	UC	5	LO4 LO6 LO8 LO9 LO11 LO12 LO14
73	Surgical diseases and oncology in GMP	Diagnostic algorithms and management tactics for patients with surgical and oncological diseases based on modern methods. Information technology in surgery. Effective communication in teamwork when solving patient's problems. Working with documentation in an electronic system. Mastering research skills in surgery, using advanced technologies to improve diagnosis and treatment.	PD	UC	5	LO4 LO6 LO8 LO9 LO11 LO12 LO14
74	Infectious diseases in GMP, including children	Preventive examinations, algorithms of early and differential diagnosis of infectious diseases, tactics of their treatment based on modern methods. The use of information technology, effective communication in teamwork, work with electronic documentation. Compliance with the sanitary and hygienic regime, occupational safety. Self-monitoring, patient support, improved diagnosis and treatment.	PD	UC	5	LO4 LO6 LO7 LO8 LO9 LO11 LO14
75	General hematology*	Anatomical and physiological foundations of the hematopoiesis system and hemostasis system. The modern	PD	EC		LO2 LO5

		concept of blood clotting. Modern methods of research of blood cells, hematopoiesis organs and hemostasis system. A syndromic approach to the diagnosis of blood diseases based on scientific principles. Research skills in the field of hematology. Documenting the processes of providing medical services. Communication skills, self-control, patient support. Continuous improvement of activities.				LO6 LO9 LO10 LO12
76	Basic Endocrinology*	Anatomical and physiological foundations of the endocrine system. Practical aspects of diagnosis and treatment of the most common endocrine diseases using modern methods on a scientific basis. Tactics of management of patients. Prevention, rehabilitation and dynamic monitoring of patients. Medical examination. Health education Documenting the processes of providing medical services. Research skills in the field of endocrinology. Communication skills, self-control, patient support.	PD	EC	3	LO2 LO5 LO6 LO9 LO12 LO14
77	Medical Radiology *	Physical and radiobiological foundations of radiation diagnostics and radiation therapy methods of obtaining medical images organization of the department of radiation diagnostics and radiation therapy. Modern methods of radiation diagnostics. The possibilities of radiation therapy in the complex treatment of major tumor and non-tumor diseases, indications, planning, features of the course of radiation therapy. Ethics and deontology in radiology, sanitary and hygienic regime, occupational safety. High-quality performance of professional duties, self-control and continuous improvement in work	PD	EC		LO4 LO5 LO6 LO7 LO10 LO14

78	Interpretation of electrocardiograms and echocardiograms*	Principles of examination of patients with diseases of the cardiovascular system. Physical methods of examination of the cardiovascular system and their interpretation. Methods of recording and interpretation of ECG, EchoCG, bicycle ergometry, load tests for the determination of myocardial ischemia. Ethics and deontology in interaction with patients and medical professionals. High-quality performance of professional duties, self-control and continuous improvement in work.	PD	EC		LO4 LO5 LO6 LO11 LO12
79	Organization of anesthesiological and resuscitation work *	Organization of anesthesiological and resuscitation work in medical organizations. Legal and ethical aspects. Initial examination by an anesthesiologist. Anesthesia card. Anesthesia protocol. Diaries of the resuscitator. Transferable epicrisis. Stage epicrisis. Anesthetic equipment and monitors. Preoperative examination, premedication, general anesthesiology. Different levels of patient monitoring. Risk classes in anesthesiology. A modern view of premedication. Basic manipulations in anesthesiology. Types of anesthesia. Pharmacology in anesthesiology. The concept of a critical condition. Cardiopulmonary resuscitation. The concept of thanatogenesis. Extended cardiopulmonary resuscitation.	PD	EC		LO3 LO4 LO8 LO11 LO12
Master's degree					30	
Profile disciplines					5	
80	Neurology in GMP	Formation of diagnostic skills for neurovascular, neuromuscular, demyelinating, and degenerative brain diseases. Neurological examination, detection of lesion	PD	UC	5	LO4 LO5 LO6



		symptoms and topical diagnosis. Fundamentals of pharmacotherapy, prevention and rehabilitation. Interaction with patients and specialists. Documentation of medical services, continuous improvement of activities, research skills in neurology.				LO9 LO10 LO11
81	Experimental research work				13	
82	Writing, defending a master's thesis and preparing for, and passing a comprehensive exam				12	
	TOTAL				360	
Note: *- Elective component disciplines						