THE ORDINANCE OF THE MINISTER OF SCIENCE AND HIGHER EDUCATION
OF 29 September 2023

amending the regulation on educational standards for the following programs: Medicine, Dentistry, Pharmacy, Nursing, Midwifery, Laboratory Diagnostics, Physiotherapy and Rescue

Based on Article. 68, par.3 point 1 from the Act of July 2018 on the Law on Higher Education (see Dziennik Ustaw - Official Journal of Laws, item 1668) it is constituted as follows:

§ 1. In the Ordinance of the Minister of Science and Higher Education of 26 July 2019 on the educational standards preparing to practice the profession of doctor, dentist, pharmacist, nurse, midwife, diagnostician, laboratory technician, physiotherapist and paramedic (Journal of Laws of 2021, item 755, and of 2022, items 157 and 1742), Appendix No. 1 and 2 to the Regulation shall be amended as set out in Appendixes No. 1 and 2 to this Regulation, respectively.

§ 2. The educational standard for the profession of doctor set out in Appendix No. 1 to the Regulation referred to in § 1, as amended by this Regulation, and the educational standard for the profession of dentist set out in Appendix No. 2 to the Regulation referred to in § 1, as amended by this Regulation, shall apply to degree programs in the field of medicine and in the field of medicine and dentistry respectively, as from the training cycle

§ 3. The regulation shall enter into force 14 days after its publication.

Appendix No.11

EDUCATIONAL STANDARD PREPARING THE PROFESSION OF A DOCTOR

I. METHOD OF THE ORGANIZATION OF EDUCATION

1. GENERAL REQUIREMENTS

1.1. The standard applies to education preparing to practice as a physician in the medical faculty, hereinafter referred to as "studies."

1.2. The studies are uniform master's studies.

1.3. The studies last 12 semesters.

1.4. The number of hours of classes, including internship, cannot be less than 5,700.

1.5. The number of ECTS points to complete the studies cannot be less than 360.

1.6. The medical field is assigned to the scientific discipline - medical science as the leading discipline.

1.7. The studies have a general academic profile.

2. CLASSES AND GROUPS OF CLASSES

2.1. The education process is carried out in the form of:

1) classes or groups of classes corresponding to individual issues from the scientific discipline to which the field of study is assigned (e.g. anatomy, microbiology, surgery, ophthalmology);
2) groups of integrated classes combining two or more issues from the scientific discipline to which the field of study is assigned (e.g. internal diseases and laboratory diagnostics, infectious diseases and microbiology);
3) multidisciplinary groups of classes devoted to specific issues (e.g. pain mechanism and treatment, autoimmune diseases).

2.2. The study program includes classes or groups of classes related to the academic activity conducted at the university in the scientific discipline to which the field of study is assigned, to which ECTS points have been assigned in the amount greater than 50% of the number of ECTS points necessary to complete the studies, and takes into account the participation of students in the classes preparing to conduct scientific activity or participating in this activity.

3. MINIMUM NUMBER OF HOURS OF ORGANIZED CLASSES AND ECTS CREDITS

Groups of classes within which detailed learning outcomes are achieved	Number of hours	Number of ECTS credits

A. Morphological Sciences	270	20
B. Scientific basis of medicine	465	35
C. Pre-clinical studies	525	40
D. Behavioral and social sciences with elements of professionalism	240	18
E. Non-surgical clinical sciences	1120	70
F. Clinical surgical sciences	940	55
G. Legal and organizational aspects of medicine	90	6
H. Practical clinical teaching (30 weeks) and examinations	900	60
I. Work placement (20 weeks)	600	20
Total	5150	324

3.1. The study program is structured in such a way that it is possible to assign to groups of classes a repeatable credit value expressed in ECTS.

3.2. During clinical science education (course groups E and F):

1) students are given direct access to patients, including outpatient patients, with acute and chronic diseases, which are included in the learning content assigned to classes or groups of classes;

2) At least 5% of the total number of teaching hours shall be conducted in simulated clinical settings.

3. 3. The university has at its disposal no fewer than 550 hours of classes (36 ECTS points), which can be carried out as activities supplementing knowledge, skills or social competences, however, the study program allows the student to choose classes to which ECTS points have been assigned in the amount of no less than 3% of the number of ECTS credits necessary to complete the studies.

3. 4. No more than half of the class hours for achieving learning outcomes in class D dedicated to teaching English. Additional hours of classes devoted to teaching English or another foreign language may be implemented within the hours at the university's disposal. If the total number of hours of classes in foreign languages exceeds 200, the university shall increase the total number of hours of classes in the study program by this surplus.

3. 5. Physical education classes are compulsory regarding full-time studies, with a duration of not less than 60 hours. These courses are not credited with ECTS credits.

3. 6. The number of ECTS points that can be obtained within the framework of education with the use of distance learning methods and techniques may not exceed 20% of the number of ECTS points necessary to complete the studies.

3.7. The total number of contact hours for the achievement of the learning outcomes for communication in class groups D, E and F is 120. These classes are conducted throughout the duration of the study.

3.8. Classes for the achievement of learning outcomes in communication skills shall be designed in such a way as to ensure that each student has the opportunity to perform and repeat the activities that enable them to achieve these outcomes, and for the teacher to observe and provide feedback to the student. The classes shall be conducted in a simulated setting, including simulated patients, or in a clinical setting.

3.9. Classes designed to achieve the learning outcomes of communication skills may be conducted in groups of students in at least two fields of study covered by the educational standards set out in the appendixes to the ordinance, as well as by implementing innovative methods of developing creativity and independent thinking.

4. PRACTICAL CLINICAL TEACHING

4.1. Practical clinical teaching includes classes aimed at achieving learning outcomes in class groups E, F and H.

4.2. Classes designed to achieve the learning outcomes in the skills categories in class groups E and F shall be conducted in the form of practicals

4.3. Classes designed to achieve learning outcomes in class group H serve to improve, in a clinical setting, effects of learning outcomes achieved in the skills category in class groups E and F, and they are conducted in the sixth year of studies in the form of practical, in the following number:

Specialty	**Number of hours**	**Number of ECT credits**
Internal diseases	240	16
Pediatrics	120	8
Surgery	120	8
Gynecology and Obstetrics	60	4
Psychiatry	60	4
Emergency medicine	60	4
Family medicine	60	4
Specialty chosen by the student	180	12

Total	900	60

The activities enabling the achievement of learning outcomes in the H class group can be carried out in simulated clinical conditions, but not exceeding 10% of the total hours for these classes.

4.4. The classes facilitating the achievement of learning outcomes in class group H are conducted in groups of no more than 5 students. In cases where implementation in such small groups is not possible, they may be conducted in groups of no more than 8 students.

5. PROFESSIONAL INTERNSHIP/ PLACEMENT

5.1. Professional internship includes the improvement of professional skills in the following number:

The scope of placement	**Number of hours**	**Number of ECTS credits**
Caring for the sick	120	4
Basic healthcare (family medicine)	90	3
Emergency assistance	30	1
Internal diseases	120	4
Intensive care	60	2
Pediatrics	60	2
Surgery	60	2
Gynecology and Obstetrics	60	2
Total	600	20

5.2. Professional internships are implemented during the summer holidays. Professional internships are used to achieve selected learning outcomes. The Professional internships program, the form and dates of their completion and the method of verification of the achieved learning outcomes are determined by the university.

6. INFRASTRUCTURE NECESSARY FOR EDUCATION

6.1. The education process takes place with the use of infrastructure enabling the achievement of learning outcomes, which includes, in particular, a dissecting room and a microscopic laboratory, and which enables classes in all clinical specialties. The classes are conducted based on the infrastructure of the university and the infrastructure of medical entities with which the universities have entered into agreements. Due to their specificity and the number of health services provided by them, they ensure students have the opportunity to achieve the learning outcomes specified in the study program.

6.2. Classes in the field of clinical sciences (class groups E and F) are conducted in medical facilities which, due to their specificity and the number of health services they provide, provide students with the opportunity to achieve learning outcomes in the field of clinical sciences.

6.3. Classes in the field of practical clinical teaching in the sixth year of studies (class group H) and professional internships take place in medical entities, especially in clinics and hospital departments, and may also take place in simulated clinical settings, but not exceeding 10% of the hours of these classes.

6.4. The medical entities where practical classes in clinical teaching (class group H) and professional internships take place include:

1) Medical entities providing healthcare services in the field of hospital treatment, especially hospitals whose specific nature allows for the achievement of learning outcomes;

2) Medical entities providing healthcare services in the field of specialized outpatient care or primary healthcare;

3) Units of the State Emergency Medical Services system;

4) Hospices.

II. TEACHING STAFF

Education aimed at achieving learning outcomes in groups of classes is conducted by academic teachers or other persons with professional or scientific competences and experience in the scope appropriate for the classes conducted, however, in class groups E and F, it is conducted by academic teachers or other persons, with scientific achievements, the right to practice the medical profession and the title of specialist or specialty in the field of medicine adequate to the conducted classes, or by persons with the right/license to practice as a doctor who completed the basic module during specialty training or completed the 1st year of specialist training in uniform specialties in the relevant field medicine, if they have obtained a positive opinion of the head of the specialty, as well as with the participation of other people with scientific achievements or clinical experience, to the extent appropriate to the classes.

Education enabling the achievement of learning outcomes in the area of communicating with patients, as well as collaboration and communication within a team, is conducted by academic teachers or other individuals who have completed studies with a curriculum specifying learning outcomes in medical communication, or have completed training in medical communication, or have at least five years of experience in teaching medical communication.

III. LEARNING OUTCOMES

1. GENERAL LEARNING OUTCOMES

1.1. In terms of knowledge, (indicated by letter W - Polish language term "wiedza"- W/ "knowledge"), the graduate knows and understands:

1) development, structure and functions of the human body in normal and pathological conditions;
2) symptoms and course of diseases;
3) diagnostic and therapeutic methods appropriate for specific disease conditions;
4) ethical, social and legal conditions for the performance of the medical profession and the principles of health promotion, and bases his/her knowledge on scientific evidence;
5) methods of conducting scientific research.

1.2. In terms of skills, (indicated by letter U- Polish language term "U"- / "skills"), the graduate is able to:

1) identify medical problems and prioritize medical procedures;
2) recognize life-threatening conditions requiring immediate medical intervention;
3) plan the diagnostic procedure and interpret its results;
4) implement appropriate and safe therapeutic procedures and predict its effects;
5) plan his/her own educational activity and constantly learns in order to update his/her knowledge;
6) inspire the learning process of others;
7) communicate with the patient and their family in an atmosphere of trust, taking into account the patient's needs and provide unfavorable information;
8) communicate with colleagues in the team and share knowledge;
9) critically evaluate the results of scientific research and justify the position accordingly.

1.3. In terms of social competences, the graduate is ready to:

1) establish and maintain a deep and respectful contact with the patient, as well as showing understanding for worldview and cultural differences;
2) prioritize the patient's well-being;

3) respect medical confidentiality and patient's rights;
4) take actions towards the patient based on ethical principles, with the awareness of social conditions and limitations resulting from the disease;
5) notice and recognize own limitations and self-assessment of deficits and educational needs;
6) promote pro-health behavior;
7) use of objective sources of information;
8) formulate conclusions from own measurements or observations;
9) implement the principles of professional collegiality and teamwork, including collaboration with representatives of other medical professions, also in a multicultural and multinational environment;
10) formulate opinions on various aspects of professional activity;
11) accept responsibility related to decisions made in the course of professional activity, including in terms of one's own safety and that of others.

2. SPECIFIC LEARNING OUTCOMES

A. MORPHOLOGICAL SCIENCES

In terms of knowledge, the graduate knows (indicated by letter W - Polish language term "wiedza"- W/ "knowledge") and understands:

A.W1. the structure of the human body in a topographical and functional approach, including the topographical relationships between individual organs, along with anatomical, histological, and embryological terminology;
A. W2. the basic cellular structures and their functional specializations;
A. W3. the microarchitecture of tissues, the extracellular matrix and organs;
A. W4. the development phases of the human embryo, the structure and the activity of fetal membranes and placenta as well as knows development phases of individual organs, and the impact of harmful factors on embryo and fetal development (teratogenic).

In terms of skills, (indicated by letter U- Polish language term "U"- / "skills"), the graduate is able to:

A. U1. use the optical microscope, including using the immersion;

A. U2. identify in images from the optical microscope histological structures corresponding to organs, tissues, cells and cellular structures and is able to produce a description and interpretation of their structures, as well interpret relations between the structure and the function;

A. U3. to clarify anatomical basics of the medical examination;

A. U4. make conclusions about relations between anatomical structures on the basis of diagnostic tests, in particular from the scope of radiology.

B. **SCIENTIFIC BASICS OF MEDICINE**

In terms of knowledge, (indicated by letter W - Polish language term "wiedza"- W/ "knowledge") the graduate knows and understands:

B. W1. the water-electrolyte economy in biological systems;

B. W2. the acid-base balances and the mechanism of action of buffers and their significance in the systemic homeostasis;

B. W3. the notions of: solubility, osmotic pressure, isotonia, colloidal solutions and Gibbs-Donnan balance;

B. W4. the laws of physics describing the flow of liquid and factors affecting the vascular resistance of the blood flow;

B. W5. natural and artificial radiation sources of ionizing and is able to describe the influence of the radiation ionizing with matter;

B. W6. physicochemical and molecular basics of the sensory organs functioning;

B. W7. physical basics of noninvasive methods of imaging;

B. W8. physical basics of chosen therapeutic techniques;

B. W9. the structure of lipids and polysaccharides and their functions in cellular and extracellular structures;

B. W10. the structures I-, II-, III- - and IV-grade proteins, the post-translational modifications and functional alteration of proteins and their significance;

B. W11. the functions of nucleotides in the cell; I-, II-structures of DNA and RNA, as well as the structure of chromatin;

B. W12. knows functions of the human genome, transcription and proteome, and essential methods applied in examining them, the processes of DNA replication, repair and recombination, the transcription and translation and degradation of DNA, RNA and proteins, and the concepts of regulation of the expression of genes;

B. W13. the basic catabolic and anabolic pathways, manners of the regulation and genetic and environmental factors affecting the functioning of biochemical pathways;

B. W 14. the basic methods used in laboratory diagnosis, including protein and nucleic acid electrophoresis;

B. W15. the metabolic changes in organs and the metabolic, biochemical and molecular basis of diseases and therapies;

B. W16. the ways of communication between cells and between the cell and the extracellular matrix and signal transacting pathways within the cell, as well as examples of disruption of these processes leading to cancer and other diseases;

B. W17. the processes: cell cycle, cell proliferation, differentiation and aging, apoptosis and necrosis, and their importance for the functioning of the organism;

B. W18. the functions and applications of stem cells in medicine;

B. W19. the basics of excitation and conduction in the nervous system and higher nervous system, as well as striated and smooth muscle physiology;

B.W 20 the function and regulation mechanisms of all organs and systems of the human body, as well as relations between them;

B. W21. processes occurring during the aging of the organism and changes in the functioning of organs related to aging;

B.W22. basic quantitative parameters describing the efficiency of individual systems and organs, including normal ranges and demographic factors influencing the value of these parameters;

B.W23. basic information technology and biostatistical tools used in medicine;

B.W24. basic methods of statistical analysis used in population and diagnostic studies;

B.W25. opportunities provided by contemporary telemedicine as a tool to support the work of a doctor;

B.W26. principles of conducting scientific research for the development of medicine.

In terms of skills, (indicated by letter U - Polish language term "U"- / "skills") the graduate is able to:

B. U1. utilize the knowledge of laws of physics to explain the impact of external factors such as temperature, acceleration, pressure, electromagnetic fields, and ionizing radiation on the human body.

B. U2. assess harmfulness of the doses of ionizing radiation on normal and pathologically altered tissues of the body and adhere to principles of the anti-radiation protection;

B.U3. calculate molar and percentage concentrations of compounds, as well as concentrations of substances in isoosmotic solutions, both single and multicomponent;

B.U4. calculate the solubility of inorganic compounds, determine the chemical basis of the solubility of organic compounds or its absence, and understand its practical significance for dietetics and therapy;

B.U5. determine the pH of a solution and understand the impact of pH changes on inorganic and organic compounds;

B.U6. predict the direction of biochemical processes based on the energy state of cells.

B.U7. perform simple functional tests assessing the functioning of the human body as a system of stable regulation (stress and exercise tests) and interpret numerical data related to basic physiological variables;

B.U8. use medical databases and appropriately interpret the information contained in them, essential for solving problems in basic and clinical sciences;

B.U9. select an appropriate statistical test, conduct basic statistical analyses, and use proper methods to present results;

B.U10. classify the methodology of scientific research, including distinguishing between experimental and observational studies along with their subtypes, rank them according to the credibility of the provided results, and accurately assess the strength of scientific evidence;

B.U11. plan and conduct scientific research, interpret their results, and formulate conclusions;

B.U12. use basic laboratory and molecular techniques.

C. PRECLINICAL SCIENCES

In terms of knowledge (indicated by letter W - Polish language term "wiedza"- W/ "knowledge") the graduate knows and understands:

C. W1. a correct karyotype of man, and different types of the sex determination;

C. W2. genetic causes of hereditary predispositions to cancer;

C. W3. the principles of inheriting the different number of features, inheriting quantitative features, independent inheriting features and extranuclear inheriting of genetic information;

C. W4. the genetic factors of blood types of man and the serologic incompatibility in the Rh system;

C. W5 the genetic determinants of the most common monogenic, polygenic, and multifactorial diseases, fundamental syndromes of chromosomal aberrations, syndrome caused by genomic rearrangements, polymorphisms, epigenetic changes, and post transcriptional modifications

. the genetic factors of blood types of man and the serologic incompatibility in the Rh system;

C. W6. factors affecting the primary and secondary genetic balance of the population;

C. W7. genetic determinants of congenital developmental defects and selected rare diseases, as well as the possibility of their prevention;

C W8. methods of genetic diagnostics and basic indications for their application;

C.W9. genetic mechanisms of drug-resistance through micro-organisms and cancerous cells, and their relation to the necessity of individualization of pharmacotherapy

C.W10. micro-organisms, including pathogenic ones and those constituting the human microbiome, as well as invasive forms or developmental stages of selected parasites relevant to humans;

C. W11. epidemiology of infecting with viruses, with bacteria and of infection with fungi and parasites including the geographical reach of their incidence;

C. W12. the pathogenesis and pathophysiology of infections and infestations and the effects of pathogenic agents, such as viruses, bacteria, fungi, prions and parasites, on the human body and population, including the ways in which they interact, the consequences of exposure to them, and the principles of prevention;

C.W13 the consequences of exposing the human body to chemical and physical factors, as well as principles of prevention.

C.W14 the etiology, pathogenesis, pathophysiology, transmission routes, forms, and prevention of iatrogenic infections;

C.W15. methods used in microbiological and parasitological diagnostics (indications, principles of execution, result interpretation);

C.W16. principles of diagnosing infectious, allergic, autoimmune, and neoplastic diseases, as well as blood disorders, based on the antigen-antibody reaction.

C.W17. principles of disinfection, sterilization, and aseptic procedures;

C.W18. specific and nonspecific mechanisms of humoral and cellular immunity;

C.W19. major tissue compatibility system;

C.W20. types of hypersensitivity reactions, immune deficiency disorders, and basis of immunomodulation;

C.W21. topics in the field of tumor immunology and immunological diseases, as well as principles of immunotherapy;

C.W22. genetic basis of donor and recipient selection and basics of transplantation immunology;

C.W23. clinical course of specific and nonspecific inflammations, as well as tissue and organ regeneration processes;

C.W24. the etiology, mechanisms, and consequences of hemodynamic disorders;

C.W25. organ pathology, macro- and microscopic pathomorphological changes, and clinical consequences, along with pathomorphological nomenclature;

C.W26. pathogenesis of diseases, including genetic and environmental determinants.

C.W27. pathomechanism and clinical forms of the most common diseases affecting individual systems and organs, metabolic diseases, and disorders in water-electrolyte, hormonal, and acid-base balance;

C.W28. specific groups of medicinal products, their mechanisms and effects, basic indications and contraindications, as well as fundamental pharmacokinetic and pharmacodynamic parameters;

C.W29. the physiological and pathological conditions affecting the absorption, metabolism, and elimination of drugs by the human body;

C.W30. the basic principles of pharmacotherapy, taking into account its effectiveness and safety, the need for treatment individualization, including considerations related to pharmacogenetics;

C.W31. major adverse effects of drugs, interactions, and the issue of polypharmacy;

C.W32. the problem of drug resistance, including multi-drug resistance, and the principles of rational antibiotic therapy;

C.W33. the potential and types of biological, cellular, genetic, and targeted therapies in specific diseases;

C.W34. the basic concepts of general toxicology;

C.W35. groups of drugs whose abuse can lead to poisoning;

C.W36. the symptoms of acute poisoning most commonly associated with selected drug groups, alcohols, other psychoactive substances, fungi, and heavy metals.

C.W37. the basic principles of diagnostic and therapeutic procedures in poisonings;

C.W38. the impact of oxidative stress on cells and its significance in the pathogenesis of diseases and in processes occurring during the aging of the organism;

C.W39. the consequences of vitamin and mineral deficiencies or their excess in the body;

C.W40. the causes and consequences of improper nutrition, including prolonged inadequate and excessive consumption, unbalanced diets, and disorders of digestion and absorption;

C.W41. the fundamentals of radiotherapy;

C.W42. molecular basis of cancer and issues related to tumor immunology;

C.W43. practical elements of molecular biology and immunology used in the diagnosis and therapy of oncological diseases.

In terms of skills, (indicated by letter U- Polish language term "U"- / "skills") the graduate is able to:

C.U1. construct and analyze pedigrees, as well as identify clinical and pedigree features suggesting the genetic basis of diseases;

C.U2. make decisions regarding the need for cytogenetic and molecular studies;

C.U3. interpret basic results of genetic tests, including karyotypes;

C.U4. determine genetic risk based on the pedigree and genetic test results in the case of chromosomal aberrations, genomic rearrangements, monogenic, and multifactorial diseases;

C.U5. recognize pathogens under a microscope;

C.U6. interpret results of microbiological tests;

C.U7. associate the images of tissue and organ damage with clinical symptoms of the disease, patient history, and results of laboratory tests to establish diagnoses in common adult and pediatric diseases;

C.U8. perform simple pharmacokinetic calculations;

C.U9. select appropriate drug doses to correct pathological phenomena in the human body and specific organs;

C.U10. design rational chemotherapy regimens for infections - both empirical and targeted;

C.U11. prepare formulations for selected medicinal substances and issue prescriptions, including e-prescriptions, in accordance with legal regulations;

C.U12. search for reliable information about medicinal products, with particular emphasis on the characteristics of medicinal products (SPCs) and databases.

C.U13. assess toxicological risks in specific age groups and in cases of liver and kidney failure, and prevent poisonings with medications.

D. BEHAVIORAL AND SOCIAL SCIENCES WITH ELEMENTS OF PROFESSIONALISM AND COMMUNICATION, TAKING INTO ACCOUNT THE IDEAS OF HUMANISM IN MEDICINE

In terms of knowledge, (indicated by letter W - Polish language term "wiedza"- W/ "knowledge"), the graduate knows and understands:

D.W1. the psycho-physical development of humans from birth to death, considering the specifics of physical, emotional, cognitive, and social development;

D.W2. concepts of health and illness, the impact of the social environment (family, work, social relationships), and socio-cultural factors (origin, social status, religion, nationality, and ethnic group) on the patient's health.

D.W3. human behaviors conducive to maintaining health and principles of motivating patients for health-promoting behaviors (Prochaska and DiClemente's Stages of Change Model, motivational interviewing);

D.W4. the concept of stress, including eustress and distress, and the impact of stress on the etiopathogenesis and course of somatic diseases and mental disorders, as well as coping mechanisms;

D.W5. social attitudes in regard to illness, disability, and old age, including the specific influence of stereotypes, prejudices, and discrimination;

D.W6. the concept of empathy and expressions of empathy through words and actions;

D.W7. the specificity and role of verbal communication (conscious construction of messages) and nonverbal communication (e.g., facial expressions, gestures, management of silence and space);

D.W8. psychosocial consequences of acute and chronic illness in children, including adolescents, and adults;

D.W9. psychosocial consequences of hospitalization for children, including adolescents, and adults in emergency situations and chronic illnesses;

D.W10. psychosocial consequences of illness for the patient's family (families with ill children, including adolescents, adults, and elderly individuals);

D.W11. the role of the patient's family in the process of illness (diagnosis, adaptation to illness, recovery) and coping strategies in difficult situations (disease progression, end-of-life processes, grief).

D.W12. problematic use of psychoactive substances and addiction, as well as behavioral addictions, methods of conducting brief interventions for individuals with problematic substance use, mechanisms of addiction development, goals and methods of treating addicted individuals, and effective preventive strategies. Psychosomatic disorders in individuals closely related to someone with addiction and therapeutic approaches;

D.W13. forms of violence, including domestic violence, social determinants of different forms of violence, and the role of a physician in recognizing violence, along with principles for dealing with suspected violence, including the "Blue Card" procedure;

D.W14. the concept of a norm and pathology in sexual behaviors;

D.W15. the concept of humanism in medicine, as well as key concepts, theories, and ethical principles serving as general frameworks for proper interpretation and analysis of moral and medical issues.

D.W16. patient rights and the concept of patient well-being;

D.W17. the philosophy of palliative care and its significance in the context of caring for patients at all stages of serious illness and ensuring a dignified death;

D.W18. the history of medicine, features of modern medicine, and the most important discoveries and achievements of leading representatives of Polish and global medicine;

D.W19. the basics of evidence-based medicine;

D.W20. the concepts of patient safety and safety culture, including their organizational, communication, and managerial aspects.

In terms of skills, (indicated by letter U- Polish language term “U”- / “skills”), the graduate is able to:

D.U1. adhere to ethical standards in professional actions, including planning and conducting therapeutic processes in accordance with ethical values and the idea of humanism in medicine;

D.U2. recognize the ethical dimension of medical decisions and distinguish factual aspects from normative ones;

D.U3. adhere to patient rights;

D.U4. demonstrate responsibility for enhancing their qualifications and transferring knowledge to others;

D.U5. critically analyze medical literature, including in English, and draw conclusions;

D.U6. communicate with patients in one of the foreign languages at the B2+ level of the Common European Framework of Reference for Languages.

D.U7. develop and improve self-awareness, the ability for self-reflection, self-care, and engage in discussions with others about one's own communication and behavior.

D.U8. recognize one's own emotions and manage them in relationships with others to effectively carry out work despite personal emotional reactions.

D.U9. describe and critically evaluate one's own behavior and communication style, considering the possibility of alternative actions.

D.U10. appropriately use open and closed-ended questions, paraphrasing, clarification, internal and concluding summaries, signaling, active listening (e.g., picking up and recognizing signals from the interlocutor, verbal and nonverbal techniques), and facilitation (encouraging the interlocutor to express themselves) according to the situation.

D.U11. adjust verbal communication to the patient's needs by expressing oneself in an understandable manner and avoiding medical jargon.

D.U12. recognize and analyze difficult situations and challenges related to communication, including crying, strong emotions, anxiety, interruptions, troublesome and sensitive issues, silence, withdrawal, aggressive and demanding behaviors, and cope with them in a constructive manner.

D.U13. establish contact with the patient and accompanying person to build a proper relationship (e.g., 4 Habits Model: Invest in the beginning, Demonstrate empathy, Elicit the patient’s perspective, Invest in the end).

D.U14. look at the situation from the patient's perspective, build an appropriate context for the conversation, use elicitation methods, and incorporate it into verbal communication.

E. NON-SURGICAL CLINICAL SCIENCES

In terms of knowledge, the graduate knows and understands:

E.W1. principles of breastfeeding, nutrition of a healthy child, prevention of obesity, and dietary modifications due to diseases;

E.W2. principles of preventing diseases in children, including screening examinations, comprehensive examinations, and vaccinations;

E.W3. environmental and epidemiological determinants, causes, symptoms, principles of diagnosis, and therapeutic approaches for the most common diseases in children and their complications:

1) rickets, tetanus, water-electrolyte and acid-base balance disorders;

2) heart defects, myocarditis, endocarditis and pericarditis, cardiomyopathy, cardiac arhythmias, heart failure, arterial hypertension, pulmonary hypertension, fainting;

3) respiratory system diseases and allergies, including congenital respiratory system defects, bronchiectasis, respiratory infections, tuberculosis, cystic fibrosis, asthma, allergic rhinitis, urticaria, atopic dermatitis, anaphylactic shock, angioedema.

4) anemias, bleeding disorders, bone marrow failure states, childhood cancers, including solid tumors typical for childhood, primary and secondary immunodeficiency disorders;

5) acute and chronic abdominal pain, vomiting, diarrhea, constipation, gastrointestinal bleeding, peptic ulcer disease, inflammatory bowel diseases, pancreatic diseases, cholestasis, liver diseases, food allergies, congenital gastrointestinal tract defects;

6) acute kidney injury, chronic kidney disease, urinary tract infections, voiding disorders, congenital urinary tract defects, vesicoureteral reflux, kidney stones, glomerular diseases, tubulointerstitial diseases (tubulopathies, tubular acidosis), genetically conditioned kidney diseases, nephropathic hypertension;

7) growth disorders, thyroid and parathyroid diseases, adrenal diseases, diabetes, obesity, puberty disorders, gonadal dysfunction;

8) cerebral palsy, brain and meninges inflammations, seizures, epilepsy;

9) most common infectious diseases in childhood;

10) systemic connective tissue diseases, including juvenile idiopathic arthritis, systemic lupus erythematosus, dermatomyositis, systemic vasculitis, and other causes of bone and joint pain (non-inflammatory, infectious, and reactive joint inflammations, juvenile spondyloarthropathies).

E.W4. issues related to maltreated and sexually abused children, and principles of intervention for such patients;

E.W5. topics related to intellectual disabilities, behavioral disorders, psychoses, addictions, autism spectrum disorders, eating and elimination disorders in children;

E.W6. basic methods of fetal diagnosis and therapy;

E.W7. environmental and epidemiological determinants, causes, symptoms, principles of diagnosis, and therapeutic approaches for the most common internal diseases in adults and their complications:

1) cardiovascular diseases, including ischemic heart disease, heart defects, diseases of the endocardium, myocardium, and pericardium, heart failure (acute and chronic), diseases of arterial and venous vessels, arterial hypertension (primary and secondary), pulmonary hypertension;

2) respiratory system diseases, including diseases of the respiratory tract, chronic obstructive pulmonary disease, asthma, bronchiectasis, cystic fibrosis, respiratory infections, tuberculosis, interstitial lung diseases, pleura, mediastinum, obstructive and central sleep apnea, respiratory failure (acute and chronic), respiratory system cancers;

3) gastrointestinal diseases, including diseases of the oral cavity, esophagus, stomach, duodenum, intestines, pancreas, liver, biliary tract, gallbladder, gastrointestinal cancers;

4) endocrine system diseases, including diseases of the hypothalamus and pituitary, thyroid, parathyroid, adrenal cortex and medulla, ovaries and testes, neuroendocrine tumors, multiple glandular syndromes, various types of diabetes, metabolic syndrome, obesity, dyslipidemia, and hypoglycemia, ovarian, testicular, and thyroid cancers, neuroendocrine tumors;

5) kidney and urinary tract diseases, including acute kidney injury and chronic kidney disease in all stages and their complications, glomerular diseases (primary and secondary, including diabetic nephropathy and

systemic diseases) and interstitial kidney diseases, nephropathic hypertension, kidney cysts, kidney stones, urinary tract infections (upper and lower tract), kidney diseases during pregnancy, urinary system cancers – kidney, bladder, prostate cancers.

6) diseases of the hematopoietic system, including bone marrow aplasia, anemias, granulocytopenia and agranulocytosis, thrombocytopenia, acute and chronic leukemias, myelomas, myeloproliferative and lymphoproliferative disorders, myelodysplastic syndromes, bleeding disorders, thrombophilia, blood disorders in diseases of other organs;

7) rheumatic diseases, including systemic connective tissue diseases (rheumatoid arthritis, early arthritis, systemic lupus erythematosus, Sjögren's syndrome, sarcoidosis, systemic sclerosis, idiopathic inflammatory myopathies), spondyloarthropathies, crystalopathies, nodular erythema, infectious arthritis, vasculitides, and non-inflammatory joint and bone diseases (degenerative diseases, soft tissue rheumatism, osteoporosis, fibromyalgia), soft tissue and bone sarcomas.

8) allergic diseases, including anaphylaxis and anaphylactic shock, as well as angioedema;

9) disorders of water-electrolyte balance and acid-base balance (dehydration, overhydration, electrolyte imbalances, acidosis, and alkalosis);

E.W8. principles of pharmacotherapy in patients with renal failure and renal replacement therapy;

E.W9. principles of nutritional treatment and fluid therapy in various pathological conditions;

E.W10. the process and symptoms of aging, as well as the principles of comprehensive geriatric assessment and interdisciplinary care for the elderly;

E.W11. differences in clinical symptoms, diagnosis, and treatment of the most common diseases in the elderly;

E.W12. hazards associated with the hospitalization of elderly individuals;

E.W13. basic principles of organizing care for the elderly and the burden on the caregiver of an elderly person;

E.W14. types of vascular access and their application, especially in oncology;

E.W15. basic syndromes of neurological symptoms.

E.W16. environmental and epidemiological factors, causes, symptoms, diagnostic principles, and therapeutic procedures for the most common neurological diseases and their complications:

1) headaches, including migraines, tension headaches, headache syndromes, and trigeminal neuralgia;

2) cerebrovascular diseases, particularly stroke;

3) epilepsy;

4) infections of the nervous system, especially meningitis, Lyme disease, herpes simplex encephalitis, and neurotransmitter diseases;

5) dementia, especially Alzheimer's disease, frontotemporal dementia, vascular dementia, and other dementing syndromes;

6) basal ganglia diseases, especially Parkinson's disease;

7) demyelinating diseases, especially multiple sclerosis;

8) neuromuscular diseases, especially amyotrophic lateral sclerosis, sciatica, compressive neuropathies;

9) traumatic brain injuries, especially concussions;

10) tumors.

E.W17. general symptomatology of mental disorders and principles of their classification according to major classification systems;

E.W18. environmental and epidemiological conditions, causes, symptoms, diagnostic principles, and therapeutic procedures for the most common psychiatric disorders and their complications:

1) schizophrenia;

2) affective disorders;

3) neurotic and adaptive disorders;

4) eating disorders;

5) substance-related disorders;

6) sleep disorders;

7) dementia;

8) personality disorders;

E.W19. issues related to suicidal behaviors;

E.W20. specifics of mental disorders and their treatment in children, including adolescents, and the elderly;

E.W21. symptoms of mental disorders in the course of somatic diseases, their impact on the course of the underlying disease, prognosis, and principles of treatment;

E.W22. issues related to human sexuality and basic disorders associated with it;

E.W23. legal regulations concerning mental health protection, with particular emphasis on the admission to psychiatric hospitals;

E.W24. oncology issues, including:

1) genetic, environmental, and epidemiological conditions, causes, symptoms, diagnostic principles, and therapeutic procedures for the most common cancers and their complications;

2) most common paraneoplastic syndromes and their clinical symptoms;

3) basics of early cancer detection, principles of screening tests, and preventive actions in oncology;

4) possibilities and limitations of modern cancer treatment (surgical methods, radiotherapy, and systemic methods, including immunotherapy), indications for cell and gene therapies, and targeted and personalized treatment;

5) early and late complications of oncological treatment;

6) the role of supportive treatment, including nutrition.

7) principles of organizing care for oncology patients, including genetic counseling and multidisciplinary care;

8) practical aspects of statistics in oncology, including principles of interpreting results from clinical studies;

9) key scales and classifications used in oncology;

10) principles of conducting focused physical examinations in adults, specifically in the areas of the breast and prostate gland;

11) principles of planning diagnostic, therapeutic, and preventive procedures in cancer treatment based on examination results and provided medical documentation;

E.W25. principles of qualifying for palliative care and therapeutic procedures in the most common issues of palliative medicine, including:

1) symptomatic treatment of the most common somatic symptoms;

2) management of cancer-related cachexia and prevention and treatment of pressure ulcers;

3) handling common emergencies in palliative medicine;

E.W26. principles of palliative care applied to a patient experiencing suffering due to a serious illness, including in a terminal state;

E.W27. classification of pain (acute and chronic or nociceptive, neuropathic, and nociplastic) and its causes, pain assessment tools, and principles of pharmacological and non-pharmacological pain management.

E.W28. the concept of disability;

E.W29. the role of medical rehabilitation and the methods used in it;

E.W30. indications for medical rehabilitation in the most common diseases;

E.W31. basic issues of prevention and principles of action in the case of occupational exposure to dangerous and harmful factors;

E.W32. principles of action in case of suspicion and detection of infectious diseases;

E.W33. environmental and epidemiological determinants, causes, symptoms, principles of diagnosis, therapeutic, and preventive procedures for the most common infectious diseases and their complications:

1) bacterial diseases, including streptococcal, staphylococcal, pneumococcal, and meningococcal infections, pertussis, tuberculosis, Lyme disease, and gastrointestinal infections;

2) viral diseases, including respiratory and gastrointestinal infections, viral hepatitis, infections with Herpesviridae, human immunodeficiency virus, and neurotropic viruses;

3) parasitic diseases, including giardiasis, amoebiasis, toxoplasmosis, malaria, toxocariasis, filariasis, ascariasis, tapeworm infections, and pinworm infections;

4) fungal infections, including candidiasis, aspergillosis, and pneumocystosis;

5) hospital-acquired infections;

E.W34. principles of action in the case of exposure to potentially infectious material;

E.W35. environmental and epidemiological determinants, causes, symptoms, principles of diagnosis, and therapeutic procedures for the most common dermatological and sexually transmitted diseases;

E.W36. causes, symptoms, principles of diagnosis, and therapeutic procedures for the most common genetically determined diseases in children and adults;

E.W37. environmental and epidemiological determinants, causes, symptoms, principles of diagnosis, and therapeutic procedures for the most common diseases in family medicine practice;

E.W38. principles of health-promoting behaviors, basics of prevention and early detection of common lifestyle diseases, and principles of screening tests for these diseases;

E.W39. types of biological materials used in laboratory diagnostics and principles of specimen collection;

E.W40. possibilities and limitations of laboratory tests;

E.W41. indications for implementing monitored therapy;

E.W42. indications for the use of blood components and principles of their administration.

In terms of skills, (indicated by letter U- Polish language term "U"- / "skills") the graduate is able to:

E.U1. conduct an interview with adults, including older individuals, utilizing skills related to the content, process, and perception of communication, taking into account both the biomedical perspective and the patient's perspective;

E.U2. conduct an interview with a child and their caregivers, utilizing skills related to the content, process, and perception of communication, considering both the biomedical perspective and the patient's perspective;

E.U3. collect medical history in a situation of health or life-threatening conditions using the SAMPLE acronym (S - Symptoms, A - Allergies, M - Medications, P - Past medical history, L - Last meal, E - Events prior to injury/illness);

E.U4. perform a focused physical examination of an adult, including breast and prostate examinations;

E.U5. conduct a comprehensive and targeted physical examination of adults adapted to a specific clinical situation, including examinations:

1) general internal medicine;
2) neurological;
3) gynecological;
4) musculoskeletal system;
5) ophthalmic;
6) otolaryngological;
7) geriatric;

E.U6. conduct a comprehensive and targeted physical examination of a child from the neonatal period to adolescence adapted to a specific clinical situation, including:

1) general pediatrics;
2) neurological;
3) musculoskeletal system;
4) ophthalmic;
5) otolaryngological;

E.U7. conduct a psychiatric examination of the patient and assess their mental state;

E.U8. conduct comprehensive health examinations, including compiling anthropometric measurements and blood pressure readings on centile charts and assessing the degree of maturation;

E.U9. recognize the most common symptoms of illness in adults, apply diagnostic tests and interpret their results, conduct a differential diagnosis, implement therapy, monitor treatment effects, and assess indications for specialist consultation, especially in cases of symptoms such as:

1) fever;
2) fatigue;
3) loss of appetite;
4) weight loss;
5) shock;
6) cardiac arrest;
7) impaired consciousness, including fainting;
8) edema;
9) rash;
10) cough and expectoration;
11) hemoptysis;
12) shortness of breath;
13) nasal and ear discharge;
14) chest pain;
15) palpitations;
16) cyanosis;
17) nausea and vomiting;
18) swallowing disorders;
19) abdominal pain;
20) presence of blood in the stool;
21) constipation and diarrhea;
22) jaundice;
23) bloating and resistance in the abdominal cavity;
24) anemia;

25) lymphadenopathy;

26) urination disorders;

27) hematuria and proteinuria;

28) menstrual disorders;

29) decreased mood and anxiety states;

30) memory and cognitive function disorders;

31) headache;

32) dizziness;

33) paralysis;

34) seizures;

35) back pain;

36) joint pain;

37) injury or burn;

38) dehydration and overhydration;

E.U10. recognize the most common symptoms of illness in children, apply diagnostic tests, interpret their results, conduct a differential diagnosis, implement therapy, monitor treatment effects, and assess the need for specialist consultation, particularly in the case of symptoms such as:

1) fever;

2) cough and expectoration;

3) shortness of breath;

4) nasal and ear discharge;

5) urination disorders;

6) rash;

7) anemia;

8) eating disorders;

9) growth disorders;

10) seizures and consciousness disorders;

11) palpitations;

12) fainting;

13) bone and joint pain;

14) edema;

15) lymphadenopathy;

16) abdominal pain;

17) constipation and diarrhea;

18) presence of blood in the stool;

19) dehydration;

20) jaundice.

21) cyanosis;

22) headache;

23) red eye syndrome;

E.U11. recognize the symptoms of risky and harmful alcohol use, problematic use of other psychoactive substances, symptoms of substance addiction, and behavioral addictions. Propose appropriate therapeutic and medical interventions.

E.U12. recognize conditions requiring treatment in a hospital setting.

E.U13. qualify patients for preventive vaccinations.

E.U14. perform medical procedures, including:

1) measurement and assessment of vital signs (temperature, pulse, blood pressure) and monitoring using a cardiac monitor and pulse oximeter;

2) various forms of inhalation therapy and selection of an inhaler based on the patient's clinical condition;

3) peak expiratory flow measurement;

4) non-invasive oxygen therapy;

5) non-instrumental and instrumental airway clearance;

6) intravenous, intramuscular, and subcutaneous administration of medication;

7) collection and securing of blood for laboratory tests, including microbiological tests;

8) arterial and arterialized capillary blood sampling;

9) collection of swabs for microbiological and cytological examinations;

10) catheterization of the urinary bladder in both women and men;

11) nasogastric tube insertion;

12) rectal enema;

13) standard resting electrocardiogram and interpretation of its results;

14) defibrillation, electrical cardioversion, and external electrical pacing;

15) strip tests, including glucose measurement using a glucometer;

16) pleural procedures: puncture and drainage of a pneumothorax;

17) anterior nasal packing;

18) FAST (Focused Assessment with Sonography in Trauma) or its equivalent protocol for ultrasound examination in life-threatening conditions, and interpretation of its results;

E.U15. apply personal protective measures appropriate to the clinical situation;

E.U16. confirm a patient's death;

E.U17. participate in the process of a patient's dignified dying, utilizing the potential of palliative care;

E.U18. maintain the medical documentation of a patient, including electronic records, in accordance with legal regulations;

E.U19. plan diagnostic, therapeutic, and preventive procedures in the treatment of cancers based on examination results and provided medical documentation;

E.U20. provide healthcare using available ICT systems or communication systems used in healthcare;

E.U21. conduct health education for the patient, including nutrition education tailored to individual needs;

E.U22. apply rational antibiotic therapy depending on the patient's clinical condition;

E.U23. engage in conversation with the patient using a conversation scheme (initiating the conversation, gathering information, explaining and planning, concluding the conversation), giving structure to the conversation, and shaping relationships with the patient using a selected model (e.g., Calgary-Cambridge guidelines, Segue, Kalamazoo Consensus, Maastricht Maas Global), including the use of electronic communication means;

E.U24. collect information from the patient regarding suicidal thoughts when justified;

E.U25. deliver information to the patient, adjusting the quantity and content to the patient's needs and capabilities, and complement verbal information with models and written information, including charts and instructions, using them appropriately;

E.U26. collaboratively make diagnostic-therapeutic decisions with the patient (assess the level of patient engagement, their needs, and capabilities in this regard, encourage the patient to actively participate in the decision-making process, discuss the advantages, disadvantages, expected results, and consequences arising from decisions) and obtain the patient's informed consent;

E.U27. communicate with patients from economically or socially vulnerable groups, respecting their dignity;

E.U28. identify social determinants of health, indicators of unhealthy and self-destructive behaviors, discuss them with the patient, and make a note in the medical documentation;

E.U29. identify possible indicators of violence, including family violence, gather information to verify whether there is a risk that the patient is experiencing violence, make a note in the medical documentation, and initiate the "Blue Card" procedure;

E.U30. apply the principles of providing feedback (constructive, non-judgmental, descriptive) within the framework of teamwork;

E.U31. acknowledge, explain, and analyze one's own role and scope of responsibility in the team, recognizing one's role as a physician in the team;

E.U32. obtain information from team members with respect for their diverse opinions and specialized competencies, incorporating this information into the patient's diagnostic-therapeutic plan;

E.U33. discuss the patient's situation within the team, excluding subjective judgments, with respect for the patient's dignity;

E.U34. apply the following protocols (e.g., during the transfer of patient care, delegation of patient consultation, or provision of consultation):

1) ATMIST (A (Age), T (Time of injury), M (Mechanism of injury), I (Injury suspected), S (Symptoms/Signs), T (Treatment/Time));

2) RSVP/ISBAR (R (Reason), S (Story), V (Vital signs), P (Plan)/I (Introduction), S (Situation), B (Background), A (Assessment), R (Recommendation)).

F. CLINICAL PROCEDURAL SCIENCES

In terms of knowledge, the graduate knows and understands:

F.W1. causes, symptoms, principles of diagnosis, and therapeutic procedures for the most common diseases requiring procedural treatment in adults:

1) acute and chronic diseases of the abdominal cavity;
2) diseases of the chest;
3) diseases of the extremities, head, and neck;
4) bone fractures and organ injuries;
5) tumors;

F.W2. causes, symptoms, principles of diagnosis, and therapeutic procedures for the most common congenital defects and diseases requiring procedural treatment in children;

F.W3. basic classical and minimally invasive procedural techniques;

F.W4. principles of qualification for basic surgical and invasive procedures, diagnostic-therapeutic procedures, and the most common complications;

F.W5. most common complications of modern oncological treatment;

F.W6. principles of perioperative safety, patient preparation for surgery, administration of general and local anesthesia, and controlled sedation;

F.W7. principles of postoperative treatment with pain therapy and postoperative monitoring;

F.W8. indications and principles of intensive therapy application;

F.W9. guidelines for cardiopulmonary resuscitation in newborns, children, and adults;

F.W10. most common life-threatening conditions in children and adults, and principles of management in these conditions, particularly in:

1) sepsis;
2) shock;
3) hemorrhages;
4) water-electrolyte and acid-base balance disorders;

5) poisonings;

6) burns, hypo- and hyperthermia;

7) other acute conditions of origin:

a) cardiovascular,

b) respiratory,

c) neurological,

d) renal,

e) oncological and hematological,

f) diabetological and endocrinological,

g) psychiatric,

h) ophthalmological,

i) otolaryngological,

j) gynecological, obstetric, and urological;

F.W11. principles of managing suspected cases of sexual violence;

F.W12. principles of operation of the integrated State Emergency Medical Services system;

F.W13. invasive methods of pain treatment;

F.W14. principles of dealing with long-term central venous catheters;

F.W15. women's reproductive functions, disorders associated with them, and diagnostic and therapeutic procedures, particularly regarding:

1) menstrual cycle and its disorders;

2) pregnancy;

3) physiological labor, pathological labor, and postpartum period;

4) inflammations and tumors within the reproductive organs;

5) birth control regulation and reproductive assistance;

6) menopause;

7) basic diagnostic methods and gynecological procedures;

F.W16. Male reproductive functions, associated disorders, and diagnostic and therapeutic procedures;

F.W17. Contemporary issues related to imaging studies, particularly:

1) Radiological symptomatology of basic diseases;

2) Instrumental methods and imaging techniques used in medical procedures;

3) Indications, contraindications, and patient preparation for specific types of imaging studies, as well as contraindications for the use of contrasting agents;

F.W18. Topics in the field of eye diseases, particularly:

1) Causes, symptoms, principles of diagnosis, and therapeutic procedures for the most common eye diseases;

2) ophthalmic complications of systemic diseases along with their symptoms and management methods in these cases;

3) surgical procedures in individual eye diseases;

4) groups of systemically used drugs associated with ophthalmic complications, contraindications, and their mechanisms of action;

F.W19. topics in the field of otolaryngology, phoniatrics, and audiology, particularly:

1) causes, symptoms, principles of diagnosis, and therapeutic procedures for diseases of the ear, nose, paranasal sinuses, oral cavity, pharynx, and larynx;

2) diseases of the facial nerve and selected neck structures;

3) diagnostic and therapeutic principles in mechanical injuries to the ear, nose, larynx, and esophagus;

4) diagnostic and therapeutic principles in hearing, voice, and speech disorders;

F.W20. topics in neurology and neurosurgery, particularly the causes, symptoms, diagnosis, and therapeutic procedures for the most common diseases of the central nervous system in the area of:

1) brain edema and its consequences, with particular emphasis on acute conditions;

2) other forms of intracranial tightness and their consequences;

3) traumatic brain injuries;

4) vascular abnormalities of the central nervous system;

5) tumors of the central nervous system;

6) spinal and spinal cord diseases.

F.W21. principles of promoting tissue and cell donation, indications for organ transplantation, blood vessels, hematopoietic tissues, treatment complications, and long-term care principles after transplantation;

F.W22. conditions in which the patient’s life expectancy, functional status, or preferences limit compliance with guidelines specified for a given disease;

F.W23. principles of raising suspicion and recognizing brain death.

In terms of skills, the graduate is able to:

F.U1. surgically wash hands, put on sterile gloves, dress for surgery or a procedure requiring sterility, prepare the surgical field according to aseptic principles, and participate in surgical procedures;

F.U2. apply and change a sterile dressing;

F.U3. assess and dress a simple wound, including local anesthesia (surface, infiltration), apply and remove surgical sutures, apply and change a sterile surgical dressing;

F.U4. recognize the most common life-threatening conditions, including using various imaging techniques;

F.U5. identify the most common types of fractures based on radiological examination, especially of long bones;

F.U6. immobilize a limb temporarily, including selecting the type of immobilization in typical clinical situations, and check the correctness of limb perfusion after applying an immobilizing dressing;

F.U7. immobilize the cervical and thoracolumbar spine after injury;

F.U8. control external bleeding;

F.U9. perform basic life support (BLS) procedures for newborns and children in accordance with the guidelines of the European Resuscitation Council (ERC).

F.U10. conduct advanced resuscitation procedures for newborns (Newborn Life Support, NLS) and children (Pediatric Advanced Life Support, PALS) according to ERC guidelines;

F.U11. perform basic life support (BLS) procedures in adults, including using an automated external defibrillator, following ERC guidelines;

F.U12. conduct advanced life support (ALS) procedures in adults according to ERC guidelines;

F.U13. apply appropriate medical procedures in cases of pregnancy and physiological childbirth according to perinatal care standards;

F.U14. recognize common symptoms indicating abnormal course of pregnancy and childbirth, apply and interpret diagnostic tests, conduct differential diagnosis, implement therapy, monitor treatment effects, and assess indications for specialist consultation, especially in cases of abdominal pain, uterine contractions, vaginal bleeding, abnormal heart rate, fetal movement, and hypertension;

F.U15. detect and interpret fetal heart activity;

F.U16. recognize the onset of labor and signs of abnormal labor progression;

F.U17. assist in physiological childbirth;

F.U18. apply appropriate medical procedures in cases of abnormal bleeding from the genital tract, absence of menstruation, pelvic pain (pelvic inflammatory disease, ectopic pregnancy), inflammation of the vagina and vulva, sexually transmitted diseases;

F.U19. apply appropriate medical procedures in birth control;

F.U20. recognize ophthalmological conditions requiring urgent specialist assistance and provide pre-hospital care in cases of physical and chemical eye injuries;

F.U21. convey unfavorable news using a selected protocol, such as:

1) SPIKES: S (Setting – appropriate environment), P (Perception – understanding the interlocutor's knowledge), I (Invitation/Information – inviting conversation / informing), K (Knowledge – delivering unfavorable information), E (Emotions and empathy – emotions and empathy), S (Strategy and summary – action plan and summary),
2) EMPATHY: E (Emotions), M (Place), P (Patient's perspective), A (Adequate language), T (Message content), I (Additional information), A (Annotation in documentation),
3) ABCDE: A (Advance preparation – preparing for the conversation), B (Build therapeutic environment – establishing good contact with the family), C (Communicate well – conveying bad news, considering

communication principles), D (Dealing with reactions – dealing with difficult emotions), E (Encourage and validate emotions – the right to express emotions, redirecting them, and responding appropriately, aiming to conclude the meeting) – including supporting the family in the patient's dignified dying process and informing the family about the patient's death;

F.U22. obtain information from team members with respect for their diverse opinions and specialized competencies, incorporate this information into the patient's diagnostic and therapeutic plan, and apply ATMIST, RSVP/ISBAR protocols.

G. LEGAL AND ORGANIZATIONAL ASPECTS OF MEDICINE

In terms of knowledge, the graduate knows and understands:

G.W1. methods for assessing the health status of individuals and populations, metrics, and principles for monitoring population health, classification systems for diseases and medical procedures;

G.W2. determinants of diseases, methods of identifying and studying risk factors for diseases, advantages and disadvantages of epidemiological studies, and principles of causation inference in medicine;

G.W3. epidemiology of infectious diseases, including those related to healthcare, and non-infectious diseases, types and methods of prevention at various stages of the natural history of a disease, as well as the role and principles of epidemiological surveillance;

G.W4. the concept and functions of public health, the concept, tasks, and methods of health promotion, the concept of quality in healthcare and influencing factors, the structure and organization of the healthcare system at the national and global levels, and the impact of economic conditions on healthcare capabilities;

G.W5. legal regulations concerning patient rights and the Patient Rights Ombudsman, as well as relevant legal regulations in the field of labor law, the fundamentals of practicing the medical profession, and the functioning of medical self-government;

G.W6. legal regulations related to the organization and financing of the healthcare system, the provision of healthcare services funded by public funds, and the principles of organizing healthcare entities, the functioning of tools and services in information and communication in healthcare (e-health).

G.W7. legal obligations of a physician regarding the determination of a patient's death;

G.W8. legal regulations concerning medical experiments and conducting scientific research involving humans;

G.W9. legal regulations regarding transplants, artificial procreation, abortion, aesthetic procedures, palliative care, persistent therapy, mental illnesses, and infectious diseases;

G.W10. legal regulations regarding the duties of a physician in cases of suspected domestic violence;

G.W11. fundamental regulations in the field of pharmaceutical law, including principles of trading medicinal and medical products, writing prescriptions, including e-prescriptions, drug reimbursement, collaboration between a physician and a pharmacist, reporting adverse drug reactions;

G.W12. legal regulations concerning medical confidentiality, criminal, civil, and professional liability of a physician, principles of creating, storing, and sharing medical documentation, including e-documentation, and protection of personal data;

G.W13. concept of sudden death and sudden cardiac death, as well as differences between injury and trauma;

G.W14. legal foundations and principles for a physician's actions during the examination of corpses at the site of their discovery and forensic autopsy;

G.W15. principles of forensic diagnostics and expert opinions in cases involving infanticide and the reconstruction of circumstances in a traffic accident;

G.W16. principles of preparing expert opinions;

G.W17. principles of forensic assessment regarding the capacity to participate in legal proceedings, biological consequences, and impairment of health;

G.W18. concept and typology of adverse events, including medical errors and incidents, their most common causes, effects, prevention principles, and expert opinions in such cases;

G.W19. principles of collecting material for toxicological and hemogenetic examinations;

G.W20. legal regulations regarding the transmission of health-related information about a patient during and after their lifetime, considering the scope of information, the circle of authorized persons to obtain information, and the principles of disclosing such information to others, as well as limitations on the scope of transmitted information.

G.W21. epidemiology of cancer, especially its nutritional, environmental, and lifestyle-related factors influencing oncological risk;

G.W22. the significance of screening tests in oncology, including the risks associated with diagnostic tests for healthy individuals, and health benefits related to the most prevalent types of cancer in the Republic of Poland.

In terms of skills, (indicated by letter U- Polish language term “U”- / “skills”), the graduate is able to:

G.U1. describe the demographic structure of the population and based on this, assess and predict population health issues;

G.U2. collect information about the conditions and presence of risk factors for infectious and non-infectious diseases, and plan preventive actions at various levels of prevention;

G.U3. interpret positive and negative health indicators;

G.U4. assess the epidemiological situation of infectious and non-infectious diseases in the Republic of Poland and worldwide;

G.U5. explain the basic rights of individuals utilizing healthcare services and the legal foundations for providing these services;

G.U6. issue medical certificates and opinions, prepare documentation for patients, authorized authorities, and entities, create and manage medical records (both electronically and on paper), and utilize information and communication tools and services in healthcare (e-health);

G.U7. recognize behaviors and symptoms indicating the possibility of violence, including domestic violence, during patient examinations;

G.U8. act in a way that enables the prevention of adverse events, ensures the maintenance of quality in healthcare and patient safety, monitor the occurrence of adverse events, respond to them, inform about their occurrence, and analyze their causes;

G.U9. collect blood for toxicological examinations and secure material for hemogenetic studies;

G.U10. organize the work environment to ensure the safety of patients and others, considering the impact of human factors and ergonomic principles;

G.U11. determine the possibility of applying new treatment methods in relation to a specific patient based on current clinical research results.

H. PRACTICAL CLINICAL TEACHING IN THE SIXTH YEAR OF STUDIES

In terms of skills, (indicated by letter U- Polish language term "U"- / "skills"), the graduate can independently:

H.U1. take measurements and assess basic life functions (temperature, pulse, blood pressure) and monitor them using a cardiac monitor and pulse oximeter;

H.U2. perform non-instrumental and instrumental airway clearance;

H.U3. measure peak expiratory flow;

H.U4. collect and secure blood and other biological material for laboratory and microbiological tests;

H.U5. administer medication intravenously, intramuscularly, and subcutaneously;

H.U6. administer various forms of inhalation therapy and select an inhaler appropriate for the clinical situation;

H.U7. obtain arterial and arterialized capillary blood;

H.U8. perform strip tests, including measuring glucose concentration using a glucometer;

H.U9. collect swabs for microbiological and cytological examinations;

H.U10. preform urinary bladder catheterization in both women and men;

H.U11. insert a gastric tube;

H.U12. administer a rectal infusion;

H.U13. perform pleural procedures: puncture and decompression of pneumothorax;

H.U14. perform a standard resting electrocardiogram and interpret its results;

H.U15. perform defibrillation, electrical cardioversion, external cardiac pacing;

H.U16. surgically wash hands, put on sterile gloves, dress for surgery or a procedure requiring sterility, prepare the surgical field according to aseptic principles, and participate in a surgical procedure;

H.U17. apply and change a sterile dressing;

H.U18. assess and dress a simple wound, including local anesthesia (surface, infiltration), apply and remove surgical sutures, apply and change a sterile surgical dressing;

H.U19. control external bleeding;

H.U20. temporarily immobilize a limb, including selecting the type of immobilization in typical clinical situations, and check the correctness of limb perfusion after applying an immobilizing dressing;

H.U21. immobilize the cervical and thoracolumbar spine after injury;

H.U22. perform anterior nasal tamponade.

H.U23. perform an ultrasound examination in life-threatening situations according to the FAST protocol or its equivalent and interpret the results;

H.U24. apply personal protective measures appropriate to the clinical situation;

H.U25. conduct an interview with adults, including older individuals, utilizing communication skills related to content, process, and perception, considering both the biomedical perspective and the patient's perspective;

H.U26. gather information from a child and their caregivers, employing communication skills related to content, process, and perception, considering both the biomedical perspective and the patient's perspective;

H.U27. conduct an interview in a life-threatening health situation using the SAMPLE scheme;

H.U28. perform a comprehensive and focused physical examination of adults adapted to a specific clinical situation;

H.U29. conduct a comprehensive and focused physical examination of a child from the neonatal period to adolescence, adapted to a specific clinical situation;

H.U30. deliver unfavorable news using a chosen protocol (e.g., SPIKES, EMPATHY, ABCDE), including supporting the family in the dignified dying process and informing them of the patient's death;

H.U31. obtain information from team members with respect for their diverse opinions and specialized competencies, incorporate this information into the patient's diagnostic-therapeutic plan, and apply ATMIST, RSVP/ISBAR protocols;

H.U32. perform a psychiatric examination of the patient and assess their mental state;

H.U33. confirm the death of a patient;

H.U34. conduct comprehensive assessments, including comparing anthropometric measurements and blood pressure with percentile charts, and evaluate the degree of maturation;

H.U35. qualify patients for immunizations;

H.U36. administer oxygen therapy using non-invasive methods;

H.U37. perform basic life support (BLS) procedures for newborns and children following ERC guidelines;

H.U38. perform advanced life support (ALS) procedures for newborns (NLS) and children (PALS) following ERC guidelines;

H.U39. conduct basic life support (BLS) procedures for adults, including using an automatic external defibrillator, following ERC guidelines.

H.U40. perform advanced life support (ALS) procedures for adults in accordance with ERC guidelines;

H.U41. recognize the most common life-threatening conditions, including using various imaging techniques;

H.U42. Recognize ophthalmic conditions requiring urgent specialist assistance and provide pre-hospital first aid in cases of physical and chemical eye injuries;

H.U43. detect and interpret fetal heart activity;

H.U44. perform tasks while assisting in physiological childbirth.

IV. METHOD OF VERIFYING ACHIEVED LEARNING OUTCOMES

1. Verifying achieved learning outcomes requires the application of diverse assessment methods appropriate to the categories of knowledge, skills, and social competencies to which these outcomes relate.
2. Achieved learning outcomes in the category of knowledge can be verified through written or oral exams.
3. Forms of written exams may include essays, reports, short structured questions, multiple-choice questions (MCQ), multiple-response questions (MRQ), True/False or matching answer tests.
4. Exams should be standardized and aimed at assessing knowledge at a higher level than mere familiarity with the issues (level of understanding, ability to analyze and synthesize information, and problem-solving skills).
5. Verification of achieved learning outcomes in the category of skills related to professional communication with patients in groups D, E, and F is carried out through practical exams conducted in simulated conditions, including the involvement of simulated patients, or in clinical settings, using observation cards or checklists.
6. Verification of achieved learning outcomes in the category of skills in groups E, F, and H requires direct observation of the student demonstrating skills during traditional clinical exams and Objective Structured Clinical Examination (OSCE). The OSCE exam is required as a form of verification of

learning outcomes in the skills category achieved throughout the entire period of study and takes place in the sixth year of study.