

III. LEARNING OUTCOMES

1. GENERAL LEARNING OUTCOMES

1.1. In terms of knowledge, the graduate knows and understands:

- 1) the development, structure, and function of the human body under normal and pathological conditions;
- 2) symptoms and course of diseases;
- 3) diagnostic and therapeutic modalities specific to certain conditions;
- 4) ethical, social, and legal conditions of the medical profession and the principles of health promotion, and bases their knowledge on scientific evidence;
- 5) research methods.

1.2. In terms of skills, the graduate can:

- 1) recognise medical problems and identify priorities for medical management;
- 2) recognise conditions that are life-threatening and require immediate medical intervention;
- 3) plan the diagnostic procedure and interpret the results;
- 4) implement an appropriate and safe therapeutic procedure and anticipate its consequences;
- 5) plan their own learning activities and continuously update their 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 needs of the patient, and convey bad news applying the principles of professional communication;
- 8) communicate as a team and share knowledge;
- 9) critically evaluate scientific findings and justify their opinion accordingly.

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

- 1) establish and maintain deep and respectful contact with the patient and show understanding for worldview and cultural differences;
- 2) be guided by the welfare of the patient;
- 3) respect medical confidentiality and patient rights;
- 4) take action based on ethical principles, with an awareness of the social determinants and limitations of the disease;
- 5) perceive and recognise their own limitations, make self-assessments of deficits and learning needs;

- 6) promote healthy behaviour;
- 7) use objective sources of information;
- 8) formulate conclusions from their own measurements or observations;
- 9) implement the principles of professional camaraderie and teamwork, including with representatives of other health professions, and in a multicultural and multinational environment;
- 10) form opinions on various aspects of professional activity;
- 11) accept the responsibility associated with decisions taken during professional activities, including in terms of the safety of themselves and others.

2. SPECIFIC LEARNING OUTCOMES

A. MORPHOLOGICAL SCIENCES

In terms of knowledge, the graduate knows and understands:

- A.K1. the structure of the human body in a topographical and functional approach, including the topographical correlations between the various organs, together with anatomical, histological, and embryological nomenclature;
- A.K2. cellular structures and their functional specialisations;
- A.K3. micro-architecture of tissues, extracellular matrix, and organs;
- A.K4. the stages of development of the human embryo, the structure and function of the foetal membranes and placenta, the stages of development of various organs, and the effects of harmful factors on embryonic and foetal development (teratogenic).

In terms of skills, the graduate can:

- A.S1. operate an optical microscope, including the use of immersion;
- A.S2. recognise in microscopic images structures corresponding to organs, tissues, cells, and cellular elements, describe and interpret their structure and the correlation between structure and function;
- A.S3. explain the anatomical basis of the physical examination;
- A.S4. infer correlations between anatomical structures based on diagnostic examinations, in particular radiological.

B. SCIENTIFIC BASIS OF MEDICINE

In terms of knowledge, the graduate knows and understands:

- B.K1. water and electrolyte composition in biological systems;
- B.K2. acid-base balance and the mechanism of action of buffers and their importance in body homeostasis;
- B.K3. the concepts of solubility, osmotic pressure, isotonia, colloidal solutions, and Gibbs-Donnan equilibrium;
- B.K4. physical laws describing fluid flow and factors affecting vascular resistance to blood flow;
- B.K5. natural and artificial sources of ionising radiation and their interaction with matter;
- B.K6. the physicochemical and molecular basis of sensory organs;
- B.K7. the physical basis of non-invasive imaging methods;
- B.K8. the physical basis of selected therapeutic techniques;
- B.K9. the structure of lipids and polysaccharides and their functions in cellular and extracellular structures;
- B.K10. I-, II-, III- and IV-order structure of proteins and post-translational and functional modifications of proteins and their significance;
- B.K11. the function of nucleotides in the cell, the I- and II-order structures of DNA and RNA, and the structure of chromatin;
- B.K12. functions of the human genome, transcriptome, and proteome and the methods used to study them, the processes of DNA replication, repair and recombination, transcription and translation, and degradation of DNA, RNA, and proteins, and the concepts of regulation of gene expression;
- B.K13. basic catabolic and anabolic pathways, how they are regulated, and how they are influenced by genetic and environmental factors;
- B.K14. basic methods used in laboratory diagnostics, including protein and nucleic acid electrophoresis;
- B.K15. organ metabolism and the metabolic, biochemical, and molecular basis of disease and therapy;
- B.K16. ways of communication between cells and between the cell and the extracellular matrix, signal transduction pathways in the cell, and examples of disruption of these processes leading to cancer and other diseases;

- B.K17. cell cycle, cell proliferation, differentiation and ageing processes, apoptosis and necrosis, and their importance for organismal functioning;
- B.K18. functions and applications of stem cells in medicine;
- B.K19. basics of excitation and conduction in the nervous system and higher nervous functions, as well as striated and smooth muscle physiology;
- B.K20. the function and regulation mechanisms of all organs and systems of the human body and the correlation between them;
- B.K21. ageing processes and organ function changes associated with ageing;
- B.K22. the basic quantitative parameters describing the performance of the various systems and organs, including the ranges of norms and demographic factors influencing the value of these parameters;
- B.K23. basic IT and biostatistical tools used in medicine;
- B.K24. basic methods of statistical analysis used in population and diagnostic studies;
- B.K25. the possibilities of modern telemedicine as a tool to assist the physician;
- B.K26. principles of research for the advancement of medicine.

In terms of skills, the graduate can:

- B.S1. use the knowledge of the laws of physics to explain the effects of external factors such as temperature, acceleration, pressure, electromagnetic fields, and ionising radiation on the human body;
- B.S2. assess the effect of ionising radiation dose on normal and pathologically altered tissues of the body and comply with the principles of radiological protection;
- B.S3. calculate the molar and percentage concentrations of compounds and the concentrations of substances in iso-osmotic, mono- and multi-component solutions;
- B.S4. calculate the solubility of inorganic compounds, determine the chemical basis of the solubility or lack thereof of organic compounds and its practical relevance to dietetics and therapeutics;
- B.S5. determine the pH of a solution and the effect of pH changes on inorganic and organic compounds;
- B.S6. predict the direction of biochemical processes in relation to the energy status of cells;

- B.S7. perform simple functional tests to assess the functioning of the human body as a stable control system (stress and exercise tests) and interpret numerical data on basic physiological variables;
- B.S8. use medical databases and correctly interpret the information they contain to solve problems in basic and clinical sciences;
- B.S9. select an appropriate statistical test, carry out basic statistical analyses, and use appropriate methods to present the results;
- B.S10. classify scientific research methodology, including distinguishing between experimental and observational studies with their sub-types, ranking them according to the reliability of the results provided, and correctly assessing the strength of scientific evidence;
- B.S11. plan and carry out scientific research, interpret the results and formulate conclusions;
- B.S12. use basic laboratory and molecular techniques.

C. PRE-CLINICAL SCIENCES

In terms of knowledge, the graduate knows and understands:

- C.K1. the normal human karyotype and the different types of sex determination;
- C.K2. the genetic causes of hereditary predisposition to cancer;
- C.K3. principles of inheritance of different numbers of traits, inheritance of quantitative traits, independent inheritance of traits, and inheritance of extra-nuclear genetic information;
- C.K4. the genetic determinants of human blood groups and serological conflict in the Rh system;
- C.K5. the genetic determinants of the most common single-gene, polygenic, and multifactorial diseases, basic chromosome aberration syndromes, syndromes caused by genomic rearrangements, polymorphisms, epigenetic and post-transcriptional changes;
- C.K6. factors affecting the primary and secondary genetic balance of the population;
- C.K7. genetic determinants of congenital malformations and selected rare diseases and the possibility of their prevention;
- C.K8. methods of genetic diagnosis and the basic indications for their use;
- C.K9. genetic mechanisms of drug resistance acquisition by microorganisms and cancer cells and their correlation to the need for individualisation of pharmacotherapy;

- C.K10. microorganisms, including pathogenic and those constituting the human microbiome, and human-invasive forms or life stages of selected parasites;
- C.K11. the epidemiology of viral, bacterial, fungal, and prion infections and parasitic infections, including their geographical distribution;
- C.K12. the pathogenesis and pathophysiology of infections and contagions and the impact of pathogens such as viruses, bacteria, fungi, prions, and parasites on the human body and population, including their modes of action, the consequences of exposure to them and the principles of prevention;
- C.K13. the consequences of exposure of the human body to chemical and physical agents and the principles of prevention;
- C.K14. aetiology, pathogenesis, pathophysiology, routes of transmission, forms, and prevention of iatrogenic infections;
- C.K15. methods used in microbiological and parasitological diagnosis (indications, principles of performance, interpretation of results);
- C.K16. diagnostic principles for infectious, allergic, autoimmune, and neoplastic diseases and blood diseases, based on the antigen-antibody reaction;
- C.K17. principles of disinfection, sterilisation, and aseptic management;
- C.K18. innate and acquired mechanisms of humoral and cellular immunity;
- C.K19. major tissue compatibility system;
- C.K20. types of hypersensitivity reactions, types of immunodeficiencies, and the basics of immunomodulation;
- C.K21. issues in the immunology of cancer and diseases of immunological origin and principles of immunotherapy;
- C.K22. genetic basis of donor and recipients selection and basics of transplantation immunology;
- C.K23. the clinical course of innate and acquired immune response and tissue and organ regeneration processes;
- C.K24. the aetiology, mechanisms, and consequences of haemodynamic disorders;
- C.K25. organ pathology, macroscopic and microscopic pathomorphological changes, clinical implications, and pathomorphological nomenclature;
- C.K26. pathogenesis of diseases, including genetic and environmental susceptibility;

- C.K27. pathomechanism and clinical forms of the most common diseases of the various systems and organs, metabolic diseases and disorders of water-electrolyte, endocrine, and acid-base metabolism;
- C.K28. the different groups of medicinal products, their mechanisms and effects of action, their basic indications and contraindications, and their basic pharmacokinetic and pharmacodynamic parameters;
- C.K29. physiological and pathological determinants of drug absorption, metabolism, and elimination from the human body;
- C.K30. basic principles of pharmacotherapy, taking into account its efficacy and safety, the need for individualisation of treatment, including that resulting from pharmacogenetics;
- C.K31. major adverse drug reactions, interactions, and the problem of poly-pragmasy;
- C.K32. the problem of drug resistance, including multidrug resistance, and the principles of rational antibiotic therapy;
- C.K33. options and types of biological, cellular, gene, and targeted therapies for specific diseases;
- C.K34. basic concepts of general toxicology;
- C.K35. groups of drugs whose abuse can lead to poisoning;
- C.K36. symptoms of the most common acute poisonings with selected groups of drugs, alcohol and other psychoactive substances, fungi, and heavy metals;
- C.K37. basic principles of diagnostic and therapeutic management of poisoning;
- C.K38. the effect of oxidative stress on cells and its importance in the pathogenesis of disease and the processes of ageing;
- C.K39. consequences of vitamin and mineral deficiencies and excesses;
- C.K40. the causes and consequences of poor nutrition, including prolonged under- and over-eating and the use of unbalanced diets and digestive and absorption disorders;
- C.K41. basics of radiotherapy;
- C.K42. the molecular basis of cancer and issues in cancer immunology;
- C.K43. practical elements of molecular biology and immunology used in the diagnosis and therapy of oncological diseases.

In terms of skills, the graduate can:

- C.S1. chart and analyse pedigrees and identify clinical and pedigree features suggestive of a genetic basis for diseases;
- C.S2. make decisions about the need for cytogenetic and molecular testing;
- C.S3. read basic genetic test results, including karyotypes;
- C.S4. determine genetic risk based on pedigree and genetic test results for chromosomal aberrations, genomic rearrangements, single-gene, and multifactorial diseases;
- C.S5. recognise pathogens under the microscope;
- C.S6. interpret microbiological test results;
- C.S7. relate images of tissue and organ damage to clinical signs of disease, history, and laboratory findings to establish a diagnosis in the most common diseases of adults and children;
- C.S8. perform simple pharmacokinetic calculations;
- C.S9. select drugs in appropriate doses to correct pathological phenomena in the human body and individual organs;
- C.S10. design rational therapy regimens for infections - empirical and targeted;
- C.S11. prepare prescription formulation records of selected medicinal substances and issue prescriptions, including e-prescriptions, following legislation;
- C.S12. seek reliable information on medicinal products, with particular reference to the summary of product characteristics (SuPC) and databases;
- C.S13. estimate the toxicological risks in specific age groups and states of hepatic and renal failure, and prevent drug poisoning.

**D. BEHAVIOURAL AND SOCIAL SCIENCES WITH ELEMENTS OF
PROFESSIONALISM AND COMMUNICATION, TAKING INTO ACCOUNT THE
IDEA OF HUMANISM IN MEDICINE**

In terms of knowledge, the graduate knows and understands:

- D.K1. the psycho-physical development of the human being from birth to death, taking into account the specificities of physical, emotional, cognitive, and social development;
- D.K2. the concepts of health and illness, the influence of the social environment (family, work, social relations) and socio-cultural conditions (origin, social status, religion, nationality, and ethnic group) on the patient's state of health;

- D.K3. human behaviour conducive to maintaining health and the principles of motivating the patient towards health-promoting behaviour (Prochaski and DiClemente change model, motivational anamnesis);
- D.K4. the concept of stress, including eustress and distress, and the impact of stress on the aetiopathogenesis and course of somatic diseases and psychiatric disorders, and coping mechanisms;
- D.K5. social attitudes towards illness, disability, and old age and the specific impact of stereotypes, prejudice, and discrimination;
- D.K6. the concept of empathy and the phrases and behaviours used to express it;
- D.K7. the specificity and role of verbal (conscious construction of messages) and non-verbal communication (e.g. facial expressions, gestures, silence, and space management);
- D.K8. psychosocial consequences of acute and chronic illness in children, including adolescents, and adults;
- D.K9. psychosocial consequences of hospitalisation of children, including adolescents, and adults in emergencies and chronic diseases;
- D.K10. psychosocial consequences of the illness for the patient's family (family with a sick child, including adolescents, adults, and the elderly);
- D.K11. the role of the patient's family in the illness process (recognition of the illness, adaptation to the illness, recovery) and ways of coping with difficult situations (progression of the illness, dying process, bereavement);
- D.K12. problematic substance uses, addiction and behavioural addictions, methods of brief intervention with problematic substance users, mechanisms of addiction and the goals and methods of treatment for addicts, effective prevention strategies, psychosomatic disorders affecting people in a close relationship with an addict and therapeutic approaches;
- D.K13. forms of violence, including domestic violence, the social determinants of the various forms of violence and the role of the doctor in recognising it, the rules for dealing with suspected cases of violence, including the "Blue Card" procedure;
- D.K14. the concept of normal and pathological sexual behaviour;
- D.K15. the concept of humanism in medicine, the main concepts, theories, and ethical principles that serve as a general framework for properly interpreting and analysing moral and medical issues;

- D.K16. patient rights and the concept of patient welfare;
- D.K17. the philosophy of palliative care and its importance in the context of patient care at all stages of serious illness and death with dignity;
- D.K18. history of medicine, features of modern medicine, and the most important discoveries and achievements of the leading representatives of Polish and world medicine;
- D.K19. the fundamentals of evidence-based medicine;
- D.K20. the concepts of patient safety, safety culture, and their organisational, communication and management aspects.

In terms of skills, the graduate can:

- D.S1. observe ethical models in professional activities, including planning and carrying out the therapeutic process following ethical values and the idea of humanism in medicine;
- D.S2. recognise the ethical dimension of medical decisions and distinguish factual from normative aspects;
- D.S3. respect patient rights;
- D.S4. demonstrate responsibility for improving their own skills and passing on knowledge to others;
- D.S5. critically analyse medical literature, including in English, and draw conclusions;
- D.S6. communicate with the patient in one foreign language at B2+ level of the Common European Framework of Reference for Languages;
- D.S7. develop and improve self-awareness, self-reflection and self-care, and reflect with others on their own way of communicating and behaving;
- D.S8. recognise their own emotions and manage them in their relationships with others to perform their work effectively despite their emotional reactions;
- D.S9. describe and critically evaluate their behaviour and communication, taking into account the possibility of alternative behaviour;
- D.S10. use, as appropriate, open and closed questions, paraphrasing, clarification, internal and final summaries, signalling, active listening (e.g. capturing and recognising signals sent by the interlocutor, verbal and non-verbal techniques), and facilitation (encouraging the interlocutor to speak);

- D.S11. adapt verbal communication to the needs of the patient, expressing themselves clearly and avoiding medical jargon;
- D.S12. recognise and analyse difficult situations and communication challenges, including crying, strong emotions, anxiety, interruptions, awkward and sensitive issues, silence, withdrawal, aggressive and demanding behaviour, and constructively deal with them;
- D.S13. establish contact with the patient and the person accompanying the patient to build an appropriate relationship (e.g. *4 Habits Model: Invest in the beginning, Demonstrate empathy, Elicit the patient's perspective, Invest in the end*);
- D.S14. look at the situation from the patient's perspective, building an appropriate conversational context using the elicitation method, and then incorporating this into the construction of verbal messages.

E. NON-INTERVENTIONAL CLINICAL SCIENCES

In terms of knowledge, the graduate knows and understands:

- E.K1. principles of natural feeding, healthy child nutrition and obesity prevention, and nutritional modifications due to illness;
- E.K2. principles for the prevention of childhood illnesses, including screening, balance testing, and immunisation;
- E.K3. environmental and epidemiological conditions, causes, symptoms, principles of diagnosis and therapeutic management of the most common childhood diseases and their complications:
- 1) rickets, tetany, water-electrolyte, and acid-base disorders;
 - 2) heart defects, myocarditis, endocarditis and pericarditis, cardiomyopathy, cardiac arrhythmias, heart failure, hypertension, pulmonary hypertension, syncope;
 - 3) respiratory diseases and allergies, including congenital respiratory defects, bronchial dilatation, respiratory infections, tuberculosis, cystic fibrosis, asthma, allergic rhinitis, urticaria, atopic dermatitis, anaphylactic shock, angioedema;

- 4) anaemias, haemorrhagic diathesis, bone marrow failure conditions, childhood malignancies, including solid tumours typical of childhood, primary and secondary immunodeficiencies;
 - 5) acute and chronic abdominal pain, vomiting, diarrhoea, constipation, gastrointestinal bleeding, peptic ulcer disease, inflammatory bowel disease, pancreatic disease, cholestasis, liver disease, food allergies, congenital abnormalities of the gastrointestinal tract;
 - 6) acute kidney injury, chronic kidney disease, urinary tract infections, urinary tract disorders, congenital abnormalities of the urinary tract, vesicoureteral reflux disease, nephrolithiasis, glomerulonephritis, genetic kidney disease, tubulointerstitial diseases (tubulopathies, tubular acidosis), genetically determined kidney diseases, renal hypertension;
 - 7) growth disorders, thyroid and parathyroid diseases, adrenal diseases, diabetes, obesity, pubertal disorders, gonadal disorders;
 - 8) cerebral palsy, encephalitis and meningitis, convulsions, epilepsy;
 - 9) the most common infectious diseases of childhood;
 - 10) systemic connective tissue diseases, including juvenile idiopathic arthritis, systemic lupus erythematosus, dermatomyositis, systemic vasculitis, and other causes of osteoarthritic pain (non-inflammatory, infectious and reactive arthritis and juvenile spondyloarthropathies);
- E.K4. issues of the abused and sexually exploited child and the principles of intervention with such patients;
- E.K5. issues of mental retardation, behavioural disorders, psychoses, addictions, autism spectrum disorders, eating, and excretion disorders in children;
- E.K6. basic foetal diagnosis and therapy;
- E.K7. environmental and epidemiological conditions, causes, symptoms, principles of diagnosis and therapeutic management of the most common adult internal medicine diseases and their complications:
- 1) cardiovascular diseases, including ischaemic heart disease, heart defects, endocardial, myocardial and pericardial diseases, heart failure (acute and chronic), arterial and venous vascular diseases, hypertension (primary and secondary), pulmonary hypertension;

- 2) respiratory diseases, including diseases of the respiratory tract, chronic obstructive pulmonary disease, asthma, bronchiectasis, cystic fibrosis, respiratory infections, tuberculosis, interstitial lung diseases, pleuritis, mediastinitis, obstructive and central sleep apnoea, respiratory failure (acute and chronic), tumours of the respiratory system;
- 3) diseases of the digestive system, including diseases of the mouth, oesophagus, stomach, duodenum, intestines, pancreas, liver, biliary tract and gallbladder, tumours of the digestive system;
- 4) diseases of the endocrine system, including diseases of the hypothalamus and pituitary, thyroid, parathyroid, adrenal cortex and medulla, ovaries and testes, as well as neuroendocrine tumours, polyglandular syndromes, various types of diabetes, metabolic syndrome, obesity, dyslipidaemia and hypoglycaemia, ovarian, testicular and thyroid tumours;
- 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, renal hypertension, renal cysts, kidney stones, urinary tract infections (upper and lower), kidney diseases during pregnancy, urinary tract tumours - kidney cancer, bladder cancer, prostate cancer;
- 6) haematopoietic diseases, including bone marrow aplasia, anaemia, granulocytopenia and agranulocytosis, thrombocytopenia, acute and chronic leukaemias, myelomas, myeloproliferative neoplasms, myelodysplastic syndromes, haemorrhagic diathesis, thrombophilia, blood disorders in diseases of other organs;
- 7) rheumatic diseases, including systemic connective tissue diseases (rheumatoid arthritis, juvenile rheumatoid arthritis, systemic lupus erythematosus, Sjögren's syndrome, sarcoidosis, systemic scleroderma, idiopathic inflammatory myopathies), spondyloarthropathies, crystallopathies, erythema nodosum, inflammatory arthritis, vasculitis and non-inflammatory joint and bone diseases (osteoarthritis, soft tissue rheumatism, osteoporosis, fibromyalgia), soft tissue and bone sarcomas;

- 8) allergic diseases, including anaphylactic shock and angioedema;
- 9) water-electrolyte and acid-base disorders (dehydration and overhydration states, electrolyte disturbances, acidosis, and alkalosis);
- E.K8. principles of pharmacotherapy in patients with renal failure and renal replacement therapy;
- E.K9. principles of nutritional and fluid therapy in various disease states;
- E.K10. the course and symptoms of the ageing process and the principles of holistic geriatric assessment and multidisciplinary care in relation to older people;
- E.K11. peculiarities in the clinical manifestations, diagnosis, and therapy of the most common diseases affecting the elderly;
- E.K12. risks associated with hospitalisation of older people;
- E.K13. the basic principles of organising care for an older person and the burden on the carer of an older person;
- E.K14. types of vascular access and their use, particularly in oncology;
- E.K15. basic neurological symptom syndromes;
- E.K16. environmental and epidemiological conditions, causes, symptoms, principles of diagnosis and therapeutic management of the most common neurological diseases and their complications:
 - 1) headaches, including migraine, tension headache, headache syndromes, and trigeminal neuralgia;
 - 2) cerebrovascular diseases, in particular stroke;
 - 3) epilepsy;
 - 4) infections of the nervous system, in particular, meningitis, Lyme disease, herpes encephalitis, neurotransmission diseases;
 - 5) dementias, in particular Alzheimer's disease, frontal dementia, vascular dementia, and other dementia syndromes;
 - 6) diseases of the basal ganglia, in particular, Parkinson's disease;
 - 7) demyelinating diseases, particularly multiple sclerosis;
 - 8) diseases of the neuromuscular system, in particular amyotrophic lateral sclerosis, sciatica, compression neuropathies;
 - 9) craniocerebral trauma, particularly concussion;
 - 10) cancer;

- E.K17. the general symptomatology of mental disorders and the principles of their classification according to the main classification systems;
- E.K18. environmental and epidemiological conditions, causes, symptoms, principles of diagnosis and therapeutic management of the most common psychiatric diseases and their complications:
- 1) schizophrenia;
 - 2) affective disorders;
 - 3) neurotic and adaptive disorders;
 - 4) eating disorders;
 - 5) psychoactive substance use disorders;
 - 6) sleep disorders;
 - 7) dementias;
 - 8) personality disorders;
- E.K19. the issue of suicidal behaviour;
- E.K20. the specificity of mental disorders and their treatment in children, including adolescents, and the elderly;
- E.K21. symptoms of mental disorders in the course of somatic diseases, their impact on the course of the underlying disease and prognosis, and the principles of their treatment;
- E.K22. issues of human sexuality and the underlying disorders associated with it;
- E.K23. mental health regulations, with particular reference to the rules on admission to a psychiatric hospital;
- E.K24. issues in oncology, including:
- 1) genetic, environmental, and epidemiological conditions, causes, symptoms, principles of diagnosis and therapeutic management of the most common cancers and their complications;
 - 2) the most common paraneoplastic syndromes and their clinical manifestations;
 - 3) basics of early cancer detection, principles of screening, and preventive measures 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 personalised treatment;
 - 5) early and late complications of oncological treatment;
 - 6) the role of supportive treatment, including nutrition;

- 7) principles for organising cancer care, including genetic counselling and multidisciplinary care;
 - 8) practical aspects of statistics in oncology, including principles for the interpretation of clinical trial results;
 - 9) the main scales and classifications used in oncology;
 - 10) principles of targeted adult breast and prostate physical examinations;
 - 11) principles of planning the diagnostic, therapeutic, and preventive management of cancer based on test results and medical records provided;
- E.K25. principles of eligibility for palliative care and therapeutic management of the most common problems in palliative medicine, including:
- 1) symptomatic treatment of the most common somatic symptoms;
 - 2) the management of cancer cachexia and the prevention and treatment of pressure sores;
 - 3) the most common emergencies in palliative medicine;
- E.K26. principles of palliative care management applied to the patient with suffering resulting from a serious illness, including terminal conditions;
- E.K27. classification of pain (acute and chronic or nociceptive, neuropathic and nociplastic) and its causes, pain assessment tools, and principles of its pharmacological and non-pharmacological treatment;
- E.K28. the concept of disability;
- E.K29. the role of medical rehabilitation and the methods used in it;
- E.K30. indications for medical rehabilitation in the most common diseases;
- E.K31. the basic issues of prevention and the management of occupational exposure to hazardous and noxious agents;
- E.K32. principles for dealing with suspicion and detection of a communicable disease;
- E.K33. environmental and epidemiological conditions, causes, symptoms, principles of diagnosis and therapeutic and preventive management of the most common infectious diseases and their complications:
- 1) bacterial diseases, including streptococcal, staphylococcal, pneumococcal, and meningococcal infections, whooping cough, tuberculosis, Lyme disease, and gastrointestinal infections;

- 2) viral diseases, including respiratory and gastrointestinal infections, viral hepatitis, *Herpesviridae*, human immunodeficiency virus and neurotropic virus infections;
- 3) parasitic diseases, including giardiasis, amebiasis, toxoplasmosis, malaria, toxocariasis, trichomoniasis, roundworm, tapeworm and pinworm;
- 4) mycoses, including candidiasis, aspergillosis and pneumocystosis;
- 5) nosocomial infections;

E.K34. principles for dealing with exposure to potentially infectious material;

E.K35. environmental and epidemiological conditions, causes, symptoms, principles of diagnosis and therapeutic management of the most common dermatological and sexually transmitted diseases;

E.K36. causes, symptoms, principles of diagnosis and therapeutic management of the most common genetic diseases in children and adults;

E.K37. environmental and epidemiological conditions, causes, symptoms, principles of diagnosis and therapeutic management of the most common diseases in GP practice;

E.K38. principles of health-seeking behaviour, the basics of prevention and early detection of the most common diseases of civilisation, and the principles of screening for these diseases;

E.K39. types of biological materials used in laboratory diagnosis and the principles of collecting material for tests;

E.K40. opportunities and limitations of laboratory tests;

E.K41. indications for the implementation of monitored therapy;

E.K42. indications for treatment with blood components and the principles of their administration.

In terms of skills, the graduate can:

E.S1. take an anamnesis from an adult, including an older person, using skills relating to the content, process, and perception of communication, taking into account the biomedical and patient perspectives;

E.S2. take an anamnesis from a child and their carers, using skills on the content, process, and perception of communication, taking into account the biomedical and patient perspectives;

- E.S3. take a health and life history using the SAMPLE scheme (S - *Symptoms* , A - *Allergies* , M - *Medications* , P - *Past medical history* , L - *Last meal*, E - *Events prior to injury/illness*);
- E.S4. perform a targeted physical examination of the adult breast and prostate gland;
- E.S5. carry out a full and focused physical examination of the adult adapted to the specific clinical situation, including:
- 1) general;
 - 2) neurological;
 - 3) gynaecological;
 - 4) musculoskeletal system;
 - 5) ophthalmological;
 - 6) otolaryngological;
 - 7) geriatric;
- E.S6. carry out a complete and focused physical examination of a child from the neonatal to adolescent period adapted to the specific clinical situation, including:
- 1) general paediatric;
 - 2) neurological;
 - 3) musculoskeletal system;
 - 4) ophthalmological;
 - 5) otolaryngological;
- E.S7. carry out a psychiatric examination of a patient and assess their mental state;
- E.S8. carry out periodic examinations, including comparing anthropometric and blood pressure measurements with data on centile grids, and assessing maturation;
- E.S9. recognise the most common symptoms of disease in adults, apply diagnostic tests and interpret their results, carry out differential diagnosis, implement therapy, monitor treatment effects, and assess indications for specialist consultation, particularly for symptoms such as:
- 1) fever;
 - 2) asthenia;
 - 3) loss of appetite;

- 4) weight loss;
- 5) shock;
- 6) cardiac arrest;
- 7) disturbance of consciousness, including fainting;
- 8) swelling;
- 9) rash;
- 10) coughing and expectoration;
- 11) haemoptysis;
- 12) dyspnoea;
- 13) nasal and ear discharge;
- 14) chest pain;
- 15) heart palpitations;
- 16) cyanosis;
- 17) nausea and vomiting;
- 18) swallowing disorders;
- 19) abdominal pain;
- 20) presence of blood in the stool;
- 21) constipation and diarrhoea;
- 22) jaundice;
- 23) bloating and abdominal resistance;
- 24) anaemia;
- 25) lymphadenopathy;
- 26) urinary disorders;
- 27) haematuria and proteinuria;
- 28) menstrual disorders;
- 29) lowered mood and anxiety;
- 30) impaired memory and cognitive functions;
- 31) headache;
- 32) dizziness;
- 33) paresis;
- 34) convulsions;
- 35) back pain;
- 36) joint pain;
- 37) injury or burn;
- 38) dehydration and overhydration;

E.S10. recognise the most common symptoms of disease in children, apply diagnostic tests and interpret their results, carry out differential diagnosis, implement therapy, monitor the effects of treatment, and assess indications for specialist consultation, particularly for symptoms such as:

- 1) fever;
- 2) coughing and expectoration;
- 3) dyspnoea;
- 4) nasal and ear discharge;
- 5) urinary disorders;
- 6) rash;
- 7) anaemia;
- 8) eating disorders;
- 9) growth disorders;
- 10) convulsions and disturbances of consciousness;
- 11) heart palpitations;
- 12) fainting;
- 13) osteoarticular pains;
- 14) swellings;
- 15) lymphadenopathy;
- 16) abdominal pain;
- 17) constipation and diarrhoea;
- 18) presence of blood in the stool;
- 19) dehydration;
- 20) jaundice;
- 21) cyanosis;
- 22) headache;
- 23) red eye syndrome;

E.S11. recognise the symptoms of hazardous and harmful use of alcohol and problematic use of other psychoactive substances, symptoms of psychoactive substance dependence and behavioural addictions, and propose appropriate therapeutic and medical treatment;

E.S12. recognise conditions requiring inpatient treatment;

E.S13. qualify the patient for immunisation;

E.S14. perform medical procedures and treatments, including:

- 1) measuring and assessing basic vital functions (temperature, pulse, blood pressure) and monitoring them using a cardiomonitor and pulse oximeter;
- 2) different forms of inhalation therapy, and make the choice of inhaler for the patient's clinical condition;
- 3) measuring peak expiratory flow;
- 4) oxygen therapy using non-invasive methods;
- 5) non-instrumented and instrumented airway management;
- 6) intravenous, intramuscular, and subcutaneous administration of the drug;
- 7) collecting and securing blood for laboratory tests, including microbiological;
- 8) collecting arterial and capillary blood;
- 9) taking swabs for microbiological and cytological tests;
- 10) bladder catheterisation in women and men;
- 11) inserting gastric tube;
- 12) rectal infusion;
- 13) standard resting electrocardiogram, and interpreting the result;
- 14) defibrillation, electrical cardioversion, and external electrostimulation;
- 15) strip tests, including glucose measurement with a glucometer;
- 16) pleural procedures: puncture and decompression of emphysema;
- 17) anterior nasal tamponade;
- 18) ultrasound examination in life-threatening situations according to the FAST (*Focussed Assessment with Sonography in Trauma*) protocol or equivalent, and interpreting the result;

E.S15. apply personal protective equipment appropriate to the clinical situation;

E.S16. declare the patient dead;

E.S17. participate in the process of dying with dignity for the patient, using the potential of palliative care;

E.S18. maintain patient medical records, including in electronic form, following the law;

E.S19. plan the diagnostic, therapeutic, and prophylactic management of cancer based on test results and medical records provided;

- E.S20. provide healthcare services using available IT or communication systems used in healthcare;
- E.S21. provide health education to the patient, including tailored nutritional education;
- E.S22. administer appropriate antibiotic therapy depending on the patient's clinical condition;
- E.S23. conduct a conversation with the patient, taking into account the conversation pattern (starting the conversation, gathering information, clarifying and planning, ending the conversation), taking into account the structuring of such a conversation and shaping the relationship with the patient using a model of their choice (e.g. *Calgary-Cambridge Guidelines*, *Segue*, *Kalamazoo Consensus*, *Maastricht Maas Global*), including by electronic means of communication;
- E.S24. take an anamnesis from a patient for the presence of suicidal thoughts, if warranted;
- E.S25. communicate information to the patient, adapting the amount and content to the patient's needs and abilities, and supplement verbal information with models and written information, including diagrams and instructions, and use them appropriately;
- E.S26. make diagnostic and therapeutic decisions together with the patient (assess the patient's level of involvement, needs, and possibilities, encourage the patient to take an active part in the decision-making process, discuss advantages, disadvantages, expected outcomes, and consequences of decisions) and obtain the patient's informed consent;
- E.S27. communicate with patients from groups at risk of economic or social exclusion, respecting their dignity;
- E.S28. identify social determinants of health, indicators of the prevalence of anti-health and self-destructive behaviours and discuss these with the patient and make a note in the medical record;
- E.S29. identify possible indicators of violence, including domestic violence, take an anamnesis to verify whether the patient is at risk of experiencing violence, make a note in the medical record and initiate the "Blue Card" procedure;
- E.S30. apply the principles of feedback (constructive, non-evaluative, descriptive) in team collaboration;
- E.S31. accept, explain and analyse their own role and responsibilities within the team and recognise their role as a clinician within the team;

- E.S32. obtain information from team members, respecting their differing opinions and specialist competences, and incorporate this information into the patient's diagnostic and therapeutic plan;
- E.S33. discuss the patient's situation within the team, excluding subjective judgements, respecting the dignity of the patient;
- E.S34. use the following protocols (e.g. while transferring patient care, ordering or providing patient 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* - cause, why), S (*Story* - patient story), V (*Vital signs*), P (*Plan* – plan for the patient), I (*Introduction*), S (*Situation*), B (*Background*), A (*Assessment*), R (*Recommendation*)).

F. INTERVENTIONAL CLINICAL SCIENCES

In terms of knowledge, the graduate knows and understands:

- F.K1. causes, symptoms, principles of diagnosis and therapeutic management for the most common diseases requiring surgical treatment in adults:
- 1) acute and chronic abdominal diseases;
 - 2) thoracic diseases;
 - 3) diseases of the limbs, head and neck;
 - 4) bone fractures and organ injuries;
 - 5) cancer;
- F.K2. causes, symptoms, principles of diagnosis, and therapeutic management of the most common congenital malformations and diseases requiring surgical treatment in children;
- F.K3. basic classical and minimally invasive surgical techniques;
- F.K4. eligibility rules for basic surgery and invasive diagnostic and treatment procedures and the most common complications;
- F.K5. the most common complications of modern oncology treatment;
- F.K6. principles of perioperative safety, preparation of the patient for surgery, performance of general and local anaesthesia and controlled sedation;

- F.K7. principles of postoperative treatment with pain therapy and postoperative monitoring;
- F.K8. indications and principles of intensive care;
- F.K9. cardiopulmonary resuscitation guidelines for newborns, children and adults;
- F.K10. the most common life-threatening conditions in children and adults and the management of these conditions, particularly in:
 - 1) sepsis;
 - 2) shock;
 - 3) haemorrhages;
 - 4) water-electrolyte and acid-base disorders;
 - 5) poisonings;
 - 6) burns, hypo- and hyperthermia;
 - 7) other acute conditions:
 - a) cardiovascular,
 - b) respiratory,
 - c) neurological,
 - d) renal,
 - e) oncological and haematological,
 - f) diabetological and endocrinological,
 - g) psychiatric,
 - h) ophthalmological,
 - i) laryngological,
 - j) gynaecological, obstetric, and urological;
- F.K11. principles for dealing with suspected sexual violence;
- F.K12. principles of functioning of the integrated system of State Emergency Services;
- F.K13. invasive methods of pain management;
- F.K14. principles for the management of long-standing central venous catheters;
- F.K15. female reproductive functions, related disorders and the management of diagnostic and therapeutic procedures concerning in particular:
 - 1) the menstrual cycle and its disorders;
 - 2) pregnancy;
 - 3) physiological childbirth, pathological childbirth and puerperium;

- 4) inflammations and tumours in the genital area;
- 5) birth control and assisted reproduction;
- 6) menopause;
- 7) basic gynaecological diagnostics and procedures;

F.K16. male reproductive functions and related disorders and diagnostic and therapeutic management;

F.K17. the problems of contemporary imaging studies, in particular:

- 1) radiological symptomatology of the underlying diseases;
- 2) instrumental methods and imaging techniques used to perform medical procedures;
- 3) indications, contraindications and preparation of the patient for the different types of imaging examinations and contraindications to the use of contrast agents;

F.K18. issues in the field of eye diseases, in particular:

- 1) causes, symptoms, principles of diagnosis, and therapeutic management of the most common eye diseases;
- 2) ophthalmic complications of systemic diseases with their symptomatology and methods of managing these cases;
- 3) surgical management of specific diseases of the eye;
- 4) groups of systemic drugs with associated ophthalmic complications and contraindications, and their mechanism of action;

F.K19. ENT, phoniatrics, and audiology topics, in particular:

- 1) causes, symptoms, principles of diagnosis, and therapeutic management of diseases of the ear, nose, paranasal sinuses, oral cavity, pharynx and larynx;
- 2) diseases of the facial nerve and selected neck structures;
- 3) principles of diagnostic and therapeutic management of mechanical injuries to the ear, nose, larynx and oesophagus;
- 4) principles of diagnostic and therapeutic management of hearing, voice and speech disorders;

F.K20. topics in neurology and neurosurgery, in particular the causes, symptoms, principles of diagnosis and therapeutic management of the most common diseases of the central nervous system in terms of:

- 1) cerebral oedema and its sequelae, with particular emphasis on emergencies;

- 2) other forms of intracranial hypertension with their consequences;
- 3) craniocerebral trauma;
- 4) vascular defects of the central nervous system;
- 5) tumours of the central nervous system;
- 6) diseases of the spine and spinal cord;

F.K21. principles for promoting tissue and cell donation, indications for transplantation of blood-forming organs, tissues, and haematopoietic cells, complications of treatment, and principles for long-term care after transplantation;

F.K22. conditions where life expectancy, functional status or patient preference limit management according to disease-specific guidelines;

F.K23. principles for the suspicion and diagnosis of brain death.

In terms of skills, the graduate can:

F.S1. scrub in, apply sterile gloves, dress for surgery or a procedure requiring asepsis, prepare the surgical field according to aseptic principles, and participate in the surgical procedure;

F.S2. apply and change a sterile dressing;

F.S3. assess and dress a simple wound, including local anaesthesia (superficial, nasal), put and remove surgical sutures, apply and change a sterile surgical dressing;

F.S4. recognise the most common life-threatening conditions, including using various imaging techniques;

F.S5. recognise from radiographic examination the most common types of fracture, especially of long bones;

F.S6. immobilise the limb on an ad hoc basis, including the choice of the type of immobilisation in typical clinical situations, and check the correctness of the limb's blood supply after the immobilisation dressing has been applied;

F.S7. immobilise the cervical and thoracolumbar spine after injury;

F.S8. treat external bleeding;

F.S9. perform *Basic Life Support* (BLS) on newborns and children according to European *Resuscitation Council* (ERC) guidelines;

- F.S10. perform advanced life support on *newborns* (*Newborn Life Support*, NLS) and children (*Pediatric Advanced Life Support*, PALS) according to ERC guidelines;
- F.S11. perform basic life support (BLS) on adults, including with an automated external defibrillator, in accordance with ERC guidelines;
- F.S12. perform *Advanced Life Support* (ALS) on adults according to ERC guidelines;
- F.S13. apply the correct medical management of physiological pregnancy and puerperium following the standards of perinatal care;
- F.S14. recognise the most common symptoms indicative of abnormal pregnancy and the puerperium, apply and interpret diagnostic tests, carry out differential diagnosis, implement therapy, monitor the effects of treatment, and assess indications for specialist consultation, in particular in cases of abdominal pain, uterine contractions, bleeding from the genital tract, abnormal heart rate and foetal motility, hypertension;
- F.S15. perform detection and interpretation of foetal heart function;
- F.S16. recognise incipient labour and signs of abnormal delivery;
- F.S17. assist at a physiological birth;
- F.S18. apply correct medical management of abnormal genital tract bleeding, absence of menstruation, pelvic pain (pelvic inflammatory disease, ectopic pregnancy), vaginitis and vulvodynia, sexually transmitted diseases;
- F.S19. apply correct medical management of birth control;
- F.S20. recognise ophthalmic conditions requiring urgent specialist assistance and provide initial pre-hospital care in cases of physical and chemical injury to the eye;
- F.S21. transmit bad news using the chosen protocol, e.g:
- 1) SPIKES: S (*Setting*), P (*Perception* - knowing the state of knowledge of the co-interlocutor), I (*Invitation/Information* - inviting to talk / informing), K (*Knowledge* - conveying bad news), E (*Emotions and empathy*), S (*Strategy and summary*),
 - 2) EMPATHY: E (Emotions), M (Place), P (Patient 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 a good contact with the family), C (*Communicate well* - conveying the bad news, taking into account communication principles), D (*Dealing with reactions* - dealing with difficult emotions), E (*Encourage and validate* emotions - the right to show emotions, redirect them and respond appropriately, seeking to end the encounter)

- including supporting the family in the process of dying with dignity for the patient and informing the family of the patient's death;

F.S22. obtain information from team members, respecting their differing opinions and specialist competences, and incorporate this information into the patient's diagnostic and therapeutic plan, and apply the ATMIST, RSVP/ISBAR protocols.

G. LEGAL AND ORGANISATIONAL ASPECTS OF MEDICINE

In terms of knowledge, the graduate knows and understands:

- G.K1. methods for assessing individual and population health, measures and principles for monitoring population health, disease classification systems, and medical procedures;
- G.K2. determinants of disease, ways of identifying and studying disease risk factors, advantages and disadvantages of epidemiological studies, and principles of causal inference in medicine;
- G.K3. the epidemiology of infectious diseases, including healthcare-associated, and non-infectious diseases, types and modes of prevention at different stages of the natural course of the disease, and the role and principles of epidemiological surveillance;
- G.K4. the concept and functions of public health, the concept, tasks, and methods of health promotion, the concept of quality in health care and the factors affecting it, the structure and organisation of the health care system at national and global level, and the impact of economic conditions on health care options;
- G.K5. legal regulations concerning patient rights and the Patient Attorney, as well as legal regulations relevant to the medical activity in the field of labour law, the basis of the medical profession and the functioning of the medical self-government;
- G.K6. legal regulations on the organisation and financing of the health care system, the provision of health services financed from public funds and the principles of organisation of medical entities, the principles of functioning of information and communication tools and services in health care (e-health);

- G.K7. the legal obligations of the doctor in determining the death of a patient;
- G.K8. legal regulations on medical experimentation and the conduct of scientific research involving human subjects;
- G.K9. legal regulations on transplantation, in-vitro insemination, abortion, aesthetic treatments, palliative care, persistent therapy, mental illness, infectious diseases;
- G.K10. legal regulations concerning the doctor's duties in cases of suspected domestic violence;
- G.K11. basic pharmaceutical law regulations, including the principles of marketing medicinal and medical products, issuing prescriptions, including e-prescriptions, reimbursement of medicines, cooperation between the doctor and the pharmacist, reporting of adverse drug reactions;
- G.K12. legal regulations on medical confidentiality, the criminal, civil, and professional liability of the doctor, the principles of keeping, storing, and providing access to medical records, including e-documentation, and the protection of personal data;
- G.K13. the concepts of violent death and sudden death and the differences between trauma and injury;
- G.K14. the legal basis and principles of the medical practitioner's conduct during the inspection of the corpse at the scene of its discovery and the forensic medical examination of the corpse;
- G.K15. principles of forensic medical diagnosis and opinion in cases involving infanticide and reconstruction of the circumstances of a road accident;
- G.K16. rules for the preparation of opinions as an expert;
- G.K17. principles of forensic medical opinion regarding fitness to participate in procedural activities, biological effect and physical impairment;
- G.K18. the concept and typology of adverse events, including medical errors and medical incidents, their most common causes, their consequences, the principles of prevention and the opinions to be taken in such cases;
- G.K19. principles of collecting material for toxicological and haemogenetic tests;
- G.K20. the legal regulation of the provision of information on a patient's health during life and after death, including the scope of the information, the circle of persons entitled to receive the information and the rules on its provision to other persons, as well as the limitations on the scope of the information provided;

- G.K21. the epidemiology of cancer, in particular nutritional, environmental, and other lifestyle-related determinants of cancer risk;
- G.K22. the importance of screening in oncology, including the risks associated with diagnostic tests for healthy individuals, and the health benefits concerning the most common cancers in the Republic of Poland.

In terms of skills, the graduate can:

- G.S1. describe the demographic structure of the population and, on this basis, assess and predict population health problems;
- G.S2. collect information on the determinants and presence of risk factors for communicable and non-communicable diseases and plan preventive actions at different levels of prevention;
- G.S3. interpret positive and negative measures of health;
- G.S4. assess the epidemiological situation of communicable and non-communicable diseases in the Republic of Poland and worldwide;
- G.S5. explain to persons receiving health services their basic entitlements and the legal basis for the provision of those services;
- G.S6. issue medical certificates and medical decisions, prepare opinions for the patient, authorised bodies and entities, prepare and maintain medical records (in electronic and paper form) and use information and communication tools and services in health care (e-health);
- G.S7. recognise, when examining a patient, behaviours and symptoms indicative of possible violence, including domestic violence;
- G.S8. act in such a way as to prevent adverse events and to ensure quality in health care and patient safety, monitor and respond to adverse events, report their occurrence and analyse their causes;
- G.S9. draw blood for toxicological tests and secure material for haemogenetic tests;
- G.S10. organise the working environment in such a way as to ensure the safety of the patient and other persons, taking into account the influence of human factors and ergonomic principles;
- G.S11. determine the feasibility of new treatments for a given patient based on current clinical trial results.

H. PRACTICAL CLINICAL TEACHING IN YEAR VI

In terms of skills, the graduate can independently:

- H.S1. measure and assess basic vital functions (temperature, pulse, blood pressure) and monitor them using a cardiomonitor and pulse oximeter;
- H.S2. perform non-instrumented and instrumented airway clearance;
- H.S3. measure peak expiratory flow;
- H.S4. collect and secure blood and other biological material for laboratory tests, including microbiological tests;
- H.S5. perform intravenous, intramuscular and subcutaneous drug administration;
- H.S6. perform various forms of inhalation therapy and select an inhaler according to the clinical situation;
- H.S7. collect arterialised blood and arterialised capillary blood;
- H.S8. perform strip tests, including glucose measurement with a glucometer;
- H.S9. take swabs for microbiological and cytological tests;
- H.S10. perform bladder catheterisation in man and woman;
- H.S11. insert a gastric tube;
- H.S12. perform a rectal infusion;
- H.S13. perform pleural procedures: puncture and decompression of emphysema;
- H.S14. perform a standard resting electrocardiogram and interpret the result;
- H.S15. perform defibrillation, electrical cardioversion, external electrostimulation;
- H.S16. scrub in, wear sterile gloves, dress for surgery or procedures requiring asepsis, prepare the surgical field according to aseptic principles and participate in the surgical procedure;
- H.S17. apply and change a sterile dressing;
- H.S18. assess and dress a simple wound, including local anaesthesia (superficial, nasal), insert and remove surgical sutures, insert and change a sterile surgical dressing;
- H.S19. treat external bleeding;
- H.S20. immobilise the limb on an ad hoc basis, including the choice of the type of immobilisation in typical clinical situations, and check the correctness of the limb's blood supply after the immobilisation dressing has been applied;
- H.S21. immobilise the cervical and thoracolumbar spine after injury;
- H.S22. perform anterior nasal tamponade;

- H.S23. perform an ultrasound examination in life-threatening conditions according to the FAST protocol or equivalent and interpret the result;
- H.S24. use personal protective equipment appropriate to the clinical situation;
- H.S25. take an anamnesis from an adult, including an older person, using skills relating to the content, process and perception of communication, taking into account the biomedical and patient perspectives;
- H.S26. take an anamnesis from a child and their carers, using skills on the content, process and perception of communication, taking into account the biomedical and patient perspectives;
- H.S27. take an anamnesis in a health and life-threatening situation using the SAMPLE scheme;
- H.S28. carry out a full and focused physical examination of the adult adapted to the specific clinical situation;
- H.S29. carry out a complete and focused physical examination of the child from the neonatal to adolescent period adapted to the specific clinical situation;
- H.S30. transmit bad news using the chosen protocol (e.g. SPIKES, EMPATIA, ABCDE), including supporting the family in the process of dying with dignity for the patient and informing the family of the patient's death;
- H.S31. obtain information from team members respecting their differing opinions and specialist competences, incorporate this information into the patient's diagnostic and therapeutic plan and apply ATMIST, RSVP/ISBAR protocols;
- H.S32. carry out a psychiatric examination of the patient and assess their mental state;
- H.S33. declare the patient dead;
- H.S34. carry out periodic examinations, including comparing anthropometric and blood pressure measurements with data on centile grids, and assessing maturation;
- H.S35. qualify the patient for immunisation;
- H.S36. perform oxygen therapy using non-invasive methods;
- H.S37. perform basic life support (BLS) on newborns and children in accordance with ERC guidelines;
- H.S38. perform advanced neonatal life support (NLS) and paediatric advanced life support (PALS) in accordance with ERC guidelines;
- H.S39. carry out basic life support (BLS) on adults, including with an automated external defibrillator, in accordance with ERC guidelines;

- H.S40. perform advanced life support (ALS) on adults in accordance with ERC guidelines;
- H.S41. recognise the most common life-threatening conditions, including using various imaging techniques;
- H.S42. recognise ophthalmic conditions requiring urgent specialist assistance and provide initial pre-hospital care in cases of physical and chemical injury to the eye;
- H.S43. perform detection and interpretation of foetal heart function;
- H.S44. perform activities when assisting at a physiological birth.

K – knowledge

S – skills