

MINISTRY OF SCIENCE AND HIGHER EDUCATION OF THE RUSSIAN FEDERATION
FEDERAL AUTONOMOUS EDUCATIONAL INSTITUTION OF HIGHER EDUCATION
National Research Nuclear University "MEPhI"
(NRNU MEPhI)

CERTIFIED BY

Vice-rector of MEPhI
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«_____» _____ 2020

COMPETENCE MODEL OF A GRADUATE

Лечебное дело / General Medicine
Academic program

31.05.01 Лечебное дело
Specialization

Specialist Degree program
degree of education

Institute of Engineering Physics for Biomedicine
institute/faculty/branch

It is registered in the register of educational programs under the number 977

Moscow 2020

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Section 1. GENERAL PRINCIPLES

1.1 Regulatory documents

- Federal Law No. 273-FZ of December 29, 2012 "On Education in the Russian Federation";
- Federal State Educational Standard for the field of training (specialty) 05/31/01 Medical Science and the level of higher education Specialty, approved by Order of the Ministry of Education and Science of the Russian Federation dated 08/12/2020 No. 988 (hereinafter referred to as the Federal State Educational Standard for Higher Education);
- The procedure for organizing and implementing educational activities in higher education educational programs - bachelor's degree programs, specialty programs, and Master's degree programs, approved by Order No. 245 of the Ministry of Education and Science of the Russian Federation dated 04/06/2021 (hereinafter referred to as the Procedure for Organizing Educational Activities);
- The procedure for conducting the state final certification of higher education educational programs – bachelor's degree programs, specialty programs and master's degree programs, approved by the Order of the Ministry of Education and Science of the Russian Federation dated June 29, 2015 No. 636;
- Regulations on practical training of students, approved by Order of the Ministry of Science and Higher Education of the Russian Federation and the Ministry of Education of the Russian Federation dated August 5, 2020 No. 885/390

1.2. List of abbreviations

c.un.	– credit unit;
GPC	– general professional competence;
ES of the NRNU	– The educational standard of the National Research Nuclear University
MEPhI	MEPhI;
GLF	– generalized labor function;
LF	– labor function;
PA	– professional activity;
PC	– professional competence;
PS	– professional standard;
UC	– universal competence;
UNSC	– universal natural science competence;
UDC	– universal digital competence;
FSES of HE	– Federal State Educational Standard of Higher Education;

Section 2. GENERAL CHARACTERISTICS OF THE EDUCATIONAL PROGRAM

2.1. Name of the educational program

Лечебное дело / General Medicine. The profile of the specialist program corresponds to the specialty as a whole.

2.2. The aim of the program:

In the field of training:

- to provide the students with the universal, professional and specialized competences in accordance with the requirements of Federal state higher education standard in the field of study 31.05.01 General medicine ensuring the competitiveness and the demand for graduates of the NRNU MEPhI Institute of Engineering Physics for Biomedicine, on the domestic and foreign labour market.
- Training of a graduate who is able to perform the professional tasks according to the professional standard «Medical doctor (local general practitioner) and to get further education in clinical residency, study for Master's degree, Ph.D, etc.

In the field of personality development:

- development of graduates' personal qualities based on socio-cultural, spiritual and moral values and the rules and norms of behavior accepted in Russian society in the interests of the individual, family, society and the state: Purposefulness, organization, hard work, communication skills, ability to work in a team, responsibility for the final results of their professional activities.

The professional activity of a graduate who has mastered the specialist program is medical practice in the field of medical care with the aim of maintaining and strengthening the health of the adult population.

Features of the curriculum. The implementation of this educational program is carried out jointly with the Obninsk Institute of Atomic Energy, a branch of the National Research Nuclear University MEPhI.

Language of study: Russian/English.

The educational program "General Medicine" is based on a competency-oriented principle. The consideration of the level of the acquired knowledge and the evaluation of it allows to transfer it in the European education system. Individualization of training is achieved through the possibility to study electives along with the basic disciplines and through the scientific research.

The practical orientation of the educational program is ensured by disciplines and practices, the objectives of which are to teach practical skills in providing medical care, emergency care skills, carrying out therapeutic and diagnostic procedures.

Practical skills training is conducted using new learning technologies: interactive, with the use of electronic phantoms, moulages, mannequins, virtual professional environments, as well as in real-life conditions in hospitals.

The competitive advantage of the educational program is based on the use of material, technical and research resources of NRNU MEPhI, which provide an in-depth training in the field of nuclear medicine, information technology and artificial intelligence. The curriculum includes such compulsory disciplines as "Artificial intelligence in medicine", "Radiobiology", "Radiopharmaceuticals", "Medical radiology and Radiotherapy".

2.3. Qualification Awarded to Graduates of the Educational Program

Qualification awarded to graduates of the educational program: medical doctor

2.4. Program Volume

Program volume: 360 credit units (hereinafter referred to as c.u.).

2.5. Forms of Study

Forms of study: full-time.

2.6. Duration of Education

6 years for full-time study

2.7. Fields of Professional Activity and Spheres of Professional Activity in which Graduates who have Mastered the Program can Engage in Professional Activities

02 Healthcare

2.8. List of Enterprises for Internship and Employment of Graduates

Federal State Budgetary Institution "National Medical Research Center of Radiology" of the Ministry of Health of the Russian Federation

State Budgetary Healthcare Institution of the City of Moscow "City Polyclinic No. 64 of the Moscow City Health Department"

Others

Section 3. CHARACTERISTICS OF GRADUATES' PROFESSIONAL ACTIVITIES

3.1. General Description of the Professional Activities of Graduates

Types of tasks of professional activity of graduates (training profiles): Health activities, Research activities, Organizational and managerial activities

The tasks of professional activities of graduates:

- analysis of scientific literature and official statistical reviews, participation in statistical analysis and public presentation of the results obtained;
- diagnostics of diseases and pathological conditions of the patients;
- Educating patients about basic health-promoting hygiene measures that help prevent disease and strengthen health
- Providing medical care in emergency situations, epidemics, and in areas of mass destruction.
- providing medical care to the patient in urgent and emergency forms
- Providing primary medical care in outpatient settings and day hospital settings
- organization of medical expertise;
- organization of general nursing in medical organizations;
- Preparation and application of documentation within the healthcare system, maintenance of medical records in healthcare organizations.

- Prevention of disease occurrence among the population through the implementation of preventive and anti-epidemic measures.
- application of the basic principles of organizing medical care in medical organizations and their structural subdivisions;
- Conducting preventive medical examinations, health check-ups, and clinical follow-up.
- collection of medical data, medical and statistical analysis of information on the population health indicators for various age and sex groups
- Conducting temporary disability assessments and participating in other types of medical evaluations.
- compliance with basic information security requirements when solving standard professional tasks;
- participation in the organization of medical care quality assessment;
- Participation in conducting medical rehabilitation and sanatorium treatment.
- solution of certain scientific research problems and scientific and applied tasks in the field of healthcare related to diagnosis, treatment, medical rehabilitation, and prevention.
- Fostering motivation among the population, patients, and their family members aimed at preserving and strengthening their own health and the health of others.

The objects of professional activity of the graduates who have mastered the specialty program, are Individuals (patients); the population; the set of means and technologies aimed at creating conditions for preserving and strengthening the health of the adult population

3.2. List of Professional Standards Corresponding to the Professional Activities of Graduates Who Have Mastered the Educational Program

No.	Professional Standard Code	Name of Professional Standard
02 Healthcare		
1	02.009	Professional Standard «Medical doctor (local general practitioner)", approved by Order No. 293n of the Ministry of Labor and Social Protection of the Russian Federation dated March 21, 2017
2	02.019	Professional Standard "Medical Biophysicist", approved by Order No. 611n of the Ministry of Labor and Social Protection of the Russian Federation dated August 4, 2017
3	02.022	Professional Standard "Specialist in Healthcare Organization and Public Health", approved by Order No. 768n of the Ministry of Labor and Social Protection of the Russian Federation dated November 7, 2017

3.3. List of Main Professional Tasks for Graduates

Table 3.1

Field of Professional Activity (according to the Ministry of Labor Register)	Type of Professional Task (Profile)	Professional Task	The objects of professional activity
02 Healthcare	research	- analysis of scientific literature and official statistical reviews, participation in statistical analysis and public presentation of the results obtained;	Individuals (patients); the population; the set of means and technologies aimed at creating conditions for preserving and strengthening the health of the adult population
02 Healthcare	research	- solution of certain scientific research problems and scientific and applied tasks in the field of healthcare related to diagnosis, treatment, medical rehabilitation, and prevention.	Individuals (patients); the population; the set of means and technologies aimed at creating conditions for preserving and strengthening the health of the adult population
02 Healthcare	medical	Prevention of disease occurrence among the population through the implementation of preventive and anti-epidemic measures.	Individuals (patients); the population; the set of means and technologies aimed at creating conditions for preserving and strengthening the health of the adult population
02 Healthcare	medical	Conducting preventive medical examinations, health check-ups, and clinical follow-up.	Individuals (patients); the population; the set of means and technologies aimed at creating conditions for preserving and strengthening the health of the adult population
02 Healthcare	organizational and managerial	- collection of medical data, medical and statistical analysis of information on the population health indicators for various age and sex groups	Individuals (patients); the population; the set of means and technologies aimed at creating conditions for preserving and strengthening the health of the adult population

02 Healthcare	medical	- diagnostics of diseases and pathological conditions of the patients;	Individuals (patients); the population; the set of means and technologies aimed at creating conditions for preserving and strengthening the health of the adult population
02 Healthcare	medical	Providing medical care to patients in urgent and emergency forms.	Individuals (patients); the population; the set of means and technologies aimed at creating conditions for preserving and strengthening the health of the adult population
02 Healthcare	medical	Conducting temporary disability assessments and participating in other types of medical evaluations.	Individuals (patients); the population; the set of means and technologies aimed at creating conditions for preserving and strengthening the health of the adult population
02 Healthcare	medical	Providing primary medical care in outpatient settings and and day hospital settings	Individuals (patients); the population; the set of means and technologies aimed at creating conditions for preserving and strengthening the health of the adult population
02 Healthcare	medical	Providing medical care in emergency situations, epidemics, and in areas of mass destruction.	Individuals (patients); the population; the set of means and technologies aimed at creating conditions for preserving and strengthening the health of the adult population
02 Healthcare	medical	Participation in conducting medical rehabilitation and sanatorium treatment.	Individuals (patients); the population; the set of means and technologies aimed at creating conditions for preserving and strengthening the health of the adult population
02 Healthcare	medical	Fostering motivation among the population, patients, and their family members aimed at preserving and strengthening their own health and	Individuals (patients); the population; the set of means and technologies aimed at creating conditions for preserving and strengthening the health of the adult population

		the health of others.	
02 Healthcare	medical	Educating patients about basic health-promoting hygiene measures that help prevent disease and strengthen health.	Individuals (patients); the population; the set of means and technologies aimed at creating conditions for preserving and strengthening the health of the adult population
02 Healthcare	medical	organization of general nursing in medical organizations;	Individuals (patients); the population; the set of means and technologies aimed at creating conditions for preserving and strengthening the health of the adult population
02 Healthcare	organizational and managerial	- application of the basic principles of organizing medical care in medical organizations and their structural subdivisions;	Individuals (patients); the population; the set of means and technologies aimed at creating conditions for preserving and strengthening the health of the adult population
02 Healthcare	organizational and managerial	Preparation and application of documentation within the healthcare system, maintenance of medical records in healthcare organizations.	Individuals (patients); the population; the set of means and technologies aimed at creating conditions for preserving and strengthening the health of the adult population
02 Healthcare	organizational and managerial	Organization of medical expertise;	Individuals (patients); the population; the set of means and technologies aimed at creating conditions for preserving and strengthening the health of the adult population
02 Healthcare	organizational and managerial	participation in the organization of medical care quality assessment;	Individuals (patients); the population; the set of means and technologies aimed at creating conditions for preserving and strengthening the health of the adult population
02 Healthcare	organizational and	- compliance with basic information	Individuals (patients); the population; the set

	managerial	security requirements when solving standard professional tasks;	of means and technologies aimed at creating conditions for preserving and strengthening the health of the adult population
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Section 4. INTENDED LEARNING OUTCOMES OF THE EDUCATIONAL PROGRAM

4.1. Requirements for the intended learning outcomes of the educational program, ensured by the disciplines (modules) and practices of the mandatory part

4.1.1. Universal Competencies of Graduates and Indicators of Their Achievement

Table 4.1

Code and name of universal competence	Code and name of the universal competence achievement indicator
UC-1 Capable of critically analyzing problem situations based on a systems approach, and developing an action strategy	<p>K-UC-1 Know: Principles, methods, and procedures of the systems approach to situation analysis; Structure, forms, and methods of scientific cognition.</p> <p>S-UC-1 Be able to: Apply the systems approach and critical analysis to problem situations; Develop action strategies and make specific decisions for their implementation; Substantiate conclusions and decisions made, including using philosophical conceptual frameworks.</p> <p>P-UC-1 Possess skills in: Identifying problem situations and searching for necessary information to solve professional tasks; Developing action strategies.</p>
UC-2 Capable of managing a project at all stages of its life cycle	<p>K-UC-2 Know: project life cycle stages; project development and implementation stages; project development and management methods</p> <p>S-UC-2 Be able to: develop projects considering analysis of alternative implementation options, define target stages and main work directions; explain goals and formulate tasks related to project preparation and implementation; manage projects at all stages of their life cycle</p> <p>P-UC-2 Possess: project development and management methodologies; methods for assessing resource requirements and effectiveness</p>
UC-3 Capable of organizing and leading team work, developing team strategy to	<p>K-UC-3 Know: Main team leadership styles;</p>

achieve set goals	<p>Main types of managerial activities; Characteristics of interpersonal relationships within teams.</p> <p>S-UC-3 Be able to: Develop team strategy to achieve set goals; Organize teams to achieve established objectives; Lead teams effectively.</p> <p>P-UC-3 Possess skills in: Formulating and allocating tasks within teams to achieve set goals; Motivating staff for quality task performance; Resolving disagreements that arise within teams.</p>
UC-4 Capable of using modern communication technologies, including in foreign language(s), for academic and professional interaction	<p>K-UC-4 Know: Main types and means of modern communications; Business and professional vocabulary of a foreign language sufficient for communication, reading, and translating general and specialized foreign language texts.</p> <p>S-UC-4 Be able to: Use verbal and non-verbal communication means and select the most effective ones for academic and professional interaction; Express thoughts freely and adequately in conversation and understand the interlocutor's speech, including in foreign language(s).</p> <p>P-UC-4 Possess skills in: Using information and communication technologies that enable remote interaction; Academic and professional communication, including in foreign language(s).</p>
UC-5 Capable of analyzing and considering cultural diversity in intercultural interaction	<p>K-UC-5 Know: patterns and characteristics of socio-historical development of different cultures; features of intercultural diversity in society; rules and technologies of effective intercultural interaction</p> <p>S-UC-5 Be able to: understand and tolerate intercultural diversity in society; analyze and consider cultural diversity in intercultural interaction</p> <p>P-UC-5 Possess: methods and skills of effective intercultural interaction</p>
UC-6 Capable of determining and	K-UC-6 Know:

<p>implementing priorities for one's own activities and methods for its improvement based on self-assessment and lifelong learning</p>	<p>Methods for setting priorities and time management Main tasks and methods of psychology, the concept of critical self-assessment</p> <p>S-UC-6 Be able to: Systematize tasks, establish work priorities according to their significance for professional activities Apply critical thinking for self-assessment and identifying self-development objectives Select paths and methods for improving one's own professional practice based on self-assessment</p> <p>P-UC-6 Possess skills in: Planning and implementing an individual professional educational trajectory using continuous education principles</p>
<p>UC-7 Capable of maintaining an adequate level of physical fitness to ensure full social and professional functioning</p>	<p>K-UC-7 Know: Scientific and practical foundations of physical culture, prevention of harmful habits and healthy lifestyle Principles and methods of individual exercises with various specific purposes Methods for monitoring and assessing physical fitness</p> <p>S-UC-7 Be able to: Apply diverse means of physical culture and sports in practice for maintaining and strengthening health and psychophysical preparation Utilize physical education means and methods for professional-personal development, physical self-improvement, and formation of a healthy lifestyle</p> <p>P-UC-7 Possess skills in: Performing individually tailored sets of health-improving and adaptive (therapeutic) physical exercises to ensure full social and professional functioning</p>
<p>UC-8 Capable of creating and maintaining safe living conditions in everyday life and professional activities to preserve the natural environment and ensure sustainable development of society, including in the event of the threat or occurrence of emergency situations and military conflicts.</p>	<p>K-UC-8 Know:</p> <ul style="list-style-type: none"> - the main natural and man-made hazards, their properties and characteristics, the nature of the impact of harmful and hazardous factors on humans and the environment, methods of protection against them in relation to the sphere of their professional activity; - rules of conduct in the event of emergency situations of natural and man-made origin; - fundamentals of legislation in the field of sanitary and epidemiological well-being of the population, protection from emergency situations, and occupational safety; - methods of protection from dangers in the event of emergency situations during military operations or as a result of these actions.

	<p>S-UC-8 Be able to:</p> <ul style="list-style-type: none"> - identify hazardous and harmful environmental factors within the context of ongoing activities, in emergency situations, and in military conflicts; - select methods of protection against hazards applicable to the scope of their professional activities and ways to ensure comfortable living conditions - assess the sanitary and epidemiological situation in order to create and maintain safe living conditions <p>P-UC-8 Possess the following skills: - use of personal and collective protective equipment; - provision of first aid to victims; - rationalization of professional activities in order to ensure safety and environmental protection.</p>
<p>UC-9. Able to use basic defectological knowledge in social and professional spheres</p>	<p>K-UC-9 Know:</p> <p>Psychophysical development characteristics of persons with mental and/or physical disabilities, patterns of their education and upbringing</p> <p>Specifics of applying basic special education knowledge in social and professional contexts</p> <p>S-UC-9 Be able to:</p> <p>Apply basic special education knowledge in social and professional spheres</p> <p>Plan and implement professional activities utilizing basic special education knowledge</p> <p>P-UC-9 Possess skills in:</p> <p>Skills for interacting with persons with disabilities in social and professional environments</p>
<p>UC-10 Capable of making informed economic decisions in various areas of life</p>	<p>K-UC-10 Know:</p> <p>Basic principles of economic functioning and economic development, goals and forms of state participation in the economy</p> <p>Main financial instruments for personal budget management</p> <p>S-UC-10 Be able to:</p> <p>Apply methods of personal economic and financial planning to achieve current and long-term financial goals</p> <p>Control personal economic and financial risks</p> <p>P-UC-10 Possess skills in:</p> <p>Planning and implementing activities considering economically justified costs aimed at achieving goals</p> <p>Using financial instruments for personal finance (personal budget) management</p>

<p>UC-11 Capable of fostering zero tolerance towards manifestations of extremism, terrorism, corrupt practices and countering them in professional activities</p>	<p>K-UC-11 Know: Current legal norms ensuring opposition to extremism, terrorism, and corrupt behavior Indicators of extremism, terrorism, and corrupt behavior Fundamentals of preventing extremism, terrorism, and corrupt behavior</p> <p>S-UC-11 Be able to: Plan, organize, and conduct measures to form a civic position based on zero tolerance towards extremism, terrorism, and corrupt behavior Apply measures to counter extremism, terrorism, and corrupt behavior in professional activities</p> <p>P-UC-11 Possess: Skills in developing zero tolerance towards extremism, terrorism, and corrupt behavior Skills in countering extremism, terrorism, and corrupt behavior in professional activities</p>
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4.1.2. General Professional Competencies of Graduates and Indicators of Their Achievement

Table 4.2

Code and Name of General Professional Competency	Code and name of the indicator of achievement of general professional competence
<p>GPC-1 Capable of implementing moral and legal norms, ethical and deontological principles in professional activities.</p>	<p>K-GPC-1 Know: Main regulatory legal acts governing physician's activities; Concepts of medical confidentiality, informed voluntary consent for medical intervention, clinical guidelines, procedures and standards of medical care; Fundamental rights and obligations of physicians and patients; Principles of medical ethics (morality) and deontology.</p> <p>S-GPC-1 Be able to: Find and apply current regulatory legal acts in professional activities; Protect the rights of physicians and patients.</p> <p>P-GPC-1 Possess skills in: - interaction with colleagues and patients in compliance with ethics and deontology. Obtaining informed voluntary consent from patients or their legal representatives for medical interventions.</p>
<p>GPC-2 Capable of conducting and</p>	<p>K-GPC-2 Know:</p>

<p>monitoring the effectiveness of measures for prevention, healthy lifestyle promotion, and sanitary-hygienic education of the population</p>	<p>Regulatory foundations for conducting preventive medical examinations and health check-ups; Rules for implementing sanitary and anti-epidemic measures; Forms and methods of health education work; Sanitary rules and regulations; National immunization schedule; Main hazardous and harmful occupational factors.</p> <p>S-GPC-2 Be able to: Determine medical indications for imposing restrictive measures (quarantine) and conduct anti-epidemic measures in case of an infection outbreak; Conduct preventive medical examinations and health check-ups in accordance with current regulatory legal acts and other documents; Monitor the effectiveness of measures for disease prevention, health promotion, and sanitary-hygienic education of the population; Develop and implement health promotion programs aimed at eliminating harmful effects of environmental factors on human health; Establish cause-effect relationships between changes in health status and exposure to environmental factors.</p> <p>P-GPC-2 Possess skills in: Organizing and conducting preventive medical examinations and health check-ups for the adult population to prevent the occurrence and/or spread of diseases and identify risk factors; - preparation (formation) and sending to the territorial office of the Federal Service for Surveillance on Consumer Rights Protection and Human Wellbeing an emergency notification upon detection of an infectious or occupational disease; Educating patients and their relatives on methods of self-monitoring key physiological indicators.</p>
<p>GPC-3 Capable of countering the use of doping in sports and preventing it.</p>	<p>K-GPC-3 Know: The content of the concepts "doping" and "anti-doping rule violation" The consequences of doping use and anti-doping rule violations</p> <p>S-GPC-3 Be able to: Explain the consequences of ignoring and violating anti-doping rules in sports</p> <p>P-GPC-3 Possess skills in: Countering the use of doping</p>

<p>GPC-4 Capable of using medical devices stipulated by the medical care procedures, as well as conducting patient examination for diagnosis establishment.</p>	<p>K-GPC-4 Know: Modern diagnostic instrumental examination methods for patients, including functional, radiological, ultrasound, radionuclide diagnostics, and endoscopy Diagnostic capabilities of instrumental examination methods Medical devices stipulated by the procedure for providing medical care to the adult population in the "Therapy" specialty, and the equipment standard for a therapeutic room Main medical devices stipulated by the procedures for providing medical care to the adult population in major surgical specialties, obstetrics, and gynecology Indications for referring patients for instrumental examinations and functional diagnostics Techniques for physical examination of patients using medical devices stipulated by procedures and considering medical care standards</p> <p>S-GPC-4 Be able to: Use medical devices stipulated by the medical care procedure Determine the required volume and content of instrumental and functional diagnostics to establish a diagnosis Interpret results of the most common functional and instrumental diagnostic methods</p> <p>P-GPC-4 Possess skills in: Using basic medical devices (stethoscope, blood pressure monitor, sphygmomanometer, pulse oximeter, height-weight scale, measuring tape, neurological hammer, scalpel, forceps, and other devices) Operating electrocardiographs and devices for measuring external respiratory function Interpreting results of the most common functional and instrumental diagnostic methods</p>
<p>GPC-5 Capable of assessing morphofunctional and physiological states, as well as pathological processes in the human body to solve professional tasks.</p>	<p>K-GPC-5 Know: Basic medical, pharmaceutical, and morphofunctional terminology, including Latin terms; Structure and functions of the human body, age-related, gender-specific, and individual characteristics of the structure and development of a healthy organism; Physical and chemical nature of processes occurring in a living organism; Patterns of vital activity of the organism, mechanisms of self-regulation and regulation; Features of regulation of the functioning of human body systems in pathological conditions; Patterns of occurrence, development, and outcome of typical pathological processes, the concept of sanogenesis; Etiology and pathogenesis of the most common diseases; The concept of nosology, principles of disease classification;</p>

	<p>Principles of microorganism classification, their morphology, physiology, and impact on human health; Structure and functions of the human immune system.</p> <p>S-GPC-5 Be able to: Analyze mechanisms of disease development and manifestation; Recognize morphological and functional changes in cells, tissues, organs, and systems of the human body; Use basic physical-chemical and other natural science concepts and methods in solving professional tasks; Determine the cause of death and formulate a pathological diagnosis.</p> <p>P-GPC-5 Possess skills in: Conducting microscopy and analyzing microscopic specimens; Correlating morphological and clinical manifestations of diseases; Assessing morphofunctional, physiological states, and pathological processes in humans; Clinical-anatomical analysis of autopsy results.</p>
<p>GPC-6 Capable of organizing general nursing, providing primary medical care, ensuring the organization of work and making professional decisions in emergencies at the pre-hospital stage, in emergency situations, epidemics and in areas of mass destruction</p>	<p>K-GPC-6 Know: A set of measures for general nursing with diseases of various organs and systems; Signs of clinical and biological death; Indications for patient hospitalization for the most common diseases with typical progression.</p> <p>S-GPC-6 Be able to: Organize care for patient when providing medical care in an outpatient setting; Determine the need for patient hospitalization; Ensure the organization of work in emergency situations, epidemics, and in mass casualty zones.</p> <p>P-GPC-6 Possess skills in: General care of a patient (general nursing); Providing first aid; Making medical decisions in emergencies at the prehospital stage, including in emergency situations, epidemics, and in mass casualty zones.</p>
<p>GPC-7 Capable of prescribing treatment and monitoring its effectiveness and safety.</p>	<p>K-GPC-7 Know: Pharmacological groups of medicinal drugs and their intended purposes; Mechanisms of action of pharmacological and non-pharmacological treatments, indications and contraindications for their use, side effects, and complications caused by their application; Methods for monitoring the effectiveness and safety of various treatment approaches.</p>

	<p>S-GPC-7 Be able to: Make rational choices for pharmacological and non-pharmacological treatments based on clinical guidelines and in accordance with medical care standards; Develop a treatment plan for a disease or condition considering the diagnosis, age, disease course characteristics, and comorbidities, based on clinical guidelines and medical care standards; Prescribe medications, medical devices, and therapeutic nutrition considering the diagnosis, age, disease course characteristics, and comorbidities, based on clinical guidelines and medical care standards; Justify prescribed pharmacological and non-pharmacological treatments; Evaluate the effectiveness and safety of medications, medical devices, therapeutic nutrition, and other treatment methods.</p> <p>P-GPC-7 Possess skills in: Administering medications through various routes of administration; Developing treatment plans for diseases or conditions considering diagnosis, age, disease course characteristics, and comorbidities; Assessing the effectiveness and safety of prescribed treatments.</p>
<p>GPC-8 Capable of implementing and monitoring the effectiveness of medical rehabilitation of patients, including during the implementation of individual rehabilitation and habilitation programs for persons with disabilities, and to assess patients' capacity for work.</p>	<p>K-GPC-8 Know: Signs of temporary disability and persistent disorders of body functions leading to limitations in life activities; Procedures for conducting temporary disability examinations; Procedures for referring patients for medical and social expertise; The concept of "Individual Rehabilitation and Habilitation Program for Persons with Disabilities"; Medical indications and contraindications for prescribing spa treatment; Medical indications and contraindications for conducting medical rehabilitation measures, considering the diagnosis, clinical guidelines, procedures, and standards of medical care.</p> <p>S-GPC-8 Be able to: Determine the need for applying natural therapeutic factors, pharmacological and non-pharmacological therapies, and other methods for patients requiring medical rehabilitation and spa treatment; Monitor the effectiveness of medical rehabilitation for patients, including during the implementation of individual rehabilitation and habilitation programs for persons with disabilities; Assess patients' capacity for work; Perform medical rehabilitation measures for patients in accordance with current medical care procedures,</p>

	<p>clinical guidelines, and medical care standards.</p> <p>P-GPC-8 Possess skills in: Identifying signs of temporary disability and persistent disorders of body functions leading to limitations in life activities; Referring patients in need of medical rehabilitation to specialist physicians for the implementation of individual rehabilitation program measures, including spa treatment; Completing sick note, referrals for medical and social expertise, and sanatorium treatment cards.</p>
<p>GPC-9 Capable of implementing quality management principles in professional activities.</p>	<p>K-GPC-9 Know: Principles of quality management; The concept of quality of medical care; Procedure for providing medical care to the adult population in the "Therapy" specialty; Procedure for prescribing medications.</p> <p>S-GPC-9 Be able to: Analyze the results of one's own professional activities to prevent errors; Apply medical care standards and clinical guidelines (treatment protocols) in practical work; Evaluate the correctness of chosen methods of prevention, diagnosis, treatment, and rehabilitation when providing medical care to a specific patient; Assess the degree of achievement of the planned treatment outcome.</p> <p>P-GPC-9 Possess skills in: Making medical decisions based on evidence-based medicine (selection of diagnostic, treatment, prevention, and rehabilitation methods), including using electronic knowledge bases; Applying the procedure for prescribing medications; Participating in the assessment of the quality of medical care provided.</p>
<p>GPC-10 Capable of understanding the principles of modern information technologies and using them to solve professional tasks.</p>	<p>K-GPC-10 Know: Rules for working with the information systems and telecommunications network "Internet" Main medical information systems.</p> <p>S-GPC-10 Be able to: Use information systems and the "Internet" information and telecommunications network in professional activities while complying with information security rules.</p>

	<p>P-GPC-10 Possess skills in: Practical application of information and communication technologies, telemedicine technologies, and medical information systems, considering basic information security requirements, as well as skills in using intelligent computer medical systems.</p>
<p>GPC-11 Capable of preparing and applying scientific, research-production, project-related, organizational-managerial, and regulatory documentation within the healthcare system.</p>	<p>K-GPC-11 Know: The purpose of various types of documentation in medicine and healthcare;</p> <p>S-GPC-11 Be able to: Search for and select scientific, project-related, organizational-managerial, and regulatory documentation in accordance with assigned tasks in professional activities; Analyze and apply scientific, project-related, organizational-managerial, and regulatory documentation to solve professional tasks;</p> <p>P-GPC-11 Possess skills in: Preparing work plans and activity reports according to specified formats; Drafting organizational-administrative documents and preparing proposals for amendments to regulatory legal documents in the field of healthcare and medical sciences, as well as local regulatory acts of healthcare organizations</p>

4.1.3. Mandatory Professional Competencies of Graduates and Indicators of Their Achievement

Not provided

4.1.4. Professional Competencies of Graduates (Specialization/Profile/Focus Area) and Indicators of Their Achievement

Table 4.4

Professional Task	Object or Area of Knowledge	Code and Name of Professional Competency	Code and Name of the Professional Competency Achievement Indicator	Basis (Professional Standard, experience analysis)	Code and Name of OTF (TF)
1	2	3	4	5	6
Type of professional task: medical					
Diagnosics of diseases and pathological conditions of the patients;	Individuals (patients); the population; the set of means and technologies aimed at creating conditions for preserving and strengthening the health of the adult population	PC-3.2 Capable of conducting patient examinations to establish a diagnosis	K-PC-3.2 Know: Clinical diagnosis establishment algorithm; Patient history-taking and physical examination methodology; Laboratory and instrumental research methods for health assessment to establish a diagnosis; Semiotics of diseases of different organs and systems; Structure, principles of the	Professional Standard "02.009. «Medical doctor (local general practitioner)	A/02.7. Conducting patient examination to establish a diagnosis

			<p>current International Statistical Classification of Diseases and Related Health Problems (hereinafter - ICD).</p> <p>S-PC-3.2 Be able to: Conduct patient history-taking and physical examination; Interpret history, physical examination data, laboratory and instrumental results to recognize a condition or establish the presence/absence of a disease, establish a diagnosis; Distinguish and recognize in each specific case tissue damage, the reaction to it, and the form of adaptability; Develop a patient examination plan, justify the necessity and scope of laboratory and instrumental examination; Identify main pathological conditions, symptoms and syndromes, nosological forms in the patient according to the current</p>	
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			<p>ICD.</p> <p>P-PC-3.2 Possess skills in: Patient history-taking and physical examination; Formulating a preliminary diagnosis; Developing a patient examination plan; Interpreting laboratory and instrumental results; Establishing a diagnosis considering the current ICD</p>		
<p>Providing medical care to patients in urgent and emergency forms.</p>	<p>Individuals (patients); the population; the set of means and technologies aimed at creating conditions for preserving and strengthening the health of the adult population</p>	<p>PC-3.1 Able to provide medical care to patients in urgent or emergency forms</p>	<p>K-PC-3.1 Know:</p> <ul style="list-style-type: none"> - Clinical signs of sudden cessation of breathing, circulation, loss of consciousness, life-threatening mental disorders for the patient or others; - Indications for external defibrillation; - Principles of external electro-impulse therapy (defibrillation) devices and rules for performing external defibrillation; - Rules for performing basic cardiopulmonary resuscitation. <p>S-PC-3.1 Be able to:</p> <ul style="list-style-type: none"> - Recognize conditions 	<p>Professional Standard "02.009. «Medical doctor (local general practitioner)</p>	<p>A/01.7. Providing medical care to patients in urgent or emergency forms</p>

			<p>(sudden acute illnesses, exacerbations of chronic diseases) requiring medical care in urgent or emergency forms;</p> <ul style="list-style-type: none"> - Identify clinical signs of sudden cessation of breathing, circulation, loss of consciousness, life-threatening mental disorders for the patient or others; - Organize and perform basic cardiopulmonary resuscitation and external defibrillation measures. <p>P-PC-3.1 Possess skills in:</p> <ul style="list-style-type: none"> - Assessing the patient's condition requiring medical care in urgent and emergency forms; - Performing basic cardiopulmonary resuscitation; - Using medications and medical devices for providing medical care in emergency or urgent forms. 		
Providing primary medical care in outpatient settings and day hospital settings	Individuals (patients); the population; the set of means and technologies aimed at creating conditions for	PC-3.3 Able to provide primary medical care in an outpatient setting	<p>K-PC-3.3 Know:</p> <ul style="list-style-type: none"> - General issues of organizing medical care for the population and organizing medical care 	Professional Standard "02.009. «Medical doctor (local general practitioner)	A.7 Provision of primary health care to the adult population in outpatient settings

	<p>preserving and strengthening the health of the adult population</p>		<p>for the adult population in outpatient settings, including at home;</p> <ul style="list-style-type: none"> - Features of medical care using telemedicine technologies; - Clinical picture, differential diagnosis, features of the course of the disease, complications and outcomes of internal diseases; - Diagnostic criteria for the most common diseases of internal organs and systems; - Indications for referring patients for specialist consultations according to clinical guidelines and considering relevant medical care standards; - Indications for referring patients for specialized medical care in inpatient settings and day hospitals according to clinical guidelines and considering relevant medical care standards; - Features of managing and treating elderly patients in outpatient settings. 		<p>that do not provide round-the-clock medical supervision and treatment, including at home when a health worker is called</p>
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			<p>S-PC-3.3 Be able to:</p> <ul style="list-style-type: none"> - Perform differential diagnosis of internal diseases; - Monitor the course of physiological pregnancy; - Justify the need for referring patients to specialist consultations; - Recognize the main and concomitant diseases; - Assess disease or condition severity - the degree of organ and/or system damage or functional impairment due to the disease/condition or its complications; - Determine management, examination and treatment tactics for patients with specific diseases (nosological units) depending on disease severity and condition, according to clinical guidelines and considering relevant medical care standards. <p>P-PC-3.3 Possess skills in:</p> <ul style="list-style-type: none"> - Conducting differential diagnosis with other diseases/conditions, including emergencies; 	
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			<ul style="list-style-type: none"> - Interpreting data obtained from patient consultations with specialists; - Prescribing additional tests to clarify the diagnosis; - Formulating a clinical diagnosis; - Prescribing treatment according to clinical guidelines and considering relevant medical care standards. 		
Professional Activity Type: Research					
- analysis of scientific literature and official statistical reviews, participation in statistical analysis and public presentation of the results obtained;	Individuals (patients); the population; the set of means and technologies aimed at creating conditions for preserving and strengthening the health of the adult population	PC-3.6 Able to analyze and publicly present medical research information	<p>K-PC-3.6 Know:</p> <ul style="list-style-type: none"> - Essence of research activities in medicine and healthcare, stages of medical research, design options; - Types of scientific information sources, requirements for scientific text formatting and numerical data presentation; - Main methods of statistical analysis. <p>S-PC-3.6 Be able to:</p> <ul style="list-style-type: none"> - Plan medical research and create databases for subsequent statistical processing; 	Professional Standard "02.009. «Medical doctor (local general practitioner)	B.7. Conducting research in medicine and biology

			<ul style="list-style-type: none"> - Search, select and analyze scientific information according to research objectives. <p>P-PC-3.6 Possess skills in:</p> <ul style="list-style-type: none"> - Preparing informational and analytical materials, including for public presentation of research results (presentation, report, abstract, article); - Analyzing research results, their generalization and critical evaluation. 		
<ul style="list-style-type: none"> - solution of certain scientific research problems and scientific and applied tasks in the field of healthcare related to diagnosis, treatment, medical rehabilitation, and prevention. 	Individuals (patients); the population; the set of means and technologies aimed at creating conditions for preserving and strengthening the health of the adult population	PC-3.7 Able to participate in implementing research results into practical healthcare activities regarding diagnosis, treatment, medical rehabilitation and prevention	<p>K-PC-3.7 Know:</p> <ul style="list-style-type: none"> - Main provisions of regulatory framework for research activities in healthcare; - Principles of evidence-based medicine. <p>S-PC-3.7 Be able to:</p> <ul style="list-style-type: none"> - Apply results of medical research for patient benefit based on evidence-based medicine. <p>P-PC-3.7 Possess skills in:</p> <ul style="list-style-type: none"> - Using research results in practical healthcare activities regarding diagnosis, treatment, medical rehabilitation and prevention. 	Professional standard "02.019. Biophysicist doctor"	B.7. Conducting research in the field of medicine and biology
Professional Activity Type: Organizational-Managerial					

Preparation and application of documentation within the healthcare system, maintenance of medical records in healthcare organizations.	Individuals (patients); the population; the set of means and technologies aimed at creating conditions for preserving and strengthening the health of the adult population	PC-3.5 Able to maintain medical documentation and organize the work of subordinate nursing staff	<p>K-PC-3.5 Know:</p> <ul style="list-style-type: none"> - Rules for completing medical documentation including in medical information systems; - Basic principles of organization and management in healthcare, in medical organizations and their structural units. <p>S-PC-3.5 Be able to:</p> <ul style="list-style-type: none"> - Apply knowledge of organization and management in healthcare, in medical organizations and their structural units; - Organize the work of subordinate junior and nursing staff. <p>P-PC-3.5 Possess skills in:</p> <ul style="list-style-type: none"> - Completing patient medical records and other medical documentation including electronically in medical information systems; - Monitoring performance of duties by district nurses and other subordinate healthcare workers. 	Professional Standard "02.009. «Medical doctor (local general practitioner)	A/06.7. Maintaining medical records and organizing the activities of mid-level medical personnel
collection of medical data, medical and statistical	Individuals (patients); the population; the set of means and technologies aimed at	PC-3.4 Able to analyze population health indicators	<p>K-PC-3.4 Know:</p> <ul style="list-style-type: none"> - Factors shaping human health; - Main medical-statistical 	Professional Standard "02.022. Specialist in Healthcare Organization and Public Health"	A.7. Maintaining statistical records in a medical organization

<p>analysis of information on the population health indicators for various age and sex groups</p>	<p>creating conditions for preserving and strengthening the health of the adult population</p>		<p>indicators characterizing population health, methods for their calculation;</p> <ul style="list-style-type: none"> - Methodologies for collecting medical-statistical information. <p>S-PC-3.4 Be able to:</p> <ul style="list-style-type: none"> - Analyze statistical indicators of morbidity with temporary disability, disability, mortality. <p>P-PC-3.4 Possess skills in:</p> <ul style="list-style-type: none"> - Analyzing official statistical reporting, including federal and industry statistical observation forms. 		
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**Section 5. EMPLOYER ORGANIZATIONS/CUSTOMERS OF THE
EDUCATIONAL PROGRAM**

5.1 List of Employer Organizations/Customers of the Educational Program

Program Director

Deputy Director of the Institute of Engineering
Physics for Biomedicine

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