

SYLLABUS

“FIRST AID AND EMERGENCY MEDICAL CARE”

compulsory discipline

academic and professional level	the second (master's) level of higher education
field of knowledge	22 «Healthcare»
specialty	«Dentistry»
academic qualification	Master of Dentistry
professional qualification	Dentist
academic and professional program	«Dentistry»
mode of study	full-time
course(s) and semester(s) of study of the discipline	Year 5 Term 9

INFORMATION ABOUT LECTURERS WHO DELIVER THE ACADEMIC DISCIPLINE

Surname, name, patronymic of the lecturer (lecturers), scientific degree, academic title	Borzykh Oksana, MD PhD, docent; Kaidashev Ihor, MD PhD DMedSc, professor; Lavrenko Anna, MD PhD, docent;
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MAIN CHARACTERISTICS OF THE ACADEMIC DISCIPLINE

The scope of the academic discipline

Number of credits / hours – 3 / 90, of which:

Lectures (hours) - 8

Practical (hours) - 20

Self-study (hours) - 62

Type of examination - final module control

The policy of the academic discipline:

The policy of the academic discipline is built taking into account the norms of the legislation of Ukraine on academic integrity, the Charter of the University, the provisions of the PSMU and other normative documents.

When organizing the educational process at PSMU, lecturers and students act in accordance with:

Regulation on the organization of the educational process at Poltava state medical university (<https://en.pdmu.edu.ua/documents>)

Regulation on the academic integrity of recipients of higher education and employees of Poltava state medical university (<https://en.pdmu.edu.ua/documents>)

Internal code of conduct for students of Poltava state medical university (<https://en.pdmu.edu.ua/documents>).

Regulation on the organization and methods for assessment of educational activities of higher education recipients at Poltava state medical university (<https://en.pdmu.edu.ua/documents>).

Regulation on the organization of self-directed work of students at Poltava state medical university (<https://en.pdmu.edu.ua/documents>).

Regulation on the procedure of forming the individual educational trajectories for the recipients of higher education at Poltava state medical university (<https://en.pdmu.edu.ua/documents>).

Regulation on the procedure of credit transfer for academic disciplines and calculation of academic difference (<https://en.pdmu.edu.ua/documents>).

The department of internal medicine №3 with phthiology is based in the department of internal medicine in the 1st City Clinical Hospital. Address: Poltava, Olesya Honchara street 27a. Students attend classes according to the timetable, punctually. Classes are held without a break. There is a cloak room in the hospital where students can change. While at the department, students have to follow the professional dress code, which includes medical uniform - white coat, medical hat (preferably white), perfectly clean and well-ironed. It is prohibited to wear medical uniform outside the hospital. It is students' personal moral responsibility to follow dress code regulations.

Description of the academic discipline (summary).

Studying the basics of internal medicine is crucial for the training of doctors of all specialties. Any doctor has to be able to provide first aid in case of emergency medical condition, trauma, bleeding, clinical death, to perform injections, place drainages, perform blood transfusion and other manipulations.

Program of the discipline "First aid and emergency medical care", Module 1 is studied during 5th year. Professional dentist with medical education has to be broadly educated, intelligent individual with basic knowledge and skills that allow prevention, diagnostics and treatment of not only dental diseases, but a broader range of somatic diseases. **Module 1. First aid and emergency medical care**, provides knowledge and skills of first aid and care in emergency life-threatening cases: hypertonic crisis, acute heart failure, fainting, collapse, cardiogenic shock, ventricular fibrillation etc. Additionally, following topics will be discussed: organization of therapeutic help, caring for patients, features of physical examination and treatment in emergency cases;

practical skills of first aid to preserve and support vitals, diagnosing emergency conditions.

Prerequisites and post-requisites of the Module 1. First aid and emergency medical care.

Prerequisites

Studying the basics of internal medicine is based on knowledge, gained from biomedical (medical biology, biochemistry, microbiology, virology and immunology, social medicine, public health etc.) and clinical departments.

Post-requisites

Knowledge and skills gained while studying internal medicine will be integrated in further learning and professional work. The knowledge acquired in the learning process is integrated into the skills of semiotic thinking. This involves the formation of skills to apply knowledge of internal medicine in the process of further education and professional activities. Also, the study of the basics of internal medicine lays the foundations for the formation of knowledge, skills and abilities necessary for future professional activities.

The aim of studying the Module 1. First aid and emergency medical care is:

Knowledge and skills gained while studying the subject will provide students with essential recourses to organize, support and provide first aid and emergency treatment on pre-hospital and early hospital stages, as well as during emergency cases of peace time.

The main tasks of studying the Module 1. First aid and emergency medical care are:

- Diagnosing emergency conditions: under any circumstances (at home, on the street, in medical/hospital setting etc.), in case of lack of information and limited time, using standards of examination and history, according to appropriate ethical and legal regulations; making justifies and informed decisions and evaluations.
- Organizing management and evacuation: in emergency circumstances, including war and peace times, during large evacuation procedures, including existing regulations and guidelines;

- Determining the tactics of emergency care: under any circumstances, using knowledge about anatomy, according to ethical and legal regulations, making justifies and informed decisions and evaluations, in limited time and recourses, according to standard guidelines;
- Provision of emergency care: under any circumstances, using knowledge about anatomy, according to ethical and legal regulations, making justifies and informed decisions and evaluations, in limited time and recourses, according to standard guidelines;

Competences and learning outcomes in accordance with the academic and professional program, the formation of which is facilitated by the discipline (integral, general, special)

Based on the Standard of Higher Education of Ukraine, Specialization Dentistry, from 26.06.2019. competencies are:

- integral:

Ability to solve problems and problems in the field of health care in the specialty "Dentistry" in professional activity or in the process of study, which involves carrying out research and / or implementation of innovations.

- common:

1. Ability to abstract thinking, analysis and synthesis.
2. Knowledge and understanding of the subject area and understanding of professional activity.
3. Ability to apply knowledge in practice.
4. Ability to communicate in the state language both orally and in writing.
5. Ability to communicate in English. Ability to use international Greece-Latin terms, abbreviations and clichés in professional oral and written speech.
6. Skills in the use of information and communication technologies.
7. Ability to search, process and analyze information from various sources.
8. Ability to adapt and act in a new situation.
9. Ability to identify, pose and solve problems.
10. Ability to be critical and self-critical.
11. Ability to work in a team.
12. Ability to act socially responsibly and consciously.
13. The ability to exercise their rights and responsibilities as a member of society, to realize the values of civil (free democratic) society and the need for its sustainable development, the rule of law, human and civil rights and freedoms in Ukraine.

- special (specialty, subject):

1. The ability to collect medical information about the patient and analyze clinical data.
2. The ability to interpret the results of laboratory and instrumental research.

3. Ability to diagnose: determine preliminary, clinical, final, accompanying diagnosis, emergency conditions.
8. Ability to perform medical and dental manipulations.
10. Ability to organize and carry out medical evacuation measures.
11. Ability to determine tactics, methods and provision of emergency medical assistance.
14. Ability to maintain normative medical documentation.
17. The ability to legally support one's own professional activity.
18. The ability to provide pre-medical care according to the protocols of tactical medicine.

Learning objectives that are formed while studying the Module 1. First aid and emergency medical care:

1. To determine and identify leading clinical symptoms and syndromes (list 1): anemia, chest pain, abdominal pain, loss of consciousness, hemorrhagic syndrome, headache, jaundice, shortness of breath, asphyxia, dizziness, change of skin color, oral mucous color, xerostomia, fever, lymphadenopathy, macroglossia, macrocheilia, edema, heartburn, change of taste, via standard methods, using medical history data, examination results. Using the knowledge about human body, organs and systems, determine likely topical and syndrome-based preliminary diagnosis of dental disease (list 2): oral mucosa: auto infectious diseases of oral mucosa (ulcerative-necrotic lesions, candidiasis), mucosal diseases in case of dermatitis with autoimmune component (pemphigus, lupus), changes of mucosa in allergic diseases, metallic intoxication, symptomatic manifestations of gastro-intestinal tract (ulcer, gastritis, enteritis, colitis, chronic hepatitis), symptomatic manifestations of cardio-vascular diseases (circulation insufficiency, arterial hypertension), symptomatic manifestations of endocrine diseases (acromegaly, Cushing syndrome, diabetes mellitus, hyper- and hypothyroid), symptomatic manifestations of hematological diseases (anemia, thrombocytopenic purpura, leukemias), symptomatic manifestations of hypo- and avitaminosis.
2. Collect information about the general condition of the patient, assess the psychomotor and physical development of the patient, the condition of the maxillofacial area, based on the results of laboratory and instrumental tests, to assess information about the diagnosis (list 5): blood glucose analysis, thyroid function tests (respiration, swallowing, speech, chewing and temporomandibular joint function), general blood test, general urine test, biochemical blood test, immunological test for dental diseases, coagulation test.
3. Assign and analyze additional (mandatory and optional) examination methods (laboratory, radiological, functional and / or instrumental) according to list 5: analysis of blood glucose, study of thyroid function (breathing, swallowing, speech, chewing and temporomandibular joint function), general blood test, general urine test, biochemical blood test, immunological test for dental diseases, coagulation test, patients with diseases of organs and tissues of the oral cavity and maxillofacial region for differential diagnosis of diseases (according to list 2) of the oral mucosa: auto infectious diseases of oral mucosa (ulcerative-necrotic lesions, candidiasis), mucosal diseases in case of dermatitis with autoimmune component (pemphigus,

lupus), changes of mucosa in allergic diseases, metallic intoxication, symptomatic manifestations of gastro-intestinal tract (ulcer, gastritis, enteritis, colitis, chronic hepatitis), symptomatic manifestations of cardio-vascular diseases (circulation insufficiency, arterial hypertension), symptomatic manifestations of endocrine diseases (acromegaly, Cushing syndrome, diabetes mellitus, hyper- and hypothyroid), symptomatic manifestations of hematological diseases (anemia, thrombocytopenic purpura, leukemias), symptomatic manifestations of hypo- and avitaminosis.

5. To diagnose emergencies under any circumstances (at home, on the street, in a medical institution), in an emergency, martial law, lack of information and limited time (according to list 4): asphyxia, hypertensive crisis, acute respiratory failure, acute heart failure, acute poisoning, electric shock, fainting, collapse, coma, laryngeal edema, Quincke's edema, convulsions, drowning, shock.

10. Determine the tactics of the dental patient with somatic pathology (according to list 3): a) diseases of the blood and blood-forming organs: anemia, hemophilia, leukemia, thrombocytopenic purpura; b) cardiovascular diseases: arterial hypertension, infectious endocarditis, heart defects, heart failure, cardiac arrhythmia, the presence of a pacemaker c) diseases of the respiratory system and mediastinum: bronchial asthma; d) diseases of the endocrine system: diabetes mellitus, thyroid disease; e) pathologies of the musculoskeletal system and connective tissue: systemic vasculitis (hemorrhagic vasculitis), rheumatoid arthritis by making an informed decision according to existing algorithms and standard schemes.

13. Determine the nature of the mode of work, rest and the necessary diet in the treatment of dental diseases (list 2): auto infectious diseases of oral mucosa (ulcerative-necrotic lesions, candidiasis), mucosal diseases in case of dermatitis with autoimmune component (pemphigus, lupus), changes of mucosa in allergic diseases, metallic intoxication, symptomatic manifestations of gastro-intestinal tract (ulcer, gastritis, enteritis, colitis, chronic hepatitis), symptomatic manifestations of cardio-vascular diseases (circulation insufficiency, arterial hypertension), symptomatic manifestations of endocrine diseases (acromegaly, Cushing syndrome, diabetes mellitus, hyper- and hypothyroid), symptomatic manifestations of hematological diseases (anemia, thrombocytopenic purpura, leukemias), symptomatic manifestations of hypo- and avitaminosis.

14. Determine the tactics of emergency medical care, using the recommended algorithms, under any circumstances on the basis of the diagnosis of emergency in a limited time (according to list 4): asphyxia, hypertensive crisis, acute respiratory failure, acute heart failure, acute poisoning, electric shock, fainting, collapse, coma, laryngeal edema, Quincke's edema, convulsions, drowning, shock.

15. Analyze and evaluate government, social and medical information using standard approaches and computer information technology.

16. Assess the impact of the environment on the health of the population in a medical institution by standard methods.

17. Form goals and determine the structure of personal activities based on the results of the analysis of certain social and personal needs.

18. To be aware of and guided in their activities by civil rights, freedoms and responsibilities, to raise the general cultural level.

19. Adhere to the requirements of ethics, bioethics and deontology in their professional activities.

20. Organize the necessary level of individual safety (own and persons under care) in the event of typical dangerous situations in the individual field of activity.

21. Perform medical manipulations on the basis of the preliminary and/or final clinical diagnosis (according to lists 2, 2.1) of the mucous membrane of the oral cavity: autoinfectious diseases of the oral mucosa (ulcer-necrotic, candidal lesions of the oral cavity), diseases of the oral cavity in dermatoses with an autoimmune component of pathogenesis (pemphigus, lupus erythematosus), changes in the oral mucosa in allergic lesions, changes in the oral mucosa in intoxication with heavy metal salts, symptomatic manifestations in the oral mucosa of diseases of the gastrointestinal tract (ulcer disease, gastritis, enteritis, colitis, chronic hepatitis), symptomatic manifestations in the oral mucosa of diseases of the cardiovascular system (circulatory insufficiency, essential arterial hypertension), symptomatic manifestations of endocrine system diseases (acromegaly, Itsenko-Cushing syndrome, diabetes, hyper- and hypothyroidism), symptomatic manifestations of blood diseases (anemia, thrombocytopenic purpura, leukemia), symptomatic manifestations on the oral mucosa of hypo- and vitamin deficiency for different segments of the population and under different conditions (according to list 6) perform artificial respiration, perform indirect heart massage, fix the tongue, wash the stomach, intestines, perform injections of medicinal substances (intramuscular, subcutaneous, intravenous jet and drip administration), measure blood pressure.

23. Perform emergency medical aid manipulations using standard schemes under any circumstances based on the diagnosis of an emergency (according to list 4): asphyxia, hypertensive crisis, acute respiratory failure, acute heart failure, acute poisoning, electric shock, fainting, collapse (intramuscular, subcutaneous, intravenous jet and drip administration), measure blood pressure.

Learning outcomes of the academic discipline:

upon completing their study in the academic discipline, students must

know:

- variety of most common emergency conditions that require treatment, etiology and pathogenesis;
- diagnostic and treatment equipment of the emergency medical team;
- diagnostic and treatment equipment of the department of emergency medicine;
- diagnostic and treatment equipment in clinic and dental practice, as well as dental department;
- features of emergency aid in mass trauma;
- protocols of emergency treatment on pre-hospital and early hospital stages;

be able to:

- assess the environment and determine danger;
- perform primary and secondary examination;
- based on gathered data determine primary syndrome and use adequate protocol for emergency treatment.

Thematic plan of lectures, specifying the basic issues, which are considered at the lecture:

№	Topic	Hours
Module 1. First aid and emergency medical care		
1	<p>Organization first aid and emergency medical care in Ukraine. Regulations. Order of the Ministry of health of Ukraine No. 1269 "On approval and implementation of medical-technological documents for the standardization of emergency medical aid".</p> <p>Emergency and emergency medical care in the practice of a dentist. Emergency care in cardiology (hypertensive crisis, acute heart failure, fainting, collapse, cardiogenic shock). Cardiopulmonary resuscitation.</p> <ol style="list-style-type: none"> 1. Definition of the single system of emergency care in Ukraine. 2. Responsibilities of medical professionals. 3. Organization of emergency service of Ukraine (structure and tasks). 4. Main tasks, functions, rights and responsibilities of medical workers in provision of emergency care. 5. Ethical, deontological and communicational aspects of emergency care. 6. Features of provision of emergency care on prehospital, early hospital and hospital stages. 7. Regulating documents for emergency care. 8. Equipment of emergency team. 9. Call card of the team, rules how to work with it. 10. Ergonomic principles of work (work outside, inside the building etc.) 11. Personal safety of team members. 12. Scene assessment. 13. Determining number of victims and the need for extra support. 14. Determining injury mechanism. 15. Ambulance assignment, timing of arrival. 16. Diagnostics and treatment on prehospital stage: <ul style="list-style-type: none"> - hypertensive crisis - acute heart failure - fainting, collapse - cardiogenic shock - ventricular fibrillation - sudden death according to approved guidelines. 17. Terminal conditions. 18. Cardiopulmonary resuscitation (CPR) technique for ventricular fibrillation, ventricular tachycardia. 19. Express registration of ECG during CPR. 20. Defibrillation technique with manual defibrillator. 21. Pharmacological treatment for CPR. 22. Legal and ethical aspects of CPR. 	2
2	<p>Emergency care in pulmonology. Asphyxia. Acute respiratory failure. Drowning. Emergency allergy help. Edema of the larynx. Queen's edema. Anaphylactic shock. Modern means of ensuring the passage of the</p>	2

	<p>respiratory tract and artificial ventilation of the lungs in adults.</p> <ol style="list-style-type: none"> 1. Asphyxia, definition. Etiology. Pathogenesis. Clinical presentation. Diagnostics. First aid. Primary and secondary prevention. 2. Acute respiratory failure. Definition. Etiology. Pathogenesis. Clinical presentation. Diagnostics. First aid. Primary and secondary prevention. 3. Drowning. Definition. Etiology. Pathogenesis. Clinical presentation. Diagnostics. First aid. Primary and secondary prevention. 4. Edema of the larynx. Diagnostics and treatment on prehospital stage according to approved guidelines. 5. Quincke's edema. Diagnostics and treatment on prehospital stage according to approved guidelines. 6. Anaphylactic shock. Diagnostics and treatment on prehospital stage according to approved guidelines. 7. Pathogenesis, clinical presentation and treatment of airway obstruction in different age groups. 8. Clearing airways – techniques. 9. Clearing airways in case of cerebral trauma. 10. Oral cavity revision and clearance – manual and automatic techniques. 11. Usage of oropharyngeal and nasopharyngeal tubes. 12. Lung ventilation through mask using mechanical ventilation, O2 passage. 13. Indications and technique of intubation. 14. Alternative ways to clear the airway (laryngeal mask, laryngeal tube, combitube). 15. Symptoms of partial or full airway obstruction with foreign object, treatment. Heimlich maneuver. 16. Indications and technique of conicopuncture and conicotomy. 17. Portative ventilator. 	
3	<p>The procedure for provision of urgent medical care to the victims and patients at the prehospital stage. Primary examination. Secondary examination.</p> <p>Emergency care in gastroenterology. Gastrointestinal bleeding. Hypovolemic shock. Diagnosis. Tactics. Emergency aid. Acute poisoning. Electric trauma. Diagnosis. Tactics. Emergency aid.</p> <ol style="list-style-type: none"> 1. Primary examination (ABC), its aim. 2. "Platinum" 30 min and "golden" hour. 3. Role of injury mechanism in the severity of the damage. 4. Ambulance team and center connection, reporting the case. 5. Support and preparation for the patient of "load and go" category. 6. Transportation of patients and victims. 7. Technique of moving the patient out and inside the vehicle. 8. Primary examination technique during dental appointment. 9. Examination "Head to toes" at the scene. 10. Additional investigations at the scene. 11. Defining "emergency condition". 12. Determining management plan/ guideline. 13. Features of secondary examination at the dental appointment. 14. Gastro-intestinal bleeding. Diagnostics. Tactics. Emergency treatment. 	2

	15. Hypovolemic shock. Diagnostics. Tactics. Emergency treatment. 16. Acute poisoning. Diagnostics. Tactics. Emergency treatment. 17. Electric injury. Diagnostics. Tactics. Emergency treatment.	
4	Emergency care in endocrinology. Diabetic and hypoglycemic coma. Seizures. Differential diagnostics. Emergency aid. Diagnosis and treatment of urgent conditions at the scene. Coma. Differential diagnostics. Shock. Differential diagnostics. Emergency aid. 1. Diabetic coma. Differential diagnosis. Emergency treatment. 2. Hypoglycemic coma. Differential diagnosis. Emergency treatment. 3. Seizures. Differential diagnosis. Emergency treatment. 4. Comas. Differential diagnosis. Emergency treatment. 5. Shock. Differential diagnosis. Emergency treatment. 6. Diagnostics and treatment on prehospital stage according to approved guidelines.	2
	Total for the subject	8

Thematic plan of seminars by modules and content modules with the indication of the main issues considered at the seminar - is not provided by the program.

Calendar-thematic plan of practical classes of the Module 1. First aid and emergency medical care, with the description of main topics to be discussed:

№	Topic	Hours
1	Organization first aid and emergency medical care in Ukraine. Emergency and emergency medical care in the practice of a dentist. 1. Regulating documents for emergency care. 2. Equipment of emergency team. 3. Call card of the team, rules how to work with it. 4. Ergonomic principles of work (work outside, inside the building etc.) 5. Personal safety of team members. 6. Scene assessment. 7. Determining number of victims and the need for extra support. 8. Determining injury mechanism. 9. Ambulance assignment, timing of arrival. 10. First aid and emergency care in dental practice.	2
2	Emergency care in cardiology (hypertensive crisis, acute heart failure, fainting, collapse, cardiogenic shock). Cardiopulmonary resuscitation. 1. Diagnostics and treatment of hypertensive crisis on prehospital stage according to guidelines. 2. Diagnostics and treatment of acute heart failure on prehospital stage according to guidelines. 3. Diagnostics and treatment of fainting and collapse on prehospital stage according to guidelines. 4. Diagnostics and treatment of sudden death on prehospital stage according to	3

	<p>guidelines.</p> <p>5. Cardiopulmonary resuscitation (CPR) technique for ventricular fibrillation, ventricular tachycardia.</p> <p>6. Post-CPR support.</p>	
3	<p>Emergency care in pulmonology. Asphyxia. Acute respiratory failure. Drowning. Modern means of ensuring the passage of the respiratory tract and artificial ventilation of the lungs in adults.</p> <p>1. Diagnostics and treatment of asphyxia on prehospital stage according to guidelines.</p> <p>2. Diagnostics and treatment of acute respiratory failure on prehospital stage according to guidelines.</p> <p>3. Diagnostics and treatment of drowning on prehospital stage according to guidelines.</p> <p>4. Clearing airways – techniques.</p> <p>5. Oral cavity revision and clearance – manual and automatic techniques.</p> <p>6. Usage of oropharyngeal and nasopharyngeal tubes</p> <p>7. Lung ventilation through mask using mechanical ventilation, O2 passage.</p> <p>8. Pulse oximetry.</p>	2
4	<p>Emergency allergy help. Edema of the larynx. Quincke's edema. Anaphylactic shock.</p> <p>1. Diagnostics and treatment of edema of the larynx on prehospital stage according to guidelines.</p> <p>2. Diagnostics and treatment of Quincke's edema on prehospital stage according to guidelines.</p> <p>3. Diagnostics and treatment of anaphylactic shock on prehospital stage according to guidelines.</p>	1
5	<p>Emergency care in gastroenterology. Gastrointestinal bleeding. Hypovolemic shock. Diagnosis. Tactics. Emergency aid.</p> <p>1. Diagnostics and treatment of gastro-intestinal bleeding on prehospital stage according to guidelines.</p> <p>2. Diagnostics and treatment of hypovolemic shock on prehospital stage according to guidelines.</p>	2
6	<p>Acute poisoning. Diagnosis. Tactics. Emergency aid.</p> <p>1. Diagnostics and treatment of acute poisoning from the unknown gas on prehospital stage according to guidelines.</p> <p>2. Diagnostics and treatment of CO on prehospital stage according to guidelines.</p> <p>3. Diagnostics and treatment of gastro-intestinal bleeding on prehospital stage according to guidelines.</p> <p>2. Diagnostics and treatment of acute poisoning of unknown substance on prehospital stage according to guidelines.</p>	2
7	<p>Emergency care in endocrinology. Diabetic and hypoglycemic coma. Differential diagnostics. Emergency aid.</p> <p>1. Diagnostics and treatment of diabetic coma on prehospital stage according to guidelines.</p> <p>2. Diagnostics and treatment of hypoglycemic coma on prehospital stage according to guidelines.</p>	2

8	The procedure for provision of urgent medical care to the victims and patients at the prehospital stage. Primary examination. Secondary examination. 1. Primary examination (ABC), its aim. Aim of the primary examination. Performance technique on conscious and unconscious patient. 2. Providing first aid during primary examination. Determining the further tactics on the scene. 3. "Platinum" 30 min and "golden" hour. 4. Role of injury mechanism in the severity of the damage. 5. Ambulance team and center connection, reporting the case. 6. Support and preparation for the patient of "load and go" category. 7. Transportation of patients and victims. 8. Technique of moving the patient out and inside the vehicle. 9. Primary examination technique during dental appointment. 10. Examination "Head to toes" at the scene. 11. Additional investigations at the scene. 12. Defining "emergency condition". 13. Determining management plan/ guideline. 14. Aim and features of secondary examination at the scene and on the go (ABCDE).	1
9	Diagnosis and treatment of urgent conditions at the scene. Coma. Differential diagnostics. 1. Diagnosis and treatment of urgent conditions at the scene. 2. Diagnostics and treatment of loss of consciousness on prehospital stage according to guidelines. 3. Diagnostics and treatment of different comas on prehospital stage according to guidelines.	2
10	Shock. Differential diagnostics. Emergency aid. 1. Diagnostics and treatment of shock of different origin on prehospital stage according to guidelines. 2. Diagnosis and emergency treatment for Anaphylactic shock.	1
11	Final module control for Module 1 (practical skills demonstration, computer-based testing).	2
	Total	20

Self-directed work

Module 1. First aid and emergency medical care		
1	Preparation for practical classes - theoretical training and development of practical skills.	9
2	Elaboration of topics that are not included in the classroom plan (list): 1. Organization first aid and emergency medical care in Ukraine. Regulations. Order of the Ministry of health of Ukraine No. 1269 "On approval and implementation of medical-technological documents for the standardization of emergency medical aid". 1. Definition of the single system of emergency care in Ukraine.	6

Main principles of CPR.

3. Write assignment on the following topics:

Diagnostics and treatment of hypoglycemic coma according to guidelines.

Diagnostics and treatment of anaphylactic shock according to modern guidelines.

Oral cavity revision and clearance – manual and automatic techniques

4. Conduct an educational campaign in clinic and hospital department, during patients' appointments, check-up examinations.

5. Conduct educational conversations with patients.

6. Create an educational leaflet.

List of theoretical questions for the preparation for final module control of Module 1 “First aid and emergency medical care”.

1. Organization of work of emergency service of Ukraine.

2. Structure and of emergency service of Ukraine.

3. Main tasks, functions, rights and responsibilities of ambulance team.

4. Equipment of emergency team.

5. Main tasks, functions, rights and responsibilities of the department of emergency medicine.

6. Ethical, deontological and communicational aspects of emergency care.

7. Scene assessment. Personal safety of team members, witnesses and victims, approaching the victim.

8. Ergonomic principles of work (work outside, inside the building etc.)

9. Primary examination (ABC), its aim. Aim of the primary examination.

Performance technique on conscious and unconscious patient.

10. Providing first aid during primary examination. Determining the further tactics on the scene.

11. Aim and features of secondary examination at the scene and on the go (ABCDE).
Indications.

12. Pathogenesis, clinical presentation and treatment of airway obstruction in different age groups.

13. Clearing airways – techniques.
14. Clearing airways in case of cerebral trauma.
15. Oral cavity revision and clearance – manual and automatic techniques.
16. Usage of oropharyngeal and nasopharyngeal tubes.
17. Lung ventilation through mask using mechanical ventilation, O₂ passage.
18. Indications and technique of intubation.
19. Alternative ways to clear the airway (laryngeal mask, laryngeal tube, combitube).
20. Symptoms of partial or full airway obstruction with foreign object, treatment.
Heimlich maneuver.
21. Indications and technique of conicopuncture and conicotomy.
22. Defining terminal conditions. Diagnosing clinical death. Absolute and relative indicators.
23. Reasons for ineffective circulation. Diagnosing sudden death.
24. Classification and assessment of heart rate.
25. Cardiopulmonary resuscitation (CPR) technique for ventricular fibrillation.
26. Cardiopulmonary resuscitation (CPR) technique for ventricular tachycardia.
27. Cardiopulmonary resuscitation (CPR) technique no-pulse electric activity.
28. Cardiopulmonary resuscitation (CPR) technique for asystole in adults.
29. Diagnosing causes of cardiac arrest: Hs (hypovolemia, hypoxia, hydrogen (acidosis), hyperkalemia or hypokalemia), Ts (tablets or toxins, cardiac tamponade, tension pneumothorax, thrombosis).
30. Pharmacological management of heart arrest.
31. CPR with automatic defibrillator.
32. Duration of CPR, effectiveness signs.
33. Post-CPR support.
34. Mistakes and complications during CPR.
35. Legal and ethical aspects of CPR.
36. Diagnosis and emergency treatment for acute coronary syndrome.
37. Diagnosis and emergency treatment for cardiogenic shock.
38. Diagnosis and emergency treatment for hypertonic crisis.
39. Diagnosis and emergency treatment for anaphylactic shock.

40. Diagnosis and emergency treatment for laryngeal edema.
41. Diagnosis and emergency treatment for Quincke's edema.
42. Diagnosis and emergency treatment for hypothermia.
43. Diagnosis and emergency treatment for drowning.
44. Diagnosis and emergency treatment for electric injury.
45. Diagnosis and emergency treatment for coma of unknown origin.
46. Diagnosis and emergency treatment for diabetic comas.
47. Diagnosis and emergency treatment for poisoning from gas of unknown origin.
48. Diagnosis and emergency treatment for poisoning from substance of unknown origin.
49. General principles of detoxication therapy on prehospital stage. Antidotes.
50. Role of emergency department in multi-specialized hospital for optimization of care during mass injuries.

List of practical skills for the preparation for final module control of Module 1.

First aid and emergency medical care.

Respiratory system:

1. Airway clearance.
2. Introducing mouth and nasal airway tubes.
3. Ventilation with Ammo bag and facial mask.
4. Intubation.
5. Medical (pharmaceutical) support for intubation.
6. Using alternative ways to clear the airway (laryngeal mask, laryngeal tube, combitube, conicopuncture, conicotomy).
7. Airway aspiration (manual or electric).
8. Oxygen therapy.

Cardio-vascular system:

1. CPR performance and cerebral resuscitation.
2. Using automated defibrillator.
3. Using manual defibrillator.
4. Capillary refill assessment.

5. Registering 12-lead ECG.

Vascular access:

1. Catheter introduction (peripheral line).

Additional:

1. Blood pressure measurement and interpretation.
2. Pulse oximetry.
3. Glucose levels analysis.

The form of final control of academic performance - final module control

The system of continuous and final control

Continuous studying is assessed with a traditional 4-point based system (excellent, good, satisfactory, unsatisfactory):

- “excellent” – student knows over 90% of the material during both oral and testing examination. Has good command of the terminology, presents clear answers, fully performs practical tasks.
- “good” – student knows 75-89% of the material, makes insignificant mistakes, self-corrects. Achieves over 75% during the test. Practical tasks are performed fully with insignificant mistakes.
- “satisfactory” - student knows 60 -74% of the material, makes frequent mistakes, doesn't self-correct. Achieves over 60% during the test. Practical tasks aren't performed fully as required.
- “unsatisfactory” - student knows below 59% of the material, including testing. Has unclear answers and does not perform practical manipulations.

Scheme of calculation and distribution of points received by applicants for higher education. Assessment of current learning activities is carried out at each practical lesson in accordance with the specific objectives of each topic. In assessing the educational activities of higher education students use standardized methods of control: testing, structured written work, oral answers and structured algorithm development of practical skills. At mastering of each theme of modules for current educational activity to the applicant of higher education marks on a four-point traditional scale are exposed. The final assessment of learning outcomes in PDMU is carried out on a single 200-point

scale. The assessment of the applicant corresponds to the ratio of the level of professional and general competencies established in the assessment to the planned learning outcomes (as a percentage). At the same time are used standardized generalized criteria for assessing the knowledge of higher education (Table 1).

Table 1. Standardized generalized criteria for assessing the knowledge of higher education students in PDMU

For 4-point scale	Assessment in ECTS	Evaluation criteria
5 (excellent)	A	The student shows special creative abilities, is able to acquire knowledge independently, without the help of the teacher finds and processes the necessary information, is able to use the acquired knowledge and skills for decision-making in unusual situations, convincingly argues answers, independently reveals own talents and inclinations, possesses not less than 90 % of knowledge on the topic both during the survey and all types of control.
4 (good)	B	The student is fluent in the studied amount of material, applies it in practice, freely solves exercises and problems in standardized situations, independently corrects errors, the number of which is insignificant, has at least 85% knowledge of the topic as during the survey, and all types of control .
	C	The student is able to compare, summarize, systematize information under the guidance of a scientific and pedagogical worker, in general, independently apply it in practice, control their own activities; to correct mistakes, among which there are significant ones, to choose arguments to confirm opinions, has at least 75% of knowledge on the topic both during the survey and all types of control.

3 (satisfactory)	D	The student reproduces a significant part of the theoretical material, shows knowledge and understanding of the basic provisions with the help of research and teaching staff can analyze educational material, correct errors, among which there is a significant number of significant, has at least 65% knowledge of the topic, and all types of control.
	E	The student has educational material at a level higher than the initial, a significant part of it reproduces at the reproductive level. has at least 60% knowledge of the topic both during the survey and all types of control.
2 (unsatisfactory)	FX	The student has the material at the level of individual fragments that make up a small part of the material, has less than 60% knowledge of the topic both during the survey and all types of control.
		The student has the material at the level of elementary recognition and reproduction of individual facts, elements, has less than 60% knowledge of the topic both during the survey and all types of control.

Continuous success equals the average of the marks for practical and self-studying (notes, patient's records, work in the department etc.). The assessment of self-studying is performed during the homework review. The control of the knowledge of topics for self-studying is performed during the final control.

Tutor puts marks after their conversion according to the table below. Minimally required mark is 72.

Final modular control from Module 1 is held at the last practical lesson of VI, VII semesters on condition of full attendance applicant for higher education course of lectures and practical classes. Applicants for higher education who have scored the required minimum number of points during the current control (average grade point average 3.0 and above), do not have missed work and practical classes, have mastered the topics made for independent work within the module, and completed all

requirements for the discipline, which are provided by the working curriculum for the discipline (protection of medical history, positive assessments of meaningful modules, received permission to compile FMC during the test control, etc.) when studying Module 1. The PMC score is evaluated in points and is not converted into a traditional 4-point score. The maximum number of FMC points is 80 points. The minimum number of FMC points at which the control is considered to be made is 50 points. The maximum number of points per module is 200 points (of which up to 120 points for current performance). Applicants for higher education who during the study of the module, which is the final control, had an average score of current performance from 4.50 to 5.0 are exempt from FMC and automatically (by agreement) receive a final grade in accordance with table 2. In case of disagreement with the assessment, this category of higher education seekers is FMC according to the general rules. The received points for the module the scientific and pedagogical worker exposes in Statement of final modular control (and individual student curriculum).

Table 2. Unified table of correspondence of scores for current performance, scores for FMC, exam, and traditional four-point score.

Average score for current performance (A)	Points for current success in the module (A * 24)	Points for FMC from the module (A * 16)	Points for the module and / or exam (A * 24 + A * 16)	Category ECTS	By 4-point scale
2	48	32	80	F FX	2 unsatisfactorily
2,1	50	34	84		
2,15	52	34	86		
2,2	53	35	88		
2,25	54	36	90		
2,3	55	37	92		
2,35	56	38	94		
2,4	58	38	96		
2,45	59	39	98		
2,5	60	40	100		
2,55	61	41	102		
2,6	62	42	104		
2,65	64	42	106		
2,7	65	43	108		
2,75	66	44	110		
2,8	67	45	112		
2,85	68	46	114		

2,9	70	46	116	E	3 satisfactorily
2,95	71	47	118		
3	72	50	122		
3,05	73	50	123		
3,1	74	50	124		
3,15	76	50	126		
3,2	77	51	128	D	
3,25	78	52	130		
3,3	79	53	132		
3,35	80	54	134		
3,4	82	54	136		
3,45	83	55	138		
3,5	84	56	140	C	4 good
3,55	85	57	142		
3,6	86	58	144		
3,65	88	58	146		
3,7	89	59	148		
3,75	90	60	150		
3,8	91	61	152		
3,85	92	62	154		
3,9	94	62	156		
3,95	95	63	158		
4	96	64	160	B	
4,05	97	65	162		
4,1	98	66	164		
4,15	100	66	166		
4,2	101	67	168		
4,25	102	68	170		
4,3	103	69	172		
4,35	104	70	174		
4,4	106	70	176		
4,45	107	71	178		
4,5	108	72	180	A	5 perfectly
4,55	109	73	182		
4,6	110	74	184		
4,65	112	74	186		
4,7	113	75	188		

Grade for the module is defined as the sum of the scores of the current educational activity and the assessment of the final module control (FMC) in the ECTS scores, which are set when assessing theoretical knowledge and practical skills in accordance with the requirements defined by the discipline program The maximum number of ECTS points awarded to a higher education student when mastering each

module (credit) - 200, including for current educational activities - 120 points (60%), according to the results of the module final control - 80 points (40%). The minimum convertible sum of points of current success for all modules of all disciplines of all departments is uniform and makes 72 points.

Teaching methods

- verbal (lectures, explanations, stories, conversation, instruction);
- visual (observations and clinical examinations);
- practical (reception of patients, filling of medical documentation);
- research - organization by the teacher of search creative activity of students by statement of new problems and problem tasks
- methods of applying knowledge and acquiring and consolidating skills and abilities (practical classes, control individual tasks, work in the clinic, industrial practice).
- thematic discussions;
- analysis of specific situations (case method);
- simulation tasks.

Control methods

- oral control,
- written control,
- test control,
- graphic control,
- practical inspection,
- methods of self-control and self-assessment.

Methodological support

- Studying program of the subject;
- Plans for practical classes and self-studying;
- Methodical recommendations for tutors;
- Lecture notes or extended lecture plans;
- Methodical recommendations for students;
- Methodical recommendation for self-studying;
- Tests and question for classes;

- List of theoretical questions for the preparation for final module, list of practical skills for the preparation for final module control;
- Medical histories, laboratory results, guidelines,

Recommended reading

Basic (available at the library of PDMU)

1. Medicine of emergency situations: textbook for students of higher medical educational establishments of IV level of accreditation / V.V. Chaplyk, P.V. Oliynyk, S.T. Omelchuk, V.V. Humenyuk. - Vinnytsia : Nova Knuha, 2012. - 343 p.
2. Emergency and urgent medical care [Текст] : student training manual = **Екстрена та невідкладна медична допомога: навчальний посібник** / за заг. ред. Шкурупія Д. А.; О. Ю. Бодулев, О. М. Дикий, А. І. Могильник та ін.; пер. Ефендієва С. М. ; Ministry of Healthcare of Ukraine, UMSA. - Вінниця : NK Publishers=Нова Книга, 2019. - 198 p. - На англ. мові.
3. Emergency Medicine. Autor's. Prof M.S. Rasin, prof I.P. Kaydashev. Poltava. UMSA. 2008, 104 p.

Supporting:

1. Emergency management of internal diseases [Текст] : [textbook for students of higher medical educational institutions of the III-IV accreditation levels] / ed. O. Babak and O. Bilovol ; et al. - K. : Medicine Publishing, 2010. - 447 p.
2. Emergency Medicine / ed. in chief: Harold L. (May) ; assoc. ed.: R. V. Aghababian, G. R. Fleisher. - 2nd ed. - Boston ; Toronto ; London : Little, Brown and Company, 1992. - xxii, 1068, [56] p. : il. ; 28,5 sm.
3. Ramrakha P.S. Oxford Handbook of Acute Medicine [Текст] / Punit S. Ramrakha, Kevin P. Moore. - Oxford : Oxford university press, 2001. - xiv, 878 p. : il.
3. Organizational aspects of the primary health care system in Ukraine [Текст] : manual for students of higher medical educational institutions / N. I. Chekalina, S. V. Shut, Yu. V. Lysanets at al.; Ministry of public health of Ukraine, UMSA = **Организационные аспекты системы первичной медико-санитарной помощи в Украине : учебное пособие для студентов высших мед. учеб. заведений** / Н. И. Чекалина, С. В. Шуть, Ю. В. Лисанец и др.; МЗ України, УМСА. – Poltava / Полтава: Укрпромторгсервіс, 2019. - 175 p. ; 21 sm. - На англ. (до с. 96) и рус. (с. 97-170) яз.
4. National Guideline Centre (UK). Emergency and acute medical care in over 16s: service delivery and organisation. London: National Institute for Health and Care Excellence (NICE).

Informational resources:

<https://int-med-three.pdmu.edu.ua/>

<https://encyklopedia.pwn.pl/haslo/;3915125.html>

<https://thes.bncf.firenze.sbn.it/termine.php?id=17158>

<https://www.acep.org/>

<http://www.naemt.org/>

<https://nasemso.org/>

<http://eusem.org>

www.moz.gov.ua

www.pdmu.edu.ua

Centers of diseases control and prevention <https://www.cdc.gov>

<https://sph.unc.edu/hpm/health-policy-and-management-home/>

Institute for Health Metrics and Evaluation <http://www.healthdata.org>

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