MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE
SUMY STATE UNIVERSITY

EDUCATIONAL AND PROFESSIONAL PROGRAM

MEDICINE

Higher Education Level	Second (Master's) level
Higher Education Degree	Master
Specialty	222 Medicine
Area of Expertise	22 Healthcare
Qualification	Master of Medicine

Approved by the decision of the Academic Council
(incl. amendments)
Minutes dated _____30.08.2021_____ p. № _____1___
Head of the Academic Council _____ A. V. Vasyliev
(Signature) (Name)

Sumy 2021

LETTER OF APPROVAL
Of Educational and Professional Program

The educational and professional program was discussed and approved at the meeting of the Council for Quality Assurance in Education of the Medical Institute of Sumy State University

Minutes No.__1___ dated _____27.08.2021_____

Chairman of the Quality Council of the Medical Institute of SSU

_____ L. O. Prikhoza.
(Signature) (Name)

The educational and professional program was discussed and approved at the meeting of the Council for Quality Assurance in Education of Sumy State University.

Minutes No.___1__ dated ___28.08.2021_____

Chairman of the Quality Council of Sumy State University

_____ A. V. Vasyliev
(Signature) (Name)

PREFACE

There are currently no state standards of higher education. The program meets the temporary standards of Sumy State University being effective until approved state standard of higher education takes effect.

The program is developed by a working project group consisting of:

Full name		Academic degree, code, and specialty	Academic title (ref. to the department)	Position and structural unit (at the primary place of employment)
Head of the working project group (head of the educational program):	Prystupa Lyudmila Nykodymivna	DMedSc in specialty 14.01.27 "Pulmonology"	Professor at the Department of Internal Medicine with the Center of Respiratory Medicine	Head of the Department of Internal Medicine with the Center of Respiratory Medicine
Members of the working project group:	Petrashenko Viktoriya Oleksandrivna	PhD in Medical Science in specialty 14.01.10 "Pediatrics"	Associate Professor at the Department of Pediatrics	Associate Professor at the Department of Pediatrics
	Ataman Yuriy Oleksandrovych	DMedSc in specialty 14.03.04 "Pathological physiology"	Professor at the Department of Family Medicine with a course in Dermatovenerology	Professor at the Department of Family Medicine with a course in Dermatovenerology
	Holubnycha Viktoriya Mykolayivna	PhD in Medical Science in specialty 03.00.07 "Microbiology"	Associate Professor at the Department of Public Health	Deputy Director for Academic Affairs, Associate Professor at the Department of Public Health
	Fadieieva Hanna Anatoliyivna	PhD in Medical Science in specialty 14.01.27 "Pulmonology"	Associate professor at the Department of Internal Medicine with the Center of Respiratory Medicine	Associate professor at the Department of Internal Medicine with the Center of Respiratory Medicine
	Savenko Inessa Ivanivna	-	-	Director of Municipal Non-Commercial Enterprise of Sumy Regional Council "Sumy Regional Clinical Hospital for War Veterans"
	Leslaw Lenartowic	-	-	Chief Physician of Healthcare Center "St. John Paul II Hospital", Poznan, Poland
	Varava Yuliya Valentynivna	Student, Group ЛС-611	-	-
	Vireko Andrew Avuah	Student, Group Мц.м-742	-	-

External reviewers:

Full name	Academic degree, code, and specialty	Academic title (ref. to the department)	Position and organization name (at the primary place of employment)
Skrypnyk Ihor Mykolayovych	DMedSc, 14.01.02 – internal diseases	Professor at the Department of Internal Medicine No.1	Vice-Rector for Academic Teaching Affairs and Postgraduate Education, Professor at the Department of Internal Medicine No.1 of Poltava State Medical University
Shulhay Arkadiy Havrylovych	DMedSc, 14.01.03 – systematic anatomy	Professor at the Department of Social Medicine, HealthCare Organization and Economics with Medical Statistics	Vice-Rector for Academic Teaching Affairs, I. Horbachevsky Ternopil National Medical University
Horokh Volodymyr Vasyliovych	-	-	Director of Municipal Non-Commercial Enterprise of Sumy Regional Council "Sumy Regional Clinical Hospital"
Diana Pendicheva	PhD	Associate Professor	Vice-rector for European Integration and Academic mobility, Medical University, Pleven (Bulgaria)

The educational and professional program was discussed and approved at the meeting of the Expert Council of Employers in the specialty 222 Medicine

Minutes No_____4___ dated _____26.08.2021____
Head of the Expert Council of Employers in the specialty 222 Medicine

_____ Bortenko S.P.
(Signature) (Name)

The educational program is reviewed once a year.

1. Profile of Educational and Professional Program

1.1 General Information	
Full official name of a higher education institution	Sumy State University
Full name of a structural unit	Sumy State University, Medical Institute, Department of Internal Medicine with the Center of Respiratory Medicine
Higher education degree and qualification	Master of Medicine in area of expertise 22 "Healthcare", specialty 222 "Medicine". Professional qualification – physician
Official title of educational program	Medicine
Type of degree award and scope of educational program	Master's degree, single, 360 ECTS credits, training duration – 5 years 10 months
Program accreditation	National Agency for Higher Education Quality Assurance. Ukraine. Not accredited.
Cycle/level of higher education	Second (Master's) level of higher education; NQF – 7-th level; QF-LLL – 7-th level; QF-EHEA – 2-nd cycle
Preconditions	A person has the right to obtain a Master's degree on the basis of complete general secondary education in case of successful completion of an external independent testing. Enrollment requirements are determined in SSU Admission Regulations.
Language(s) of instruction	Ukrainian, English
Duration of educational program	Untill 01 July 2023
Permanent URL of educational program description	https://op.sumdu.edu.ua/#/
1.2 Aims of the Educational and Professional Program	
The educational and professional program was designed in accordance with the mission and strategy of the University in order to serve the public trust and conduct educational activities, and aims at training of highly qualified medical professionals who can solve complex problems in the field of health care; develop and obtain general and special competencies suitable for further medical professional activity; be able to conduct research and innovation activities in accordance with the principles of bioethics and academic integrity.	
1.3 Characteristics of the Educational Program	
Subject area of the educational program	**Activity subject**: prevention; modern methods of diagnosis and treatment of pathological processes or human diseases; the impact of health problems on the physical, mental, and social well-being of patients, their families and populations; maintaining patients' good health by prolonging life duration and improving quality of life. **Learning objectives**: training of highly qualified specialists in medicine who can solve complex problems in the medical field, which involves obtaining new holistic knowledge, skills, and abilities necessary and sufficient for further professional activity in this domain. **Theoretical content of the subject area:** formation of knowledge of theoretical grounds, concepts, and principles of prevention, diagnosis, and treatment of human diseases at the individual,

	family, and population levels. Solving current problems in the field of medicine, which create the basis for the development and implementation of innovative solutions in theoretical and applied areas; development of language competencies and communication skills; application of acquired knowledge and skills into practice and other society domains. **Methods, techniques, and technologies:** anamnestic, clinical, laboratory, and instrumental methods of diagnostics; detection of key symptoms and syndromes; determination of preliminary and clinical diagnosis; technologies of diagnostics, treatment and prevention, as well as work management in the field of healthcare. A set of full-time, distance, and combined learning methods (lectures, seminars, workshops, trainings), as well as methods of non-formal education and independent work. Extensive use of interactive teaching methods aimed at stimulating analytical and creative skills, and ability to generate ideas, formulate conclusions and create concepts. **Tools and equipment:** state-of-the-art equipment and software meeting the latest healthcare practices and allowing to obtain information about the structure, function, and metabolic processes in the human body, detect and correct pathological conditions in accordance with current international standards.
Orientation of the educational program	Educational and professional. The focus is on developing abilities to master conceptual theoretical and practical knowledge in medical domain, solve significant problems in the field of healthcare, maintain continuous professional development and self-improvement.
The main focus of the educational program and its majors	The program has been designed as an optimal combination of academic and practical professional requirements. It is focused on the formation of competencies for solving complex specialized tasks and problems in the field of healthcare, which involves acquisition, profound improvement, and generalization of knowledge and skills, and formation of new competencies in professional activities. The peculiar focus of the program, which distinguishes it from other programs, lies in the formation of medical competencies in view of current trends, international standards of medical professional activity with the possibility of obtaining additional qualifications in postgraduate education system and proceeding with training at the scientific level of higher education. Keywords: healthcare, medicine, higher education, master's degree
Features of the program	The program was developed taking into account the dynamics of regional, national, and international aspects of modern theoretical and clinical medicine. The program provides the future professionals with fundamental professional competencies by combining theoretical and practical training, taking into account the needs in public health and trends in modern world in the context of globalization and unresolved epidemiological challenges. The uniqueness of the program is determined by a combination of classical university education, which is implemented in a logical sequence of disciplines supplemented by the latest scientific advances, and clinical practice grounded on evidence-based medicine and involving leading domestic and foreign health

	professionals, modern facilities and logistics, innovative technologies. The program is implemented in small groups. Training in Ukrainian and English is available.
1.4 Graduate Employability and Suitability for Further Education	
Employability	Specialist trained to work according to DK 003-2010: Section Q. Healthcare and social assistance Chapter 86.1. Activity of healthcare facilities Group 86.10. Activity of healthcare facilities Class 86.21. General medical practice Class 86.90. Other activities in healthcare domain After completion of Master's degree educational program in specialty "Medicine", a specialist is able to perform professional work as: internship doctor (KP code – 3229); junior doctor (KP code – 3221); resident doctor (KP code – XXX).
Further education	For further professional training in specialty "Medicine", graduates have to enter postgraduate programs – internship (primary specialization), where educational programs are implemented in a particular specialty according to the list approved by the Order of the Ministry of Health of Ukraine № 81 dated 23.02.2005, and can also enter an academic program for Ph.D. training. After internship or residency, the specialist is awarded with a qualification of a physician, is able to perform the professional activity specified in DK 003:2010 and can hold the appropriate medical position: Class 222 Healthcare professionals (except nurses). Subclass 2221 General Medicine Professionals (except dentists). Group 2221.2 Physicians. Subclass 2225 Medical and Preventative Care Professionals. Subclass 2225.2 Medical and Preventative Care Physicians. Group 2229.2 Healthcare Professionals (except nursing and obstetrics). In the future, specialists may have advanced training and residency training to obtain another medical specialty and perform corresponding professional work. Professional skills development will ensure continuous professional growth of specialists in the cycles of subject improvement, information and internships courses and other types of postgraduate education.
1.5 Teaching and Assessment	
Teaching and studying	Student-centered learning, task-oriented learning in team, research-oriented and interdisciplinary learning, interdisciplinary learning, e-learning in the SSU Open Course Ware system, self-study taking into account the principles of academic freedom and possibility to form an individual educational trajectory within the framework of academic mobility programs. Teaching is in the form interactive lectures, seminars, interactive practical tasks, brainstorming, role-playing games, educational discussions, work in a simulation center, analysis of clinical situations (Case-based learning), problem-oriented training, industrial and medical training. In case of quarantine restrictions, practical exercises, differential tests, exams are held remotely using the platforms Mix.sumdu.edu.ua, Google meet.

Assessment	The educational program provides formative assessment (written and oral teachers' comments and instructions in the learning process, formation of self-assessment skills, involvement of postgraduate students to the assessment of each other, tests, defence of case histories, individual research projects) and summative assessment (assessment of current work during the study of separate educational components, defence of case histories, individual research projects, written practically oriented exams in academic disciplines, exams, Unified National Qualification Examination, professional English exam, objective structured practical (clinical) examination) which determines the level of expected learning outcomes achievement. In case of quarantine restrictions, practical exercises, differential tests, exams are held remotely using the platforms Mix.sumdu.edu.ua, Google meet.
1.6 Program Competencies	
Integral competency	Ability to solve complex problems of professional, research and/or innovative nature during study and healthcare practical activities.
General competencies (GC)	GC 1. Ability to abstract thinking, analysis, and synthesis. GC 2. Ability to learn, master modern knowledge, and apply the knowledge in practice. GC 3. Knowledge and understanding of the subject area and professional activity comprehension. GC 4. Ability to adapt and act in a new situation. GC 5. Ability to make reasoned decisions; teamwork ability; interpersonal skills. GC 6. Ability to communicate in a foreign language. GC 7. Ability to use information and communication technologies. GC 8. Determination and persistence on the tasks and commitments undertaken. GC 9. Ability to exercise one's rights and responsibilities as a member of society, to realize the values of civil (free democratic) society and the need for its sustainable development, the rule of law, human rights and freedoms; GC 10. Ability to maintain and multiply moral, cultural, scientific values and achievements of society based on understanding the history and development patterns of the subject area, its place in the general system of knowledge about nature and society and in the development of society, techniques and technologies using different types and forms of physical activity for active recreation and a healthy lifestyle.
Specialty competencies (SC)	SC 1. Ability to collect medical information about the patient and analyze clinical data. SC 2. Ability to determine the required set of laboratory and instrumental studies and to evaluate their results. SC 3. Ability to establish a provisional and clinical diagnosis of disease. SC 4. Ability to determine the necessary mode of work, rest, and diet in the treatment course. SC 5. Ability to determine the principles of treatment and treatment modality and to perform medical procedures.

	SC 6. Ability to diagnose medical emergencies, determine the approach to emergency medical care, implement medical evacuation procedures. SC 7. Ability to solve medical problems in new or unfamiliar environments given incomplete or limited information, taking into account aspects of social and ethical responsibility. SC 8. Ability to determine the approach to physiological pregnancy, physiological delivery, and postpartum period. Skills in counseling with regard to family planning and contraceptive method selection. SC 9. Ability to perform sanitary and preventive measures. SC 10. Ability to plan and conduct preventive and disease control measures for infectious diseases. SC 11. Ability to perform disability examination. SC 12. Ability to maintain medical records, including electronic documents. SC 13. Ability to conduct epidemiological and medical-statistical research of public health; ability to process governmental, social, economic, and medical information. SC 14. Ability to assess the influence of environment, socio-economic and biological determinants on the health of a person, family, or population. SC 15. Ability to analyze activity of a doctor, department, or healthcare institution; to carry out measures for providing healthcare quality and to increase the efficiency of medical resources. SC 16. Ability for organization and integration of public medical care and marketing of medical service. SC 17. Ability to integrate knowledge and solve complex health problems in a broad or multidisciplinary context. SC 18. Ability to manage healthcare workflows that are complex, unpredictable and require new strategic approaches SC 19. Ability to develop and implement scientific and applied healthcare projects.

1.7 Program Learning Outcomes (PLO)

PLO 1. To detect and identify the leading clinical symptoms and syndromes (according to the List 1); to establish the most probable nosological or syndromic preliminary clinical diagnosis of diseases (according to the List 2) using standard methods, preliminary data of the patient's anamnesis, patient's examination data, and knowledge about a human, his organs and systems.

PLO 2. To collect information about the patient's general condition; to assess the patient's psychomotor and physical development and the state of organs and systems of the body; to assess information on the diagnosis (according to the List 4) based on laboratory and instrumental findings.

PLO 3. To order and analyze additional (mandatory and optional) examinations (laboratory, radiological, functional and/or instrumental) (according to the List 4) in order to perform a differential diagnosis of diseases (according to the List 2).

PLO 4. To establish a final clinical diagnosis at a medical institution under control of a supervising doctor by means of informed decision and logical analysis of the obtained subjective and objective data of clinical and additional examinations, and differential diagnosis, following the relevant ethical and legal norms (according to the List 2).

PLO 5. To detect the key clinical syndrome or the reason for patient's condition severity (according to the List 3) via informed decision and evaluation of the person's state under any circumstances

(at home, in the street, at a healthcare facility), including under emergency and military operation conditions, in the field, with a lack of information and limited time.

PLO 6. To determine the nature and treatment principles (conservative, operative) in patients with diseases (according to the List 2) at a healthcare facility, at patient's home or during medical evacuation process (including in the field), based on the provisional clinical diagnosis and observing the relevant ethical and legal norms, by making a reasonable decision according to existing algorithms and standard procedures based on the principles of evidence-based medicine; if needed to go beyond the standard scheme, to substantiate the personalized recommendations under control of a supervising doctor at a medical facility.

PLO 7. To determine an appropriate work and rest mode in the treatment of diseases (according to the List 2) at a healthcare institution, at patient's home and during medical evacuation (including in the field), based on the provisional clinical diagnosis and observing the relevant ethical and legal norms, by making a reasonable decision according to existing algorithms and standard procedures.

PLO 8. To determine an appropriate diet in the treatment of diseases (according to the List 2) at a healthcare institution, at patient's home and during medical evacuation (including in the field), based on the provisional clinical diagnosis and observing the relevant ethical and legal norms, by making a reasonable decision according to existing algorithms and standard procedures.

PLO 9. To determine an appropriate approach, plan, and management of physiological pregnancy, physiological delivery, and postpartum period by making a reasonable decision according to existing algorithms and standard procedures.

PLO 10. To assess the general condition of a newborn child by making an informed decision according to existing algorithms and standard schemes and adhering to the relevant ethical and legal norms.

PLO 11. To determine the appropriate approach in emergency medical care case under any circumstances, adhering to the relevant ethical and legal norms, by making an informed decision based on the main clinical syndrome (disease severity) and emergency diagnosis (according to the List 3) using standard schemes under limited time conditions based on the principles of evidence-based medicine.

PLO 12. To provide emergency medical assistance under any circumstances, adhering to the relevant ethical and legal norms, by making an informed decision based on the main clinical syndrome (disease severity) and emergency diagnosis (according to the List 3) using standard schemes and predetermined approach under limited time conditions based on the principles of evidence-based medicine.

PLO 13. To organize medical evacuation procedures among the population and the military under emergency and military operation conditions (including in the field), and during the phases of medical evacuation, given the existing system of medical evacuation provision.

PLO 14. To perform medical procedures (according to the List 5) at a medical facility, at home or at work on the basis of a provisional clinical diagnosis and/or health parameters through making an informed decision and adhering to the relevant ethical and legal norms.

PLO 15. To perform procedures related to emergency medical assistance within a limited time and under any circumstances, using standard schemes on the basis of a medical emergency diagnosis (according to the List 3).

PLO 16. To plan and implement a system of sanitary and preventive measures against the occurrence and spread of diseases among the population.

PLO 17. To analyze epidemiological situation and carry out measures of mass and individual, general and local prevention of infectious diseases.

PLO 18. To search for the necessary information in the professional literature and databases; to analyze, evaluate, and apply this information. To apply modern digital technologies, specialized software, statistical methods of data analysis to solve complex health problems.

PLO 19. To assess environmental impact on public health.

PLO 20. To formulate goals and define the structure of personal activity based on the analysis of social and personal needs.

PLO 21. To organize an appropriate level of individual safety (own and of those cared for) in case of typical dangerous situations in the individual field of activity. PLO 22. To communicate one's knowledge, conclusions, and arguments on health issues and related concerns clearly and unambiguously to professionals and non-specialists, in particular to students. PLO 23. To manage healthcare workflows that are complex, unpredictable and require new strategic approaches; to organize conditions for work and professional development of staff. PLO 24. To communicate freely in state and foreign languages orally and in writing in order to discuss professional and research activities. PLO 25. To make effective healthcare decisions assessing resources and considering social, economic, and ethical implications.	
1.8 Resources for Program Implementation	
Human resources	The educational and practical components of the educational and professional program are implemented with the help of highly qualified staff with academic degrees and academic titles who are active and recognized scientists, publish works in the domestic and foreign scientific publications, have relevant professional expertise in the field of teaching, research and pedagogical activity; they are international projects participants, are awarded grants and do international internships. Academic and scientific qualifications of the teachers are confirmed by their publications (including those published in scientific journals cited in scientometric databases Scopus and Web of Science) and relevant indicators of scientific and professional activity, as well as high citation index The teachers are members of the editorial boards of foreign journals cited in scientometric databases Scopus and WoS. Practical aspects in the pedagogical process are provided with the help of numerous practitioners. The project team, head of the educational program and teaching staff, including part-time physicians, ensure implementation of the educational program and comply with the requirements determined by «License conditions».
Logistics	Academic activities according to the educational program take place in classrooms equipped with audiovisual equipment and necessary technical means, including simulation center. Areas and logistics of all departments, which are involved in the educational process under the program, are used, including clinical site-based departments (according to the corresponding agreements). Classes are carried out in 63 lecture-rooms (40 to 192 seats), 178 classrooms for group activities, 102 university laboratories, 78 computer classrooms. The educational process in the specialty 222 Medicine is carried out in 47 classrooms and laboratories with multimedia equipment, as well as in simulation classes. Computer classes are equipped with Microsoft licensed operating systems and application software packages. Modern educational and communication technologies are used in the educational process. To participate in research, students can use the research base of the University Clinic, SSU Center for the Collective Use of Scientific Equipment, Pathomorphological Research Center, Molecular Genetic Research Center, Bionanocomposite laboratory, vivarium, and Morphological Research Center, Ukrainian-Swedish Research Center, SSU Center for the Collective Use of Equipment,

	Fundamental Research Laboratory "Center for Social and Humanitarian Aspects of Regional Studies", Electron Microscopy and Mass Spectrometry Regional Center, Research and Training Center for Modeling in Complex Systems, Microsoft Imagine Academy Training and Methodological Center, Fundamental Research Laboratory for Electronic Systems and Information Coding Means. In addition to its own infrastructure and logistical support, material resources of the university partners are intensively used in the educational and scientific activities within the educational program. Classrooms, branches of departments, educational-scientific and educational centers, as well as clinical departments of the Medical Institute are based on 24 sites of clinical medical institutions, which allows to combine effectively educational process, research, and practical activities in the relevant fields.
Information provision and methodological support	The students studying by the educational program as well as the teachers can attend the library and information center, interuniversity scientific library, separate libraries, and library facilities at academic and scientific units of the university, in particular at Medical Institute. There are on-line electronic reading rooms available. The students can access all print publications in different languages, including monographs, tutorials, textbooks, dictionaries, etc. Whereas, they can browse the literature sources using traditional library search tools or use Internet and database access. Program-specific information resources of the SSU library are formed in accordance with the subject area and current tendencies of scientific research in the corresponding field. Higher education students studying by the educational program can assess the following databases: Scopus, Web of Science, Springer Nature, USMLE-Rx, Wiley, APA's PsycTherapy, Grammarly, Coursera for Campus, Access Medicine, Wolters Kluwer Health/Ovid, MedOne Plastic Surgery, Academic Search Ultimate (EBSCOhost), eSSUIR, SSU Electronic Library Catalogue, scientific periodicals of the Vernadsky National Library of Ukraine, Scientific Digital Library of Periodicals of NAS of Ukraine, WHO, BioMed Central, British Medical Journal (The BMJ), Cochrane Library, eMPendium, FreeBooks4Doctors, FreeMedicalJournals, Wiley Open Access, PubMed Central, PloS, Bookshelf, Child Neurology Society, Hardin MD, Harvard University, MedBioWorld, MedBioWorld, Medknow Publication, MedPix, Nature, National Cancer Institute, Pediatric Neurology Briefs, PracticeUpdate, Royal Society of Chemistry, Academic Journals, Academic Journals Database (Switzerland), Directory of Open Access Books (DOAB), Directory of Open Access Journals (DOAJ), Elsevier, Hindawi Publishing Journals, HighWire Press, HINARI, Journals4Free, Open Academic Journals Index (OAJI), Oxford Journals, Google Scholar, Healthline, The Directory of Open Access Repositories (OpenDOAR), E-Books Directory, Europe PubMed Central, Crossref, PubMed, Taylor & Francis. Students also use teaching materials prepared by teachers, as well as monographs, journal articles, statistical databases, etc. Teaching materials and scientific data can be provided both in print and

	electronic forms. The Center for Scientific, Technical and Economic Information carries out administration and methodological work in the field of intellectual property protection and provides the possibility of patent search in the national and world databases. The e-learning system provides materials related to the study program subjects in Ukrainian and English, as well as access to virtual simulators and interactive demonstrations, tests, and other methodological components of e-learning. SSU OCW platform has been developed for remote access to teaching materials (the platform allows to combine distance course materials and Lectur`ED program with collective work on electronic educational resources, electronic library catalogue materials, repository and links to external educational resources). The University has concluded agreements with Antiplagiat, Inc. and Plagiat.pl, LLC for Unicheck and StrikePlagiarism systems application, respectively, designed for qualification and research papers inspection. The bank of qualification works is being formed in the university repository. Each scientific journal published by the University checks every publication for plagiarism before publishing it. Teaching materials and scientific data are regularly updated and adapted according to the goals of the educational program. Information support of interaction between the participants of the educational process is carried out via Electronic Personal Account system. This is a single pathway to access information services that creates conditions for communication between academic staff and study groups or individuals; it allows higher education students to choose free choice subjects and maintain an individual trajectory, receive information on learning outcomes and individual curriculum, etc.
1.9 Academic mobility	
Internal academic mobility	It is implemented through bilateral agreements between Sumy State University and higher education institutions of Ukraine. The key institutions among them are represented by Petro Mohyla Black Sea National University, Kharkiv National Medical University, Lesya Ukrainka Eastern European National University.
International academic mobility	Bilateral agreements are held between Sumy State University and foreign higher education institutions: University of Patras (Greece, cooperation agreement dated 2015), Kutaisi University (Georgia, cooperation agreement dated 10.08.2015), University of Foggia (Italy, cooperation agreement dated 01.06.2016), Osterburken All-Day High School (Germany, cooperation agreement dated 01.01.2018), Adam Mickiewicz University (Poland, cooperation agreement dated 14.06.2017), Umeå University (Sweden, agreement dated 2016), University of Veterinary and Pharmacological Sciences (Brno, Czech Republic, agreement dated 2015), Lumiere University (France, agreement dated 2015), University of Porto (Portugal, agreement dated 2012), Alexandru Ioan Cuza University (Romania, agreement dated 2015), etc.
Education of foreign students	Education of foreign students is carried out in accordance with the requirements of the legislation. Admission is performed in

	accordance with the Admission Regulations and requires passing the relevant professional exams.

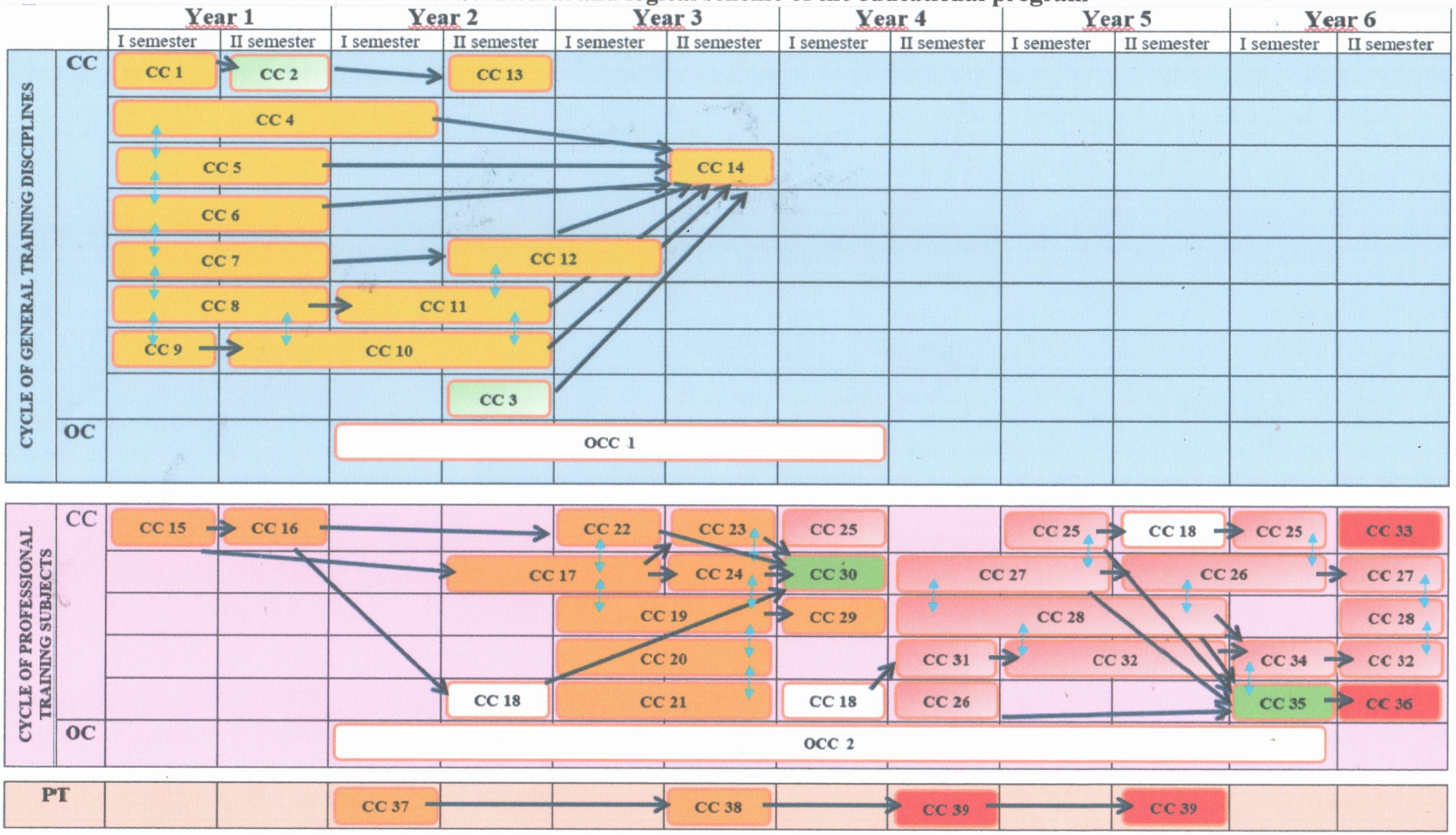
2. List of Educational Program Components and Their Logical Sequence

2.1 List of Educational Program Components

Component code	Educational program components (academic subjects, course papers (projects), practical training, qualifying papers)	Number of credits	Summative assessment form
1	2	3	4
Mandatory components			
Cycle of general training disciplines			
CC 1.	English language / (Ukrainian as a foreign language*)	5	graded test
CC 2.	Integrated course "Fundamentals of academic writing"	5	graded test
CC 3.	Integrated course "Democracy: principles, values, mechanisms"	5	graded test
CC 4.	Human anatomy	14	exam
CC 5.	Histology, cytology, embryology	12	exam
CC 6.	Latin language and medical terminology	4	graded test
CC 7.	Medical biology	6	exam
CC 8.	Medical and biological physics	4	graded test
CC 9.	Medical chemistry	4	graded test
CC 10.	Biological and bioorganic chemistry	9	exam
CC 11.	Physiology	9	exam
CC 12.	Microbiology, virology, and immunology	7	exam
CC 13.	Medical informatics	3	graded test
CC 14.	Integrated course of fundamental disciplines	3	graded test
Cycle of professional training subjects			
CC 15.	Life safety, basics of bioethics and life protection	3	graded test
CC 16.	First aid	3	graded test
CC 17.	Hygiene and ecology	6	graded test
CC 18.	Training of reserve officers in area of expertise "Healthcare", specialty "Medicine". / (Ukrainian as a foreign language*)	10	graded test
CC 19.	Pathomorphology	5	exam
CC 20.	Pathophysiology	5	exam
CC 21.	Pharmacology	5	exam
CC 22.	General surgery	5	graded test
CC 23.	Propaedeutics of internal medicine	4	graded test
CC 24.	Propaedeutics of pediatrics	4	graded test
CC 25.	Internal medicine, incl. medical genetics, endocrinology, dermatology, venereology, clinical pharmacology, clinical immunology and allergology, phthisiology	28	exam
CC 26.	Obstetrics and gynecology	9	exam
CC 27.	Pediatrics incl. children's infectious diseases	19	exam
CC 28.	Surgery, incl. pediatric surgery, neurosurgery; traumatology and orthopedics; emergency/urgent medical care; oncology	23	exam

CC 29.	Radiology	3	graded test
CC 30.	Public health. Healthcare management	4	graded test
CC 31.	Neurology, psychiatry and narcology	5	graded test
CC 32.	Infectious diseases. Epidemiology and principles of evidence-based medicine	9	exam
CC 33.	Hygiene and ecology. Public health	5	graded test
CC 34.	General practice (family medicine). Anesthesiology and intensive care	4	graded test
CC 35.	Fundamentals of scientific research in medicine	3	graded test
CC 36.	Integrated course of clinical disciplines	3	graded test
Practical training			
CC 37.	Patient care	4	graded test
CC 38.	Nursing	3	graded test
CC 39.	Industrial medical practice	8	graded test
Assessment			
Standardized test (licensed integrated) exam "KROK 1. General medical training"			
Standardized test (licensed integrated) exam "KROK 2. General medical training"			
Objective structured clinical examination			
Total amount of compulsory components:		**270**	
Total amount of optional components cycle of general training disciplines		**25**	
Total amount of optional components cycle of professional training subjects		**65**	
OVERALL SCOPE OF THE EDUCATION PROGRAM:		**360**	

2.2 Structural and logical scheme of the educational program



Abbreviations: CC – compulsory educational component, OC – optional educational component, OCC 1 – OC from catalogue cycle of general training disciplines, OCC 2 – OC from catalogue cycle of professional training subjects, PT – practical training.

Notes: 1. A prerequisite for studying the disciplines indicated is the study of disciplines designated

2. A prerequisite for studying the disciplines indicated is the study of disciplines designated

3. A prerequisite for studying the disciplines indicated is the study of disciplines designated

4. A prerequisite for studying the disciplines indicated is the study of disciplines designated

3. Type of Assessment

Types of assessment	Assessment is held in the form of Unified State Qualification Examination.
Unified State Qualification Examination requirements	Unified National Qualification Examination is carried out in accordance with the Unified National Qualification Examination Procedure for Master's degree students in area of expertise "Healthcare" and includes: • "KROK" integrated test exam which is conducted in two test phases: "KROK 1" (to assess the level of professional competencies in general (fundamental) disciplines) and "KROK 2" (to assess the level of professional competencies in occupational (clinical) disciplines). The exam helps to evaluate compliance of study quality with the standards of higher education and is carried out by the Testing Center of the Ministry of Health of Ukraine; • professional English exam, which assesses the student's competency in professional English and is conducted by the Testing Center of the Ministry of Health of Ukraine; • objective structured practical (clinical) examination, which assesses the readiness of the graduates to pursue professional activities in accordance with the requirements of higher education standards by demonstrating practical (clinical) components of professional competencies using a real object or a model; it is conducted by the examination commission of the higher education institution.

THE PROGRAM WAS DEVELOPED BY:

Head of the Educational Program L. N. Prystupa

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Appendix

Appendix 1. Matrix of correspondence between program competencies and educational program components

Designations of program competencies and educational program	CC 1	CC 2	CC 3	CC 4	CC 5	CC 6	CC 7	CC 8	CC 9	CC 10	CC 11	CC 12	CC 13	CC 14	CC 15	CC 16	CC 17	CC 18	CC 19	CC 20	CC 21	CC 22	CC 23	CC 24	CC 25	CC 26	CC 27	CC 28	CC 29	CC 30	CC 31	CC 32	CC 33	CC 34	CC 35	CC 36	CC 37	CC 38	CC 39
GC 1			+										+	+		+		+		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+			+
GC 2	+	+		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
GC 3				+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
GC 4	+														+	+		+	+			+			+	+	+	+		+	+	+	+	+			+	+	+
GC 5														+	+	+	+	+				+	+	+	+	+	+	+	+	+	+	+	+			+	+	+	+
GC 6	+																		+																				
GC 7	+	+		+	+		+	+	+	+	+	+	+			+		+	+			+	+	+	+	+	+	+	+	+	+	+	+	+	+			
GC 8														+		+		+	+			+	+	+	+	+	+	+	+	+	+	+	+	+					
GC 9			+												+			+				+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
GC 10			+								+				+		+													+									
SC 1																+		+				+	+	+	+	+	+	+	+	+	+	+		+		+	+	+	+
SC 2																				+		+	+	+	+	+	+	+	+	+	+			+		+		+	+
SC 3																+		+				+	+	+	+	+	+	+	+	+	+			+		+		+	+
SC 4																	+								+	+	+	+			+	+		+		+			+
SC 5																+		+							+	+	+	+		+	+	+		+		+		+	+
SC 6																+		+				+	+	+	+	+	+	+		+	+	+		+		+		+	+
SC 7			+													+	+	+				+	+	+	+	+	+	+	+	+	+	+		+	+	+			+
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SC 13	+												+				+					+	+	+			+					+	+						+
SC 14														+			+				+		+	+	+	+	+	+		+		+	+	+					
SC 15													+																	+			+						+
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SC 18																																+							
SC 19	+	+											+						+														+		+				

Appendix 2. Matrix of correlation between program learning outcomes and the relevant components of the educational program

Designations of program competencies and educational program components	CC 1	CC 2	CC 3	CC 4	CC 5	CC 6	CC 7	CC 8	CC 9	CC 10	CC 11	CC 12	CC 13	CC 14	CC 15	CC 16	CC 17	CC 18	CC 19	CC 20	CC 21	CC 22	CC 23	CC 24	CC 25	CC 26	CC 27	CC 28	CC 29	CC 30	CC 31	CC 32	CC 33	CC 34	CC 35	CC 36	CC 37	CC 38	CC 39
PLO 1				+	+	+			+	+	+	+		+		+		+		+		+	+	+	+	+	+		+	+	+		+		+	+	+	+
PLO 2					+			+	+	+	+	+	+	+					+	+		+	+	+	+	+	+	+	+	+	+		+		+	+	+	+
PLO 3					+			+	+	+		+	+	+					+	+		+	+	+	+	+	+	+	+	+	+		+		+		+	+
PLO 4					+			+		+		+	+		+				+	+					+	+	+	+	+	+		+		+				+
PLO 5										+						+		+		+		+	+	+	+	+	+	+		+	+		+		+		+	+
PLO 6						+									+	+		+			+	+			+	+	+	+		+	+		+		+			+
PLO 7															+		+								+	+	+	+			+	+	+		+			+
PLO 8																	+								+	+	+	+		+	+	+	+		+			+
PLO 9				+	+						+														+										+			+
PLO 10				+							+			+										+	+	+	+		+						+		+	+
PLO 11														+	+		+				+				+	+	+	+		+	+	+		+		+			+
PLO 12				+										+	+		+				+				+	+	+	+		+	+	+		+		+			+
PLO 13															+		+				+				+			+				+			+				+
PLO 14				+							+			+	+		+					+	+	+	+	+	+	+				+		+		+	+	+
PLO 15				+											+		+								+	+	+	+			+	+		+					
PLO 16							+							+			+								+	+	+	+		+	+	+	+	+			+	+	+
PLO 17							+										+											+				+	+			+	+	+	+
PLO 18	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		+	+	+		+	+	+	+	+	+	+	+		+	+	+	+	+				
PLO 19							+								+		+			+		+	+	+	+	+	+	+		+	+	+	+	+		+			
PLO 20														+																+			+						
PLO 21														+											+			+	+			+	+			+		+	+
PLO 22	+	+	+	+									+																				+		+				
PLO 23		+	+																											+			+		+			
PLO 24	+	+				+												+															+						
PLO 25			+										+		+															+		+	+		+				

Note:

1. PLO – a certain program learning outcome according to Section 1.7 of the current document
2. + – means that a certain outcome is provided with the educational component of the current line.

Appendix 3

List 1 (Syndromes and Symptoms)

1. amenorrhea
2. acromegaly
3. anemia syndrome
4. anuria and oliguria
5. arterial hypertension
6. arterial hypotension
7. chest pain
8. abdominal pain
9. extremities and back pain
10. perineum pain
11. sore throat
12. vomiting
13. broncho-obstructive syndrome
14. bulbar palsy
15. pleural effusion
16. paranoid-hallucinatory syndrome
17. fever
18. hemorrhagic syndrome
19. hypoglycemia
20. hyperglycemia
21. exanthema, enanthema
22. hepatomegaly and hepatolienal syndrome
23. headache
24. dysuria
25. dysmenorrhea
26. dyspepsia
27. dysphagia
28. diarrhea
29. jaundice
30. dyspnea
31. asphyxia
32. constipation
33. dizziness
34. delayed child growth
35. cardiomegalia
36. cough
37. intestinal obstruction
38. coma
39. external bleeding
40. internal bleeding
41. hemoptysis
42. lactorrhea
43. lymphadenopathy
44. meningeal syndrome
45. uterine bleeding
46. edema syndrome
47. obesity (+ body weight)
48. paresis, paralysis
49. premature puberty
50. fracture of tubular bones
51. tension pneumothorax (closed)
52. tension pneumothorax (open)
53. valve pneumathorax
54. polyuria
55. portal hypertension
56. speech disorder (aphasia)
57. arrhythmia and conduction disorder
58. sudden cardiac arrest
59. disorders of consciousness
60. itchy skin
61. urinary syndrome
62. dementia syndrome
63. dehydration syndrome
64. maldigestion syndrome
65. thirst
66. stridor
67. articular syndrome
68. seizures
69. weight loss
70. cyanosis
71. partial or complete visual loss
72. partial or complete hearing loss
73. gastrointestinal bleeding

List 2 (Diseases)

I) Diseases of the blood and blood-forming organs; disorders involving the immune mechanism

1. anemias
2. hemolytic disease of the newborn
3. hemophilia
4. leukemias
5. lymphomas
6. congenital (Bruton's disease, Wiskott-Aldrich syndrome) and acquired immunodeficiency disorders
7. neonatal sepsis
8. surgical sepsis
9. idiopathic thrombocytopenic purpura
10. chronic radiation sickness

II) Mental and behavioral disorders:

11. bipolar affective disorder
12. acute psychosis including alcoholic delirium
13. epilepsy
14. neurotic disorders
15. personality disorders
16. schizophrenia

III) Diseases of the nervous system

17. intracranial trauma
18. meningitis, encephalitis
19. migraine and other types of headaches
20. perinatal encephalopathy
21. autonomic nervous system disorder
22. cerebrovascular disorder
23. vertebrogenic nervous system disorders, neuropathies, and polyneuropathies
24. multiple sclerosis
25. chronic occupational illnesses (vibration syndrome, occupational dyskinesias)
26. strokes (ischemic, hemorrhagic)

Eye diseases

27. blepharitis
28. glaucoma
29. conjunctivitis
30. foreign body in the eye
31. eye injuries
32. retinopathies
33. exophthalmos

Ear, nose, and throat disorders

34. laryngitis
35. otitis
36. peritonsillar abscess
37. sinusitis
38. tonsillitis
39. throat, snake, nose injuries

IV) Diseases of the cardiovascular system:

40. aortic aneurysms
41. atherosclerosis
42. varicose veins of the lower extremities
43. congenital heart diseases
44. secondary arterial hypertension
45. acute major and peripheral arterial occlusion
46. endocarditis
47. essential and secondary arterial hypertension
48. coronary artery disease
49. carditis
50. cardiomyopathy
51. pulmonary heart
52. acquired valvular diseases
53. obliterating endarteritis
54. pericarditis
55. arrhythmia and conduction disorder
56. heart failure
57. injuries of the heart and blood vessels
58. thromboembolia of the pulmonary artery
59. phlebitis, thrombophlebitis

V) Respiratory and mediastinal diseases:

60. asphyxia
61. bronchial asthma
62. bronchitis
63. bronchiectasis
64. bronchopulmonary dysplasia
65. congenital malformations of the respiratory system
66. acute respiratory distress syndrome
67. respiratory failure
68. infectious and destructive lung diseases
69. pulmonary insufficiency
70. mediastinitis
71. cystic fibrosis
72. neoplasms of the lungs and mediastinum
73. pleurisy
74. pneumoconiosis
75. pneumonia

76. pneumothorax
77. respiratory distress syndrome and neonatal pneumonia
78. foreign body in the respiratory tract
79. chest injuries (superficial, open)
80. chronic obstructive pulmonary disease

VI) Digestive disorders:
81. rectal prolapse
82. peptic ulcer disease
83. congenital malformations of the digestive system
84. gastroesophageal reflux disease, esophagitis
85. gastritis, duodenitis
86. acute and chronic hepatitises
87. acute intestinal obstruction
88. acute and chronic appendicitis
89. acute and chronic pancreatitis
90. benign diseases of the esophagus
91. enteritis, colitis
92. inflammatory diseases of the rectum and perianal region
93. strangulated and uncomplicated abdominal hernias
94. neoplasms of the esophagus, stomach, colon, liver, and pancreas
95. peptic ulcers of the stomach and duodenum
96. peritonitis
97. perforation of a hollow organ
98. liver failure
99. malabsorption syndrome
100. pyloric stenosis of the stomach
101. abdominal injuries (superficial, open)
102. functional gastrointestinal disorders
103. diseases of the operated stomach
104. cholecystitis, cholangitis, gallstone disease, choledocholithiasis
105. cirrhosis of the liver
106. gastrointestinal bleeding

VII) Diseases of the genitourinary system:
107. renal amyloidosis
108. balanitis, balanoposthitis
109. congenital malformations of the genitourinary system
110. glomerulonephritis
111. dysmetabolic nephropathy
112. nephrotic syndrome
113. neoplasms of the kidney, urinary tract, and prostate
114. pyelonephritis
115. prostatitis
116. urolithiasis
117. tubulointerstitial nephritis
118. urethritis
119. chronic kidney disease
120. cystitis

VIII) Diseases of the skin and subcutaneous tissue:
121. allergic dermatoses (dermatitis, toxicodermatosis, eczema)
122. bacterial diseases of the skin and subcutaneous tissue, pyoderma
123. purulent inflammatory diseases of the fingers and hands
124. purulent inflammatory diseases in children and newborns
125. mycoses
126. burns and frostbites
127. parasitic skin diseases (scabies, lice infestation)
128. psoriasis
129. vesicular dermatosis
130. specific surgical infection (anaerobic clostridial and non-clostridial)

IX) Diseases of the musculoskeletal system and connective tissue:
131. ankylosing spondylitis
132. congenital and acquired malformations of the musculoskeletal system
133. acute rheumatic fever
134. dermatomyositis and polymyositis
135. neoplasms of the musculoskeletal system
136. osteoarthritis
137. osteomyelitis
138. gout
139. polytrauma
140. reactive arthritis
141. rheumatoid arthritis
142. systemic scleroderma
143. systemic lupus erythematosus
144. systemic vasculitis (polyarteritis nodosa, hemorrhagic vasculitis, hypersensitive vasculitis)
145. selected (typical) fractures of the shoulder, forearm, wrist, thigh, lower leg, foot
146. pelvic injury
147. spine injury

148. large joints injuries (hip joint, knee, ankle, elbow)
149. chronic rheumatic disease
150. juvenile rheumatoid arthritis

X) Diseases of the endocrine system, eating disorders, and metabolic disorders:

151. acromegaly and pituitary gigantism
152. hypothyroidism
153. hypotrophy, protein-energy malnutrition
154. hypopituitarism
155. thyrotoxicosis
156. endemic goiter
157. diabetes insipidus
158. nodular goiter, tumors of the thyroid gland
159. obesity
160. congenital adrenal cortex dysfunction
161. disorders of calcium-phosphorus metabolism, vitamin D metabolism
162. genetic syndromes with endocrine complications: Turner syndrome, Russell-Silver, Prader-Willi, Laron syndrome, etc.
163. thyroiditis
164. Itsenko–Cushing's disease and syndrome
165. chronic adrenal insufficiency
166. diabetes mellitus
167. hypoparathyroidism
168. hyperparathyroidism
169. adrenal tumors
170. organic (including congenital) hyperinsulinism
171. neuroendocrine tumors
172. pituitary tumors
173. premature puberty
174. hypogonadism
175. cryptorchidism
176. disorders of gender differentiation
177. Klinefelter syndrome
178. dwarfism in a child who was born small for his gestational age (SGA)

XI) Infectious and parasitic diseases:

179. bacterial food poisoning
180. erysipelas
181. botulism
182. viral hepatitis
183. varicella
184. congenital infections of the newborn
185. helminthiasis
186. herpesvirus diseases
187. influenza and other acute respiratory viral infections
188. diphtheria
189. infectious mononucleosis
190. candidiasis
191. pertussis
192. intestinal bacterial infections
193. intestinal viral infections
194. measles
195. tick-borne viral encephalitis
196. rubella
197. leptospirosis
198. malaria
199. meningococcal infection
200. highly dangerous virus infections
201. mumps
202. poliomyelitis
203. tetanus
204. protozoan infections
205. rickettsiosis
206. anthrax
207. rabies
208. scarlet fever
209. tuberculosis of different localization
210. Lyme disease
211. human immunodeficiency virus (HIV) disease
212. chlamydia infections
213. cholera
214. plague

- **sexually transmitted infections:**

215. gonococcal infection
216. syphilis

XII) Diseases of the female reproductive system:

complications of pregnancy:

217. multiple pregnancy
218. vomiting of pregnancy
219. pregnancy and extragenital pathology
220. fetal distress during pregnancy
221. fetal growth restriction
222. immune conflict during pregnancy
223. mole pregnancy
224. placenta previa
225. placental abruption
226. preterm birth and post-term pregnancy
227. ectopic pregnancy
228. preeclampsia and eclampsia
229. miscarriage

delivery and postpartum complications:

230. abnormal labor
231. pelvic abnormalities, including a clinically narrow pelvis
232. fetal distress during delivery
233. intrapartum and postpartum hemorrhage
234. abnormal fetal position and presentation
235. postpartum septic disease
236. injuries of the uterus and birth canal

gynecological diseases:

237. abnormal uterine bleeding
238. ovarian apoplexy
239. infertility
240. congenital malformations of the female genital tract
241. benign mammary dysplasia
242. benign and precancerous diseases of the female genital tract
243. endometriosis
244. inflammatory diseases of the female genital tract
245. malignant neoplasms of the female genital tract
246. mastitis
247. breast cancer

List 3 (Medical Emergency):

1. asphyxia (including neonatal)
2. hypertensive crisis
3. hypoglycemia (coma)
4. acute respiratory failure
5. acute urinary retention
6. acute adrenal insufficiency
7. acute kidney injury
8. acute liver failure
9. acute heart failure
10. acute poisoning, including with chemical warfare agents
11. acute psychosis
12. acute coronary syndrome
13. acute radiation and chemical damage, including in the field and in emergencies
14. acute cerebrovascular insufficiency
15. diabetic coma, incl. ketoacidotic, hyperosmolar, lactacidemic
16. electric injury
17. status epileptics
18. acute bleeding
19. acute blood loss syndrome, including in the field and in emergencies
20. cardiac arrest
21. collapse
22. disturbances of consciousness and coma
23. renal colic
24. biliary colic
25. acute anaphylactic reactions
26. acute heart rhythm disorders
27. cold injury, including in the field
28. thermal trauma, including in the field
29. venous and arterial thrombosis
30. seizure syndrome
31. drowning
32. strangulation asphyxia
33. normal birth
34. shocks
35. bites of snakes, insects, and animals
36. penetrating injuries, including during military operations
37. burns, including in the field
38. foreign bodies in the respiratory tract, gastrointestinal tract, ENT organs, and eyes

List 4 (Laboratory and Instrumental Studies)

1. pleural fluid analysis
2. ascitic fluid analysis
3. synovial fluid analysis
4. Zimnitsky urine test
5. Nechiporenko urine test
6. alpha-amylase activity in blood and urine, fecal elastase-1
7. blood proteins and blood protein fractions, C-reactive protein
8. blood glucose, glycated hemoglobin
9. oral glucose tolerance test
10. blood lipids and lipoproteins and their fractions
11. blood hormones
12. serum ferritin, iron, and copper
13. creatinine, blood and urine urea nitrogen, glomerular filtration rate
14. blood electrolytes
15. blood aminotransferases
16. total blood bilirubin and its fractions
17. coagulogram
18. blood uric acid
19. blood alkaline phosphatase
20. histomorphological examination of lymph node biopsy
21. histomorphological examination of parenchymal organ biopsy
22. histomorphological examination of mucous membrane biopsy
23. histomorphological examination of muscle and skin biopsy
24. histomorphological examination of the placenta
25. study of the indoor environment (indicators of microclimate, natural and artificial lighting, bacteriological and chemical air pollution)
26. respiratory function study
27. 12-lead ECG
28. bronchial endoscopy
29. gastrointestinal endoscopy
30. echocardiography and Doppler imaging
31. general stool test
32. complete blood count
33. common urine analysis
34. glucose and acetone in urine
35. general analysis of cerebrospinal fluid
36. general analysis of sternal punctate
37. general analysis of sputum
38. general blood immunological profile
39. serological reactions in infectious diseases
40. rapid diagnostic tests for viral diseases
41. amplification methods in infectious disease diagnosis (PCR, LLR)
42. serological reactions in infectious diseases
43. chemical and bacteriological studies of environment (air, water, soil)
44. microbiological study of biological fluids and secretions
45. radiation measurement (acoustic, vibration, ionizing), individual radiometry
46. methods of instrumental visualization of the thyroid gland
47. X-ray contrast angiography
48. methods of instrumental visualization of abdominal organs
49. methods of instrumental visualization of the thoracic cavity
50. methods of instrumental visualization of the genitourinary system
51. methods of instrumental imaging of the fetus
52. methods of instrumental visualization of the skull, spine, spinal cord, bones, and joints
53. methods of instrumental visualization of mammary glands
54. tuberculinodiagnosis
55. multiple-point fractional study of bile and pH test of the stomach and esophagus
56. chemical, organoleptic, bacteriological examination of food and drinking water
57. cervical cytology test
58. measurement of ergonomic indicators of workload and intensity of work

List 5 (Medical Procedures):

1. perform indirect cardiac massage
2. perform artificial respiration
3. perform defibrillation by means of a manual automatic cardioverter-defibrillator
4. register a standard 12-leads ECG
5. temporarily stop external bleeding
6. perform initial surgical debridement of wounds, dressing, removal of skin sutures, including in the field
7. apply bandages, including in the field
8. insert a nasogastric and orogastric tube
9. carry out immobilization for transportation
10. administer drugs (intravenous bolus and infusion, intraosseous administration), including in the field
11. provide peripheral venous access
12. measure blood pressure
13. restore airway patency
14. urethral catheterization with a soft probe
15. perform anterior nasal packing
16. conduct a clinical examination of the organ of vision and ENT organs
17. provide skin-to-skin contact for a newborn and early initiation of breastfeeding
18. perform digital rectal examination and examination using rectal speculum
19. perform finger prostate examination
20. perform clinical examination of mammary glands
21. perform a pleural puncture
22. perform a puncture of the abdominal cavity through the posterior fornix
23. define blood groups and rhesus status
24. perform blood components and blood substitutes transfusion
25. perform bimanual examination and speculum examination of a woman
26. perform pelvimetry;
27. perform external (Leopold's maneuver) and internal obstetric examination;
28. perform fetal heart auscultation
29. taking smears for bacterioscopic, bacteriological, and cytological examinations
30. palpate the thyroid gland
31. examine and evaluate the boy's external genitalia
32. assess the state of sexual development of children