



## EDUCATIONAL PROGRAM

Educational program code: 7M10144  
Name of the educational program: Medicine  
Level of the educational program: Magistracy (research and pedagogical direction)

Shymkent, 2025 y.

The educational program 7M10144 « Medicine» was developed by the members of the Academic Committee of educational programs at the master's and doctoral levels

Chairman of the AC OP for Masters and Doctoral levels

K.K.Orynbassarova

Protocol № 8 25 03 2025y.

**Agreed with the employer:**

State Public Utility on the Right of Economic Management «City Hospital №2» of the Health Care Institution of Shymkent

State Public Institution «City Infectious Diseases Hospital» of the Health Care Institution of Shymkent

State Public Utility on the Right of Economic Management «Mental Health Center» of the Shymkent City Health Care Institution

State Public Institution on the Right of Economic Management "Regional Children's Hospital" of the Health Care Institution of the Turkestan Region

**Approved by the Methodological Council**  
Vice-rector for academic work

Protocol № 9 of 02 05 2025y.

**Approved by the Academic Council**

Protocol № 13 of 02 05 2025y.





## Passport of the educational program

**1. Mission of the educational program:** To train Masters who have the skills of modern clinical research, are able to conduct research, analytical work and make effective decisions in priority areas of the healthcare system.

**2. Purpose of the educational program:** To train highly professional, competitive scientific, pedagogical, administrative and managerial personnel in the specialty «Medicine» for scientific and healthcare organizations with fundamental knowledge that guarantees them professional mobility in the real developing world .

**3. Rationale for the educational program:** Demand in the labor market: the educational program is focused on health care professionals who are able to conduct scientific research and implement organizational and managerial technologies to solve complex problems of protecting public health and developing an effective health care system in Kazakhstan.

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

*Regulatory documents for the development of an educational program*

- Order of the Minister of Science and Higher Education of the Republic of Kazakhstan «On Approval of State Compulsory Standards of Higher and Postgraduate Education» dated July 20, 2022 No. 2.

- Order of the Minister of Health of the Republic of Kazakhstan «On Approval of State Compulsory Standards for the Levels of Education in the Field of Healthcare» dated July 4, 2022 No. KR DSM-63.

- Order of the Minister of Education and Science of the Republic of Kazakhstan «On Approval of the Rules for the Organization of the Educational Process on Credit Technology of Training in Higher and (or) Postgraduate Education Organizations» dated April 20, 2011 No. 152.

- Law of the Republic of Kazakhstan «On Education» dated July 27, 2007 No. 319-III (as amended on 04.07.2022)

- Order of the Minister of Education and Science of the Republic of Kazakhstan «On Approval of the Model Rules for the Activities of Higher and Postgraduate Education Organizations» dated October 30, 2018 No. 595 (as amended on 29.12.2021)

- «Regulations on the Procedure and Procedures for the Development of Educational Programs» of JSC «SKMA» dated 29.04.2024.

- Internal regulatory documents of JSC «SKMA»

**5. The field of professional activity:** Health care organizers, heads of state and non-state medical and non-medical institutions; Research activities at universities.

**6. The object of professional activity:** Healthcare management organizations, healthcare and social security organizations.

*Types of professional activities:*

- organizational and managerial;
- scientific and research activities.

#### General information

№	Characteristics of the EP	Data
1	Registration Number	7M10100055
2	Code and classification of the field of education	7M10 Healthcare
3	Code and classification of the field of study	7M101 Healthcare
4	Group of Educational Programs	M144 Medicine
5	Code, name of the educational program	7M10144 Medicine
6	Type of EP	Current EP
7	ISCED level	7
8	NQF level	7
9	IQF Level	7
10	Distinctive features of the EP	No

	Partner University (JEP)	-
	Partner University (DDEP)	-
11	List of competencies	<p>Key competencies of the graduate of the program:</p> <p><b>KC1</b> Modern approaches and research methods in healthcare.</p> <p><b>KC2</b> Population health and its physical, radiological, chemical and biological-environmental determinants.</p> <p><b>KC3</b> Health promotion: health education, health protection and disease prevention.</p> <p><b>KC4</b> Ethics.</p>
12	Learning Outcomes	<p><b>LO1</b> Plans professional activity in the area of his/her qualification in the field of medicine, proceeding from modern achievements of science and practice.</p> <p><b>LO2</b> Engaged in professional growth, demonstrates introspection skills and experience for teaching at the higher and postgraduate levels, taking into account the principles of student-centered learning and assessment, pedagogical interaction with stakeholders; development of teaching materials taking into account the integration of education, science, innovation and digital technologies..</p> <p><b>LO3</b> Capable to acquire new knowledge and skills of applied character in research, professional and pedagogical activity in the field of medicine.</p> <p><b>LO4</b> Demonstrates knowledge and understanding of the interdisciplinary nature of scientific research in modern education and in the field of medicine.</p> <p><b>LO5</b> Uses scientific information, digital technologies and artificial intelligence to develop the field of medicine and introduce new approaches within his qualifications.</p> <p><b>LO6</b> Accurately and unambiguously gives information, ideas, outputs, problems and solutions, both to specialists, and nonspecialists in the area of his/her qualification in the field of medicine.</p>



		<b>LO7</b> Capable to solve problems in the field of medicine within the qualification on the basis of scientific approaches.
13	Form of study	In-person
14	Language of instruction	Kazakh, Russian
15	Amount of loans	120
16	Degree Awarded	Master of Medical Sciences in 7M10144 «Medicine»
17	Duration of training	2 years
18	Availability of an appendix to the license for the direction of personnel training	KZ36LAA00011387 (018)
19	Availability of EP accreditation	No
	Name of accreditation body	-
	Accreditation Certificate No., Accreditation Validity Period	-
20	Information about disciplines	Annex 1.2



*Annex 1*

**Matrix of correlation of learning outcomes in the educational program as a whole  
 with the competencies being formed**

	LO1	LO2	LO3	LO4	LO5	LO6	LO7
KC1							
KC2							
KC3							
KC4							

*Annex 1.2*

**Matrix of achievability of competencies/learning outcomes**

№	Name of the discipline	A brief description of the discipline	Cycle (BD, PD)	Component (UC, OC)	Number of credits	Generated LO (codes)
<b>The cycle of basic disciplines</b>					35	
<b>Mandatory / University component</b>					20	
1	History and philosophy of science	Philosophy and methodology of science as branch of philosophical knowledge. Structure of scientific knowledge. Scientific rationality. Features of the present stage of science development. Science as social institute. Natural sciences in structure of modern scientific knowledge. The history of formation of sciences about society, culture, history and person. Actual philosophical problems of specific sciences.	BD	UC	3	LO3 LO4



2	Foreign language (professional)	Extension and development of skills for practical usage proficiency language of specialty, for active application of a foreign language both in daily, and in professional communication: lexicon, grammar, possession of oral speech, written skills, audition, translation.	BD	UC	3	LO2 LO4
3	Pedagogics of the higher school	Formation of pedagogical competencies: teaching modern teaching methods and technologies and innovations in higher and postgraduate education organizations, developing professional ethics, skills to analyze and evaluate educational programs and teaching methods, conducting scientific research and writing scientific papers. Organization of the educational process based on a credit learning system. Education quality management system.	BD	UC	5	LO2 LO3
4	Psychology of management	The essence of administrative processes. Object of psychology management. Psychology of activity of the organization head and of his personality psychology. Functional and structural analysis of administrative activity. The psychological problems arising between the head and the staff of the organization. A clear idea of distribution on responsibility levels of the manager.	BD	UC	3	LO6 LO7



5	Teaching practice	Master's students are involved in conducting undergraduate classes in order to develop practical skills in teaching and learning methods.	BD	UC	6	LO2 LO3
<b>Optional Component</b>					<b>15</b>	
6	Personalized pharmacotherapy	Introduction to personalized pharmacotherapy. Individual factors affecting the pharmacological response. The human genome. Research in the field of pharmacogenetics and pharmacogenomics. OMICS technology. Pharmacogenetic aspects of therapy for diseases of various organs and systems. Theranostic. Pharmacogenetic test systems. Database of pharmacogenetic studies. Digital technology in personalized pharmacotherapy.	BD	OC	5	LO4 LO5
7	Research in clinical medicine	Formation of a systematic understanding of research activities in clinical medicine, development of skills in planning, conducting, analyzing and presenting clinical research results in accordance with modern scientific and ethical standards. The study of the main methods of clinical research, the formulation of scientific hypotheses and research objectives. The use of digital technologies and artificial intelligence. Studying the ethical and legal aspects of conducting research, developing critical assessment skills for scientific literature, and preparing scientific publications, grant applications, and reports	BD	OC	5	LO3 LO5 LO7



8	Current issues of outpatient surgery	The use of scientific information, a scientific approach and statistical research in clinical matters, diagnosis and differential diagnosis, and treatment of: purulent-inflammatory diseases of the skin and subcutaneous tissue, diseases of the ligaments and joints, diseases of the breast, diseases of the rectum, diseases of the genitourinary system, injuries of the extremities and skin, thermal injuries.	BD	OC	5	LO5 LO7
9	Methodology for the rational use of medicines	Proper use of medicines. Principles of rational pharmacotherapy (minimization, controllability, individualization, thrift, etc.). Indicators of rational use of drugs. tasks of rational use of drugs. Priority groups of drugs in medical organizations. WHO policy on rational drug use.	BD	OC	5	LO5
10	Clinicians communication skills	Communicative competence and effectiveness of communication. Barriers and effective approaches to building relationships. Conflicts, ways to resolve them. Ethical problems of dying, resuscitation and death. Post sad news. Professional adaptation, image and communicative tolerance. Yatrogenic, medical errors. Leadership and their value in professional and research activities. Psychological types of effective leaders.	BD	OC	5	LO6 LO7
11	Modern views on surgical infection	The use of scientific information, a scientific approach and statistical research in the following issues: the	BD	OC	5	LO1 LO3



		organization of surgical care, wounds and wound infections, infections of the skin and subcutaneous tissue, purulent surgery of the hand, purulent diseases of the lungs and mediastinum, peritonitis and sepsis.				
12	Interaction and interchangeability of drugs	Pharmaceutical, pharmacokinetic and pharmacodynamic drug interactions. The interaction of drugs with food, alcohol, etc. Combination of drugs. Methods of dealing with unwanted interactions. Computer programs and digital technologies for drug-drug interactions. Scale assessment of adverse reactions. Original and generic drugs. Pharmaceutical, pharmacokinetic and therapeutic equivalence. Bioequivalence research methods. Legal and economic aspects of prescribing reproduced drugs.	BD	OC	5	LO3 LO5
13	Topical issues of gerontology and geriatrics	Features of the aging of organs and systems, mental changes. Principles of organization of geriatric care in the Republic of Kazakhstan. Modern methods of diagnosis and medical care for diseases of internal organs and the achievements of scientific research in geriatrics. Fundamentals of geriatric pharmacotherapy and gerodietiki. Geriatric rehabilitation. Moral, ethical and legal culture in geriatrics. A commitment to professional values and work in a multidisciplinary team.	BD	OC	5	LO4 LO5
14	Modern methods of diagnostics and differential	The use of scientific information, scientific approach, artificial intelligence and statistical research in matters of modern diagnostic methods and differential diagnostics:	BD	OC	5	LO3 LO7

	diagnostics in abdominal surgery	surgical diseases of the stomach, large and small intestines, hepatobiliary zone, abdominal wall hernias, damage to abdominal organs.				
<b>Cycle of profile disciplines</b>					<b>49</b>	
<b>University component</b>					<b>12</b>	
15	Fundamentals of the teaching methodology in medicine	Tasks of medical education. Teaching method. Development of individual educational trajectory. Methods of assessment of knowledge, skills, attitudes, competencies and practical implementation. Features of teaching clinical disciplines. Principles of organization of postgraduate and continuous professional development of doctors. Features of adult education. Self-education.	PD	UC	3	LO2 LO3
16	Research methodology in medicine	Fundamentals of national law in the field of scientific research. Fundamentals of international law in the field of scientific research. Descriptive and analytical studies. Systematic review. Metaanalysis. Information collection. Data processing. General requirements and rules of registration of research work. Reviewing research papers, report on the work, preparation of abstracts. Preparation of scientific materials for publication.	PD	UC	3	LO6 LO7
17	Health Organization and Management	Control and functioning of health authorities. Separation of health functions at different levels of government. Problems of reforming health systems. Management Theory. Control systems. Management focused on specific tasks. Quality management system in health care.	PD	UC	3	LO5 LO7

		Strategic management of the health care system. Hospital as an organization. Models of the organization of medical institutions. New organizational models.				
18	Clinical Epidemiology and Evidence-Based Medicine	Processing and analysis of epidemiological research data. Epidemiological aspects of screening. Causal relationships in epidemiology. Epidemiological examination. Terminology, tools and methods of evidence-based medicine. Basic statistical knowledge needed to interpret evidence-based medicine data. Methods of qualitative and quantitative research in evidence-based medicine. Randomized controlled trials. "Gold standard". Levels of evidence.	PD	UC	3	LO3 LO4
19	Research practice	Familiarization with the latest theoretical, methodological and technological achievements of domestic and foreign science, modern methods of scientific research, processing and interpretation of experimental data and their application.	PD	UC	12	LO3 LO4
<b>Optional Component</b>					<b>25</b>	
20	Clinical and economic expertise in clinical practice	Concepts of clinical and economic expertise. Economic evaluation of the quality of medical care. Methodology of evidence - based medicine in evaluating the efficacy and safety of medical technologies. Managing the quality of medical care and the role of clinical and economic analysis. Methods of pharmacoeconomic analysis VEN-	PD	OC	5	LO4 LO5

		ABC analysis, analysis of the cost of the disease, cost minimization, cost-effectiveness. Assessment of the quality of life in clinical and economic expertise. Polypharmacy. Monitoring the effectiveness of pharmacotherapy.				
21	Actual problems of pulmonology	Organization of pulmonary service in the Republic of Kazakhstan. Modern achievements of science and practice in the diagnosis and treatment of respiratory diseases: bronchial asthma, infections of the upper respiratory tract, acute respiratory infections of the lower respiratory tract, COPD, pulmonary hypertension, PEH, respiratory failure. Modern methods of diagnosis and treatment of diseases of the respiratory system, based on the principles of evidence-based medicine.	PD	OC	5	LO3 LO7
22	Actual issues of vascular surgery	Scientific approach and statistical research in clinical matters, diagnostics, differential diagnosis and treatment: diseases of the thoracic and abdominal aorta, diseases of the peripheral arteries, diseases of the venous and lymphatic systems. Application of diagnostic and treatment protocols. The use of innovative technologies in instrumental and laboratory diagnostics, methods of surgical treatment using the principles of evidence-based medicine.	PD	OC	5	LO1 LO5
23	Good clinical practice (GCP)	Concepts and principles of good clinical practice. Legislative aspects of clinical research. Ethics	PD	OC	5	LO3 LO5

		Commission. Stages of clinical studies of drugs. The choice of study design, work with data and record keeping. Monitoring and auditing. The procedure for registration of new drugs.				
24	Treatment problems in thoracic surgery	The use of scientific information, scientific approach and statistical studies in questions of clinic, diagnostics and differential diagnosis, and treatment of injuries of the chest wall and thoracic cavity organs, diseases of bronchi and lungs, diseases of mediastinum, diseases of the pericardium and heart.	PD	OC	5	LO1 LO5
25	Actual problems of gastroenterology and hepatology	Theoretical foundations of endocrinology and hematology. Organization of endocrinological and hematological services in the Republic of Kazakhstan. Topical issues endocrinology sections of diabetology, thyroid disease, malnutrition, obesity and metabolic disorders; hematology - anemia, hemoblastosis, coagulopathy, hemophilia. Modern methods of diagnosis and treatment of diseases of the endocrine system and blood diseases, based on the principles of evidence-based medicine.	PD	OC	5	LO3 LO7
26	Therapeutic drug monitoring	The concept of therapeutic drug monitoring, its function and practical significance. The range of therapeutic action. Research methods. Features of individual pharmacological response. Therapeutic drug monitoring	PD	OC	5	LO3 LO6

		in prescribing drugs that affect the function of various systems and organs.				
27	Modern methods of research and treatment in cardiorheumatology	Theoretical foundations of cardiology and rheumatology. Organization of cardiological and rheumatological services in the Republic of Kazakhstan. Topical issues of cardiology and rheumatology in the sections of hypertension, arrhythmology, non-coronary and coronary, valvular pathology of the heart, heart failure, systemic diseases of the connective tissue and arthrology. Modern methods of diagnosis and treatment of diseases of cardiology and rheumatology, based on the principles of evidence-based medicine.	PD	OC	5	LO1 LO3
28	Topical issues of surgical endocrinology	The use of scientific information, scientific approach and statistical studies in questions of clinic, diagnostics and differential diagnosis, and treatment of: diabetes type 1 and type 2, complications of diabetes, diabetic foot syndrome, endocrine tumors of the pancreas, diseases of the parathyroid gland, obesity, metabolic syndrome, thyroid disease, diseases of the adrenal glands.	PD	OC	5	LO1 LO5
29	Monitoring and accounting of the use of medicines in medical organizations	Monitoring and accounting of drug use. Principles of medical records. Provision of medicines in medical organizations (outpatient, inpatient, inpatient, emergency, rehabilitative medical care. Medicines purchased under the Guaranteed amount of free medical care on a free and	PD	OC	5	LO4 LO5

		preferential basis. Inventory of medicines stored in medical organizations. Purpose and clearance of drugs .				
30	Topical issues of acute surgical diseases of the abdominal cavity	Use of scientific information, scientific approach and statistical research in clinical matters, diagnosis and differential diagnosis, and treatment of acute appendicitis, acute gastrointestinal bleeding, perforating ulcers of the stomach and duodenum, acute cholecystitis, acute pancreatitis, acute intestinal obstruction, strangulated hernia, obstructive jaundice, and disorders of the mesenteric circulation, injuries of the abdomen.	PD	OC	5	LO1 LO5
31	Actual problems of endocrinology and hematology	Theoretical foundations of endocrinology and hematology. Organization of endocrinological and hematological services in the Republic of Kazakhstan. Topical issues endocrinology sections of diabetology, thyroid disease, malnutrition, obesity and metabolic disorders; hematology - anemia, hemoblastosis, coagulopathy, hemophilia. Modern methods of diagnosis and treatment of diseases of the endocrine system and blood diseases, based on the principles of evidence-based medicine.	PD	OC	5	LO1 LO5
32	Chemotherapy and Toxicology	Chemotherapy of infectious, parasitic and oncological diseases. Evaluation of the safety and efficacy of chemotherapy drugs. Cancer chemotherapy protocols. Forms of manifestation of toxic process in humans. Principles of treatment of poisoning with substances of	PD	OC	5	LO4 LO5

		various toxic effects. Means and methods of chemical indication. Activities of the medical service in the foci of chemical lesions.				
33	Actual problems of nephrology	Organization of nephrology service in the Republic of Kazakhstan. Modern achievements of science and practice in the diagnosis and treatment of diseases of the kidneys and urinary tract: glomerular and tubulointerstitial diseases of the kidneys, renal failure. Modern methods of diagnosis and treatment of diseases of the urinary system, based on the principles of evidence-based medicine.	PD	OC	5	LO3 LO7
34	Improving diagnosis and treatment of abdominal sepsis	The use of scientific information, scientific approach and statistical research in the clinic, diagnosis and differential diagnosis, and treatment: sepsis, abdominal sepsis, systemic inflammatory response syndrome, multiple organ failure syndrome, septic shock, anaerobic infection, lung abscess, peritonitis, septicemia. Minimally invasive technologies in the treatment of abdominal sepsis.	PD	OC	5	LO1 LO5
<b>Research work</b>						
35	Master's research work, including internship and master's thesis	Planning of research in medicine. Literature review. Research in medicine. Data collection and analysis. Methods of scientific research in medicine. Evaluation of the study results			24	
					24	LO1 LO2 LO3 LO4 LO5 LO6 LO7
<b>Final examination</b>						
					12	



36	Design and defense of a master's thesis	Assessment of core competencies and learning outcomes achieved after completion of the Master's degree program.			12	LO1 LO2 LO3 LO4 LO5 LO6 LO7
<b>TOTAL</b>					120	