MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE

Petro Mogyla Black Sea National University

Medical Institute

Department of Surgical Disciplines

"APPROVING IT"

Vice-Rector

Shkirchak N. M.

2019

WORKING PROGRAM OF THE ACADEMIC DISCIPLINE

ANAESTHESIOLOGY AND INTENSIVE CARE

Branch of knowledge 22"Healthcare"

Specialty 222 "Medicine"

Developer	Zaborovskyi V. I.
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1. Description of the academic discipline

Naming of the indicator	Characteristics of the discipline	
Name of the discipline	Anaesthesiology and intensive care	
Area of expertise	22 "healthcare"	
Specialization	222 "Medicine"	
Specialization (if any)		
Educational program	Medicine	
Higher education level	Master's Degree	
Discipline status	Regulatory information	
Course of study	5th	
Academic year	2020-2021	
Semester numbers:	Full-time form	Correspondence form
	Ten	
Total number of ECTS credits/hours	3 credits / 90 hours	
Course structure: • lectures • practical exercises • hours of independent work of students	Full-time form 10 o'clock. 40 hours. 40 hours.	Correspondence form
Percentage of audience load	56 %	
Language of instruction	english	
Final control form	Dif. credit – 10 semester	

2. Purpose, objectives, and planned learning outcomes

Goal teaching / studying the academic discipline " Anesthesiology and intensive care" is aimed at mastering the general issues of anesthesiology; pathological processes and pathological conditions; intensive care of acute cardiovascular and respiratory diseases.

As an academic discipline, it is a small part of clinical medicine, so studying the main provisions of this field of science is an important stage in training a doctor of any specialty.

Learning objectives: acquisition by a student of competencies, knowledge, skills and abilities for carrying out professional activities in the specialty with:

1) application of general principles and methods of anesthetic support for various surgical interventions;

2) proficiency in methods of diagnosis and care for major syndromes of vital function disorders;

3) interpretation of the main clinical manifestations and laboratory indicators of vital signs disorders;

4) diagnose signs of clinical death and terminal conditions, perform cardiopulmonary and cerebral resuscitation;

5) application of the basic principles of organizing emergency care for victims of man-made and natural disasters;

6) application of basic algorithms for intensive care of emergency conditions.

Prerequisites for studying the discipline (interdisciplinary relations). Anesthesiology and intensive care as an academic discipline:

a) it is based on students ' understanding of the basic principles and knowledge of anatomy, histology, medical and biological physics, bio-organic, bio-organic and biological chemistry, biology, normal and pathological physiology, microbiology, internal medicine, pediatrics, pharmacology and is integrated with these disciplines;

b) lays the foundation for students ' study of anesthesiology and intensive care of emergency conditions that arise in the clinic of internal medicine, pediatrics, surgery, traumatology and orthopedics, neurosurgery, urology, obstetrics and gynecology and other academic disciplines where methods of anesthesia and intensive care are used, which provides for the integration of teaching with these disciplines and the formation of skills to apply knowledge in the process of further training and professional activity;

c) provides an opportunity to acquire practical skills and develop professional skills for the diagnosis and provision of emergency medical care and intensive care in certain pathological conditions and during the period of patient care;

d) form the methodological foundations of clinical thinking.

Expected learning outcomes. As a result of studying the discipline, students should::

- Be able to see and examine patients in the intensive care unit with a discussion of the plan and tactics of their treatment;
- Use knowledge mastering special practical skills on phantoms and mannequins, practical use of diagnostic and intensive care methods;
- Demonstrate proficiency in methods of diagnosis and care for major syndromes of vital function disorders;
- Solve clinical situational problems and tests.

According to the requirements of the educational and professional program, students must::

TO KNOW:

- basic concepts of general nosology: health, disease, pathological process, typical pathological process, pathological reaction, pathological condition, etiology, pathogenesis;
- modern methods of anesthetic support;
- advantages and disadvantages of various methods of anesthetic support;
- clinical manifestations of various stages of anesthesia;
- main stages of anesthetic support;
- plan tactics of preparation for surgery and postoperative intensive care of patients with various surgical profiles;
- various types of disorders of water-electrolyte metabolism and acid-base state;
- the main syndromes characteristic of liver and kidney failure;
- clinical manifestations of comatose states of various genesis;
- various types of acute poisoning.

BE ABLE TO:

- Learn the stages of cardiopulmonary resuscitation and cerebral resuscitation.
- Demonstrate techniques for maintaining airway patency, artificial ventilation and closed heart massage, and electrical defibrillation.
- Choose and demonstrate various methods of intensive care for patients in intensive care.
- To justify the choice of methods of anesthetic support for various surgical interventions.
- Identify anesthesia complications, analyze the causes of their occurrence, and decide on methods to eliminate them.
- To formulate the basic principles of correction and intensive care of various types of disorders of water-electrolyte metabolism and acid-base state.
- Draw up schemes of infusion therapy for various homeostasis disorders.
- To formulate the basic principles of intensive care for comatose states of various origins.
- Interpret the patterns of occurrence of violations of vital functions of the body in acute poisoning.

HAVE COMPETENCIES

- on the application of knowledge in anesthesiology and intensive care to promote a healthy lifestyle, as well as to prevent the occurrence and development of complications of diseases;
- the main promising areas of development of anesthesiology and intensive care.

The developed program corresponds to ***educational and professional program (OPP)*** and focused on the formation of ***competencies:***

general (ZK) – ZK1-ZK3 OPP:

ZK1. Ability to think abstractly, analyze and synthesize, learn and master modern knowledge.

ZK2. Ability to apply knowledge in practical situations.

ZK3. Knowledge and understanding of the subject area and understanding of professional activity.

professional (FC) – FC1-2; FC7-9; FC11; FC18 OPP:

FC1. Patient interviewing skills.

FC2. Ability to determine the necessary list of laboratory and instrumental studies and evaluate their results.

FC7. Ability to diagnose emergency conditions.

FC8. Ability to determine the tactics of providing emergency medical care.

FC9. Skills in providing emergency medical care.

FC11. Skills in performing medical manipulations.

FC18. Ability to maintain medical records.

Program-based learning outcomes (s)-PRN11, PRN13-18,PRN22, PRN25, PRN28, PRN30, PRN32, PRN33, PRN35, PRN41 OPP:

PRN11. Collect data on patient complaints, medical history, and life history (including professional medical history), in the conditions of a health care institution, its department or at the patient's home, using the results of an interview with by the patient, according to the standard patient survey scheme. Under any circumstances (in a healthcare facility, department, or home at the patient, etc.), using knowledge about the person, his organs and systems.

PRN13. In the context of a healthcare institution, its subdivisions and among the attached population: be able to identify and record the leading clinical symptom of abosyndrom by making an informed decision, using preliminary data from the patient's medical history, data from a physical examination of the patient, knowledge about the person, his organs and systems, by adhering to the relevant ethical and legal standards. Be able to establish the most likely or syndromic diagnosis diseases by making an informed decision, for the patient and the patient's examination data, based on the leading clinical symptom or syndrome, using knowledge about the person, their organs and systems, by adhering to the relevant ethical and legal standards.

PRN14. In the context of a healthcare institution or its subdivision: appoint a laboratory and / or instrumental examination of the patient by making an informed decision, based on the most probable or syndromic diagnosis, according to standard schemes, using knowledge about the person, his organs and systems, by adhering to the relevant ethical and legal standards. Perform differential diagnosis of diseases by making an informed decision, according to a certain algorithm, using the most probable or syndrome diagnosis, data from laboratory and instrumental examination of the patient, knowledge about the person, his organs and systems, adhering to the

relevant ethical and legal norms. Establish a preliminary clinical diagnosis by making an informed decision and logical analysis, using the most probable or syndromic diagnosis, data from laboratory and instrumental examination of the patient, conclusions of differential diagnosis, knowledge about the person, his organs, etc. system, adhering to the relevant ethical and legal standards.

PRN15. Determine the necessary mode of work and rest during treatment diseases, in the conditions of a health care institution, at home in the patient and at the stages of medical evacuation, including in the field, on the basis of a preliminary clinical diagnosis, using knowledge about human beings, their organs and systems, adhering to the relevant ethical and legal standards. legal norms, by making an informed decision on the following issues: existing algorithms and standard schemes.

PRN16. Determine the necessary therapeutic nutrition in the treatment of the disease, in the conditions of a health care institution, at the patient's home and at home. stages of medical evacuation, including in the field on the basis of preliminary clinical diagnosis, using the knowledge of the person, his bodies and systems, adhering to the relevant ethical and legal standards. norms, by making an informed decision on existing ones algorithms and standard schemes.

PRN17. Determine the nature of treatment (conservative, operative) of the disease in a health care facility, at the patient's home, and at the workplace. stages of medical evacuation, including in the field on the basis of preliminary clinical diagnosis, using the knowledge of the person, his bodies and systems, adhering to the relevant ethical and legal standards. norms, by making an informed decision on existing ones algorithms and standard schemes. Determine the principles of treatment of the disease in the conditions of health care facilities, at the patient's home and at the stages of medical treatment evacuation procedures, including in the field, based on a preliminary clinical report. diagnosis, using knowledge about a person, his organs and systems, adhering to the relevant ethical and legal standards, by making an informed decision based on existing algorithms and standard schemes.

PRN18. Establish a diagnosis by making a reasonable decision. decisions and assessments of a person's condition, under any circumstances (at home, on the street, health care institution, subdivision), including in an emergency situation, in the field, in conditions of lack of information and limited time, using standard methods of physical examination, etc. possible medical history, knowledge about the person, his organs and systems, by adhering to the relevant ethical and legal standards.

PRN22. Perform medical manipulations in a medical center. based on a preliminary clinical diagnosis and/or indicators of the patient's condition, using knowledge of the following factors: human beings, their organs and systems, adhering to the relevant ethical and legal standards. legal norms, by making an informed decision and using standard techniques.

PRN25. To form, in the conditions of a health care institution, its divisions in production, using a generalized procedure for assessing the state of health human health, knowledge about a person, his organs and systems, following appropriate ethical and legal standards, through the adoption of an informed decision, among the assigned population:

dispensary groups of patients; in the group of healthy people subject to dispensary observation (newborns, children, teenagers, pregnant women, representatives of professions, must pass a mandatory dispensary examination).

PRN28. Organize the implementation of secondary and tertiary prevention activities among the assigned population, using a generalized procedure for assessing the state of human health (screening, preventive medical examination, seeking medical help), knowledge about the person, his organs and systems, adhering to the relevant guidelines. ethical and legal standards, by making an informed decision, in the context of a health care facility, in particular: form groups of dispensary observation; organize health-improving activities in a differentiated manner medical examination groups.

PRN30. Conduct detection and early diagnosis of infectious diseases in the conditions of a healthcare institution or its subdivision; primary anti-epidemic measures in the focus of an infectious disease.

PRN32. In a healthcare facility or at the patient's home based on the obtained data on the patient's health status, using standard schemes, using knowledge about a person, his organs and systems, following the appropriate ethical and legal standards, through the adoption of an informed decision: determine the tactics of examination and secondary prevention of patients, to determine the tactics of examination and primary prevention of healthy individuals subject to dispensary observation; calculate and prescribe the necessary food products for children of the first year of life.

PRN33. Determine the presence and degree of life activity restrictions, type, degree and duration of incapacity for work with the execution of the relevant documents, in accordance with the Legislation of the Russian Federation. conditions of a health care institution based on data on the disease and its course, and the specifics of a person's professional activity.

PRN35. In the service area using standard descriptive methods, analytical epidemiological and medico-statistical studies: conduct screening to identify the most important non-communicable diseases; evaluate the dynamics of morbidity rates, including chronic ones, when compared with static average data non-communicable diseases, disability, and mortality, integral health indicators; identify risk factors for the occurrence and course of diseases; form risk groups of the population.

PRN41. In the context of a health care facility or its subdivision using standard methods: conduct selection and use unified clinical protocols guidelines for the provision of medical care developed on the basis of evidence-based take part in the development of local protocols for providing medical care; conduct quality control of medical services based on: statistical data, expert evaluation, and sociological research data. research using indicators of structure, process, and performance; identify barriers to improving quality and safety medical assistance.

3. Academic discipline program

The educational process is organized according to the European Credit Transfer and Accumulation System (ECTS).

The program of the discipline “Anesthesiology and intensive care” is structured into one block.

Structure of the academic discipline

Topic names	Total hours	l.	pr.	i.w.s
1	**2**	**3**	**4**	**5**
Topic 1. Subject and tasks of anesthesiology and intensive care. Modern methods of anaesthetic support.	9	1	4	4
Topic 2. General principles of anaesthetic support for surgical interventions. Features of regional anesthesia.	9	1	4	4
Topic 3. General issues of intensive care. Methods and tools for assessing the patient's condition.	9	1	4	4
Topic 4. Methods of diagnosis and correction of disorders of water-electrolyte metabolism and acid-base state (CBS)	9	1	4	4
Topic 5. Intensive care for acute respiratory failure (ARF).	9	1	4	4
Topic 6. Intensive care of acute circulatory disorders.	9	1	4	4
Topic 7. Intensive care of shock conditions and traumatic injuries.	9	1	4	4
Topic 8. Intensive care of acute renal and acute hepatic insufficiency.	9	1	4	4
Topic 9. Intensive care unit comatose states.	9	1	4	4
Topic 10. General principles of intensive care for acute poisoning.	9	1	4	4
TOGETHER	**90**	**10**	**40**	**40**

4. Content of the academic discipline

4.1. Lecture plan

№ S. P.	TOPIC	Quantity hours
	General questions of anesthesiology. Definition of anesthesiology as an independent scientific and practical medical discipline, its role and place in the modern system of medical specialties. Organization of anesthetic support in Ukraine. Anesthesia, its types. Theories of anesthesia. Classification of modern methods anesthetics support. Components and methods of anesthesia main tasks: anesthesia, inhibition or shutdown of consciousness, muscle relaxation, maintenance of adequate ventilation and gas exchange, blood circulation, and metabolic processes.	2
	Types of anesthesia and regional anesthesia. Inhalation anesthesia. Equipment and tools for inhalation anesthesia.	2

	Inhaled anesthetics. Components of general anesthesia. Stages of anesthetic support. Stages and clinic of anesthesia. Non-inhalation anesthesia. Drugs for non-inhalation anesthesia. Advantages and disadvantages. Stages and clinic of anesthesia. Regional anesthesia. Types and methods of regional anesthesia. Features of general anesthesia in outpatient and urgent conditions. Complications of general and regional anesthesia. Occupational hazards in anesthesiology.	
	General questions of intensive care. Organization of resuscitation care and intensive care in Ukraine. Terminal states. Causes of primary cardiac arrest. Stages of cardiopulmonary and cerebral resuscitation. Signs of clinical death. Causes of airway obstruction and methods for restoring their patency. Artificial ventilation of lungs. Indirect heart massage. Evaluation of the effectiveness of resuscitation measures. Features of resuscitation in children of different age groups (newborns, infants, children from 1 year and older) and elderly people.	2
	Intensive care for circulatory disorders. Types of circulatory arrest. Scope and justification of drug therapy during intensive care, ways and methods of drug administration. ECG-diagnostics of the type of circulatory arrest. Determination of indications for defibrillation and open heart massage. Defibrillation techniques and safety rules for performing defibrillation. Intensive care after resuscitation: restoration of tissue perfusion, improvement of blood reology; restoration of gas exchange; correction of metabolic disorders. Intensive care of cerebral edema. Improvement of brain metabolism and elimination of reperfusion complications. Restoration of integrative brain function.	2
	Methods of objective assessment of the patient's(victim's) condition. Methods and tools for assessing the condition and determining the possibilities of saving the patient. Measures to restore brain functions. Clinical signs, biochemical and instrumental methods for determining brain death. The concept of euthanasia. Features of the relationship of a resuscitator with relatives of the victim and specialists of related specialties. Questions of deontology. Ethical and socio-legal issues.	2
TOGETHER		**10**

4.2. Practical training plan

№ S. P.	TOPIC	Quantity hours
1.	**Topic 1. Subject and tasks of anesthesiology and intensive care. Modern methods of anaesthetic support.** Definition of anesthesiology as an independent scientific and practical medical discipline on pain management and management of vital functions of the body, its role and place in the modern system of medical specialties. History of the development of anesthesiology and intensive care as a science and clinical discipline. The importance of implementing computer technology in the organization of work and clinical activities of an anesthesiologist. Advantages and disadvantages of various methods of anesthetic support. Clinical manifestations of various stages of anesthesia. Main stages of anesthetic support Selection of methods of anesthetic support for various surgical interventions. Tactics of preparation for surgery and postoperative intensive care of patients with various surgical profiles. Anesthesia complications, causes of their occurrence and decision-making on methods of their elimination.	4
2.	**Topic 2.General principles of anaesthetic support for surgical interventions. Features of regional anesthesia.** Anesthesia, its types. Theories of anesthesia. Classification of modern methods anaesthetic support. Components and methods of anesthesia main tasks: anesthesia, inhibition or shutdown of consciousness, muscle relaxation, maintenance of adequate ventilation and gas exchange, blood circulation, and metabolic processes. Inhalation anesthesia. Equipment and tools for inhalation anesthesia. Inhaled anesthetics. Stages of anesthetic support. Stages and clinic of anesthesia. Non-inhalation anesthesia. Drugs for non-inhalation anesthesia Advantages and disadvantages. Regional anesthesia. Types and methods of regional anesthesia. Techniques and methods of spinal puncture and catheterization of the epidural space. Various methods of intensive care of patients in intensive care.	4
3.	**Topic 3. General issues of intensive care. Methods and tools for assessing the patient's condition.** Organization of emergency care and intensive care. Terminal states. Causes of primary cardiac arrest. Stages of cardiopulmonary and cerebral resuscitation. Causes of airway obstruction and methods for restoring their patency. Artificial ventilation of lungs. Indirect heart massage. Evaluation of the effectiveness of resuscitation measures. Types of circulatory arrest. Scope and justification of drug therapy during intensive care, ways and methods of drug administration. ECG-diagnostics of the type of circulatory arrest. Determination of indications for defibrillation and open heart massage. Defibrillation techniques and safety rules for performing defibrillation. Intensive care of cerebral edema. The concept of decortications, deceleration, and brain death.	

	Clinical signs, biochemical and instrumental methods for determining brain death. The concept of euthanasia. The problem of life and death. Questions of deontology. Ethical and socio-legal issues.	4
4.	**Topic 4. Methods of diagnostics and correction of disorders of water-electrolyte metabolism and acid-base state (CBS)** Physiological mechanisms of maintaining the internal environment of the body, methods of its control. Pathophysiology of water-electrolyte metabolism and acid-base state. The concept of a homeostatic functional system, molarity, osmolarity. Types of water exchange disorders, their causes and methods of diagnosis and correction. Exchange of basic electrolytes-sodium, potassium, chlorine, calcium-causes of possible disorders, methods of correction. Physiological and buffer systems of CBS regulation. Types of disorders of the acid-base state, methods of laboratory diagnostics and intensive care of metabolic acidosis, metabolic alkalosis, respiratory acidosis and respiratory alkalosis.	4
5.	**Topic 5. Intensive care for acute respiratory failure(ODN).** Physiology and pathophysiology of respiration non-respiratory lung function. Anatomical and physiological features of the respiratory system in children and the elderly. Etiology and pathogenesis of ODN, classification, clinic. Diagnostic algorithms. Hypoxia, its types, clinical signs, diagnosis. Hypercapnia, clinical signs. Methods of intensive care of ODN. Means of ensuring free patency of the respiratory tract and improving the drainage function of the lungs. Fight against hypoxemia. Methods of oxygen therapy. Indications for the use of spontaneous breathing under constant positive pressure (SDPPT) and artificial lung ventilation(AVL), contraindications and possible complications. Application of hyperbaric oxygenation. Features of intensive care in children with acute respiratory failure.	4
6.	**Topic 6. Intensive care unit acute circulatory disorders.** Physiology and pathophysiology of blood circulation. Systemic oxygen transport as an indicator of the adequacy of the cardiovascular system function. Mechanisms of development of acute circulatory insufficiency. Determination of the types of critical hemodynamic disorders - cardiac and vascular insufficiency, hypovolemia. Criteria for microcirculation disorders. Causes, clinical manifestations and diagnosis of acute heart failure, cardiac arrhythmias. The main directions of intensive care. Age-related features of the cardiovascular system and mechanisms of development of critical hemodynamic disorders and their treatment.	4

	Pathophysiology, diagnosis, features of the course and intensive care for dizziness and collapse.	
7.	**Topic 7. Intensive care shock conditions and traumatic injuries.** Shock, types of shock. Pathophysiology, diagnosis, features of the course, intensive care for various types of shock (hemorrhagic, traumatic, burn, anaphylactic, septic). Features of infusion-transfusion therapy of various types of shock, characteristics of infusion media. Pathophysiology, diagnosis, features of the course, intensive care and measures to prevent complications in severe traumatic brain injury(TBI), polytrauma, prolonged compression syndrome, electrotrauma.	4
8.	**Topic 8. Intensive care of acute renal and acute hepatic insufficiency.** Anatomy and physiology of the urinary system. Acute renal failure, forms of acute renal failure, pathophysiology, clinic, physiological and biochemical disorders. Diagnostic methods. Algorithms of intensive care (IT) at different stages of acute renal failure. Methods of extra-renal purification (hemodialysis, hemo filtration, ultrafiltration, peritoneal dialysis). Etiological factors, pathophysiology of development, clinical picture of acute liver failure. Methods of treatment of acute hepatic insufficiency.	4
9.	**Topic 9. Intensive care comatose states.** Methods of differential diagnosis of comatose states. Determination of the depth of coma. Intensive care for comas of various etiologies (hypo-, hyperglycemic, hyperosmolar, hepatic, uremic). Intensive care of cerebral edema, convulsive and hyperthermic syndromes in children.	4
10	**Topic 10.General principles of intensive care for acute poisoning.** Intensive care of acute poisoning with tranquilizers, barbiturates, opiates, organophosphates, ethyl and methyl alcohols, carbon monoxide, acids and alkalis, poisonous mushrooms. Features of emergency care for bites of poisonous insects, snakes and animals.	4
TOGETHER		**40**

4.3. Tasks for independent work

For independent work of students, tasks of a theoretical nature are submitted, which are not sufficiently thoroughly considered in the framework of lectures and practical classes. The student must work through the literature sources and be ready to answer the questions posed during practical classes and the test. Practical tasks include tests and tasks.

№ S. P.	TOPIC	Number of hours
1.	Development of anesthesiology and resuscitation in Ukraine and the world	4

2.	Choice of analgesia method and features of anaesthetic support in certain branches of surgery	4
3.	Features of anesthesia in outpatient and urgent conditions	4
4.	Methods of diagnostics and correction of disorders of water-electrolyte metabolism and acid-base state (CBS). Physiological and buffer regulatory systems.	4
5.	Shock conditions and traumatic injuries. Pathophysiology of certain types of shock. Traumatic shock. Polytrauma. Prolonged compression syndrome. Traumatic brain injury. Electrical injury	4
6.	Etiological factors, pathophysiology of development, clinical picture of acute renal and hepatic insufficiency	4
7.	Methods of differential diagnosis of comatose states	4
8.	Intensive care of acute respiratory failure in certain pathological conditions in the postoperative period with drowning and aspiration syndrome, foreign bodies of the respiratory tract, hanging, mechanical asphyxia	4
9.	Causes, clinical manifestations and diagnosis of acute heart failure, cardiac arrhythmias	4
10.	The concept of acute poisoning	4
TOGETHER		**40**

Individual tasks

Selection and review of scientific literature on the topic of the program in anesthesiology and intensive care at the student's choice with the writing of an abstract and its public defense.

Selection and review of scientific literature on the subject of research work of the department with the preparation of a scientific report at a meeting of the SSS or at student conferences.

Scientific research on the subject of research work of the department with the publication of the results in scientific publications.

Participation in the student scientific circle and presentations at scientific forums. Participation in the student Olympiad in the discipline.

Duty in intensive care units.

Typical test problems to solve in practical classes

(examples)

1. GND in the early postoperative period leads to:

1) increasing blood pressure with vasopressors;

2) non-physiological effects of the device of artificial ventilation of lungs;

3) postoperative pain syndrome;

4) restriction of diaphragm mobility due to intestinal paresis.

2. To ensure effective postoperative analgesia, apply:

1) mezaton;

2) treatment of analgesia with narcotic and non-narcotic analgesics;

3) epidural blockage;

4) ephedrine.

3. Normalization of sputum drainage is carried out using:

1) aerosol inhalation with warm water;

2) isotonic sodium chloride solution;

3) mucolytic agents;

4) vibrating and percussive chest massage;

5) all answers are correct.

4. Mendelssohn's syndrome is:

1) a sharp decrease in blood pressure;

2) acute vascular insufficiency;

3) collapse;

4) significant aspiration of gastric contents, which can lead to asphyxia due to bronchial obstruction, to the development of an asthmatic condition and pulmonary edema.

5. Treatment of aspiration syndrome:

1) immediate removal of contents from the respiratory tract;

2) intravenous atropine sulfate;

3) eufillin;

4) glucocorticoids;

5) etamzylate.

6. Prevention of Mendelssohn's syndrome:

1) removal of gastric contents before surgery;

2) prescribing antacids during premedication;

3) intubation in the Fowler position on the operating table with the use of-

using the Cellik method.

7. Diagnostic criteria for RDSD:

1) transfer of fluid from the tissues to the vascular bed;

2) increased renal blood flow;

3) bilateral lung infiltration on a frontal chest X-ray;

4) vasoconstriction. 49

8. Intensive care for RDSD:

1) respiratory therapy aimed at eliminating GND;

2) treatment of the underlying disease that caused RDSD;

3) prevention (treatment) of multiple organ failure, which

accompanies the RDSD.

9. For the treatment of asthmatic condition in patients can be used exclusively:

1) nor epinephrine;

2) mezaton;

3) angiotensin;

4) prednisone

10. Treatment of patients with asthmatic condition in the first 6 hours is carried out using the main directions:

1) increase of CVP to 150-200 mm of water.;

2) restoration of airway patency;

3) normalization of hemodynamics;

4) correction of metabolism.

4.4. Ensuring the educational process

1. Multimedia projectors, computers, screens for multimedia presentations, lecture presentations.

2. Diagrams, tables, tests, and videos.

3. Technical training facilities: a gym operating room.

4. Differential credit tickets.

5. Final control

List of questions of final control (differential test)

1. Clinical death, definition, diagnosis.
2. Signs of resuscitation effectiveness, indications for stopping resuscitation.
3. Routes of administration of medications in resuscitation and their justification.
4. Electrical defibrillation technique.
5. Indications for direct heart massage.
6. Complications of resuscitation.
7. The concept of decortications, deceleration, and brain death.
8. The main directions of treatment in the intensive care period.
9. Intensive care of brain edema.
10. Classification of types of anesthesia.
11. The main nodes of the anesthesia machine.
12. Measures to prevent fires and explosions in the operating room.
13. Respiratory circuits, advantages and disadvantages.
14. Inhaled anesthetics: pharmacokinetics, clinical course .
15. Components of general anesthesia.
16. Stages of anesthetic support.
17. Premedication and its types.
18. Preparation of patients for surgery and anesthesia.
19. Clinic of anesthesia with ether.
20. Masked method of general anesthesia.
21. Endotracheal anesthesia. Indications and methods of treatment.
22. Pharmacology of muscle relaxants
23. Complication of general anesthesia.
24. Non-alcoholic anesthetics: pharmacokinetics, clinical course.
25. Types and methods of regional anesthesia.
26. Features of general anesthesia in outpatient and urgent conditions.
27. Features of preparing patients for surgery and anesthesia.
28. Physiological and pathophysiological features of general anesthesia in children and elderly patients

29. The role of water and electrolytes in the body.
30. The concept of osmolarity and its correction.
31. Clinical signs of dehydration and hyperhydration.
32. Hypertonic dehydration. Causes, clinical signs, and methods of correction.
33. Isotonic dehydration. Causes, clinical signs, and methods of correction.
34. Hypotonic dehydration. Causes, clinical signs, and methods of correction.
35. Hypertonic hyperhydration. Causes, clinical signs, and methods of correction.
36. Isotonic hyperhydration. Causes, clinical signs, and methods of correction.
37. Hypotonic hyperhydration. Causes, clinical signs, and methods of correction.
38. Causes and signs of hypo-and hypernatremia, treatment methods.
39. Pathophysiological disorders in hypo-and hyperkalemia, clinic, diagnosis, correction.
40. The concept of acidosis, diagnosis, correction.
41. The concept of alkalosis, diagnosis, correction.
42. Characteristics of solutions for infusion therapy.
43. Indications for parenteral nutrition.
44. Features of infusion therapy and correction of VEO and CBS disorders in diabetes mellitus.
45. Features of infusion therapy and correction of VEO and CBS disorders in the postoperative period.
46. Features of infusion therapy and correction of VEO and CBS disorders in peritonitis.
47. Features of infusion therapy and correction of VEO and CBS disorders in pancreatic necrosis.
48. Causes and pathogenesis of acute renal failure (ARF).
49. Differential diagnosis of prerenal, renal and postrenal oliguria, anuria.
50. Stages of the clinical course of acute renal failure. Basic principles of acute renal failure treatment.
51. Uremic coma, principles of intensive care.
52. Indications for hemodialysis.
53. Calculation of daily fluid requirements in patients with acute renal failure.
54. Causes of acute liver failure.
55. Clinical manifestations of acute hepatic insufficiency. Laboratory diagnostics.
56. Basic principles of treatment of liver damage.
57. Hepatic coma, principles of intensive care
58. Basic principles of treatment of acute poisoning.
59. Basic principles of forced diuresis.
60. Extracorporeal detoxification methods, indications and contraindications, technical means, technique of implementation.
61. Principles of antidote therapy.
62. IT is used for poisoning with methyl alcohol.
63. IT is used for poisoning with ethyl alcohol and its surrogates.
64. IT is used for poisoning with opiates and barbiturates.
65. IT is used for poisoning with organophosphorus substances.
66. IT is used for poisoning with acids and alkalis.
67. IT in case of carbon monoxide poisoning.
68. IT is used for poisoning with poisonous mushrooms.
69. Features of emergency care for insect and animal bites.
70. Types of consciousness disorders, assessment of the depth of consciousness disorders.
71. Principles of IT in comatose states of various origins.

72. IT of hypoglycemic coma.
73. IT of hyperglycemic coma.
74. IT of hyperthermic syndrome in children.
75. Classification of hypoxia, clinic, differential diagnosis of various types of hypoxia.
76. Hypercapnia, clinic.
77. Basic principles of intensive care ODN.
78. Oxygen therapy: methods, indications, toxic effect of oxygen.
79. Mechanical ventilation, indications, methods, and performance criteria.
80. Methods for restoring airway patency and improving the drainage function of the lungs.
81. Principles of differentiated therapy of asthmatic condition.
82. Emergency care for various types of pulmonary edema.
83. Aspiration syndrome, pathogenesis, clinical manifestations, intensive care.
84. Resuscitation and intensive care for various types of drowning.
85. Adult respiratory distress syndrome, etiology, pathogenesis, clinical signs, intensive care.
86. Resuscitation and intensive care of troboembolic pulmonary artery and its branches.
87. TREATMENT of acute heart failure
88. TREATMENT of acute cardiac arrhythmias.
89. Features of the course and intensive care for dizziness and collapse.
90. TREATMENT of traumatic shock.
91. TREATMENT of hemorrhagic shock.
92. Burn Shock Treatment
93. TREATMENT of anaphylactic shock.
94. IT of toxic and infectious shock.
95. Resuscitation and IT for electrotrauma.
96. Resuscitation and IT in the event of a lightning strike.
97. Resuscitation and intensive care for long-term compression syndrome.
98. IT for polytrauma.

"0" ticket option dif. offset

Petro Mogyla Black Sea National University

Higher education level-Master's degree

Branch of knowledge: 22 Healthcare

Specialty 222 Medicine

Academic discipline – **ANAESTHESIOLOGY AND INTENSIVE CARE**

Option # 0

1. Signs of resuscitation effectiveness, indications for stopping resuscitation **- the maximum number of points is 20.**
2. The concept of alkalosis, diagnosis, correction **- the maximum number of points is 20.**
3. Basic principles of forced diuresis **- the maximum number of points is 20.**
4. Intensive care for anaphylactic shock **- the maximum number of points is 20.**

Approved at the meeting of the Department of Therapeutic and Surgical Disciplines, protocol no. _ _ _ of"__" _____ 2021 city of

Examiner assoc.

Example of a KKR task

Option # 0

I. Question

but. Clinical manifestations of acute hepatic insufficiency..

would. Electrical defibrillation technique.

II. Tests

1. In the treatment of patients with pulmonary edema, the main directions are used, except:

1) improve tissue oxygenation;

2) defoaming systems;

3) reduction of blood pressure in the small circle of blood circulation, before and after exercise;

4) dehydration of the lungs by reducing BCC;

5) it is necessary to keep the average blood pressure at least 100 mm Hg.

2. Plasmoespanders have all infusion measures except:

1) 7.5% sodium chloride solution;

2) 10% solution of hydroxyethyl starch;

3) 10% sodium chloride solution;

4) 10% dextran-40 solution;

5) gelofuzin.

3. In the treatment of anaphylactic shock, first of all, you need to apply:

1) dexamethasone;

2) prednisone;

3) adrenaline;

4) diphenhydramine;

5) norepinephrine.

4. Risk factors for PE:

1) deep vein thrombosis of the lower extremities and pelvis;

2) operations on the abdominal and pelvic organs;

3) prolonged immobilization, especially in the elderly and senile;

4) cardiovascular diseases;

5) malignant neoplasms; 6) pregnancy and childbirth;

7) nephrotic syndrome;

8) young age.

5. The gold standard in the diagnosis of PE is:

1) computed tomography of the chest cavity;

2) x-ray of the chest cavity;

3) Ultrasound of the lungs and bronchi;

4) bronchoscopy;

5) X-ray contrast angiopulmonography.

6. In conditions of hypovolemic shock, long-term (for 4 hours) maintenance of elimination of intravascular fluid deficiency is achieved by infusion:

1) hypertonic sodium chloride solution 7.5%;

2) refortanu plus;

3) reosorbylact;

4) Ringer's solution;

5) 5% glucose solution;

6) perfluorane.

7. To reduce the formation of the inflammatory mediator bradykinin in conditions of traumatic shock, you should apply:

1) diphenhydramine;

2) prednisone;

3) heparin;

4) calcium chloride;

5) kontrikal.

8. Antagonism to dopamine is shown by all drugs with the exception of:

1) haloperidol;

2) aminazine;

3) cerucalu;

4) kontrikala.

9. One of the reliable signs of the presence of heart weakness is:

1) increase in blood pressure with stable CVP;

2) lower blood pressure with increased CVP;

3) decrease in blood pressure with a drop in CVP;

4) an increase in blood pressure with a drop in CVP.

10. In the course of treatment of PE, the primary measure is:

1) blood transfusion;

2) dopamine use;

3) use of epinephrine;

4) application of vikasol, aminocaproic acid and vitamin C;

5) application of plasma substitutes;

6) anticoagulant therapy;

7) thrombolytic agents.

And so 15 options

6. Evaluation criteria and diagnostic tools for learning outcomes

Control methods

- Survey (testing of theoretical knowledge and practical skills).
- Test control.
- Writing a review of scientific literature (abstracts).
- Preparing presentations.

Current control. Testing in practical classes of theoretical knowledge and development of practical skills, as well as the results of independent work of students. They are supervised by teachers according to the specific purpose of the curriculum. Assessment of the level of students ' training is carried out by interviewing students, solving and analyzing situational problems and test tasks, and monitoring the assimilation of practical skills.

Intermediate control. Checking the possibility of using students ' theoretical knowledge and practical skills on all the topics studied, as well as the results of independent work of students for practical application. Performed at the last lesson by topic by passing practical skills, testing.

Final control. To the final control (dif. credit) students who have attended all the lectures and classroom classes provided for in the curriculum, who have completed their independent work in full, and who have scored at least the minimum number of points in the course of training are allowed – **70 points per semester.**

Distribution of points awarded to students

A student can get a maximum of 120 points for their current academic activity. Accordingly, a positive assessment at each seminar session can be: **from 3.5 to 6 points.** Score below **3.5 points** means "unsatisfactory", classes are not counted and are subject to testing in accordance with the established procedure**.**

In order to evaluate the results of training, a final control is carried out in the form of a dif. test. Maximum score per diff. credit – **80 points**. Dif. credit is considered completed if the student has received at least **50 points**.

Assessment of student performance

Type of activity (task)	Maximum number of points
practical lesson 1	6
practical lesson 2	6
practical lesson 3	6
practical lesson 4	6
practical lesson 5	6
practical lesson 6	6
practical lesson 7	6
practical lesson 8	6
practical lesson 9	6
practical lesson 10	6
practical lesson 11	6
practical lesson 12	6
practical lesson 13	6
practical lesson 14	6
practical lesson 15	6
practical lesson 16	6
practical lesson 17	6
practical lesson 18	6
practical lesson 19	6
practical lesson 20	6
Together	**120**
Diff. credit	**80**
Together with the dif. test	**200**

Criteria for evaluating knowledge

With a score of 5.1-6 points in the practical lesson and 71-80 points in the test (A on the ECTS scale and 5 on the national scale) The student's response is evaluated if they demonstrate a deep knowledge of anesthesiology and intensive care, the ability to apply theoretical material to practical analysis, and have no inaccuracies.

With a score of 4.1-5 points in the practical lesson and 61-70 points in the test (B and C on the ECTS scale and 4 on the national scale) the answer is evaluated if it shows knowledge and the ability to apply it practically, but some fundamental inaccuracies are allowed.

With a score of 3.5-4 points in the practical lesson and 50-60 points in the test (D and E on the ECTS scale and 3 on the national scale) the student's answer is evaluated on the condition that he knows the basic theoretical provisions and can use them in practice.

7. Recommended sources of information

7.1. Main features

1. Glumcher F. S., Chepky L. P., Usenko L. V. et al. Anesthesiology and intensive therapy: textbook; edited by Professor Yu.m. Sirenko. - K., 2011. - 128s.

2. Vanyushko V., Kanyuk I. anesthesia and intensive care. Lviv: Kamenyar Publ., 2005.

3. Kovalchuk L. Ya., Gnativ V. V., Bekh M. D. et al.Anesthesiology resuscitation and intensive care of emergency conditions. Ternopil: Ukrmedkniga publ., 2003, 324 p. (in Russian).

4. Paliy L. V. Anesthesiology and intensive care: textbook. — 2nd ed. - K.: Meditsina publ., 2011.

5. Paliy L. V. Osnovy reanimatologii: ucheb. posobie [fundamentals of resuscitation: textbook]. 2nd ed., Moscow: Meditsina publ., 2008.

7. Chepky L. P., Novitskaya-Usenko L. V., Tkachenko R. A. Anesthesiology and intensive care. Textbook for higher education institutions of the III-IV accreditation level. Moscow: Vysshaya Shkola publ., 2003, 399 P.

7.2. Additional features

1. Military and Clinical Toxicology. Textbook for students of higher medical educational institutions of the IV level of accreditation / ed. by M. M. Kazachka. Kiev, 2007, 376 p. (in Russian).

2. Handbook of medical care at the prehospital stage (edited by I. S. Zozuli). Kiev, "Health", 2004.

3.Zhebel V. M., Shaprinsky V. A., Gumenyuk A. F., Lozinsky S. E. First Aid in emergency situations. Vinnytsia: Delo Publ., 2005.

4. Emergency conditions in Endocrinology: textbook – method. manual. (M. V. Vlasenko, A.V. Palamarchuk, V. S. Vernigorodsky and others..)- K.: RVH "Queen", 2010. – 104s.

5. Emergency conditions in medicine / ed.by Professor V. P. Maly. - Vinnytsia, 2000.

6. Emergency medical care. Edited by F. S. Glumcher, V. F. Moskalenko K.:" Medicine " – 2006. - 632 P.

7.Titov I. I., Voloshinsky O. V., Glushko L. V., Datsyuk O. I. algorithms for providing emergency care in critical conditions. Vinnytsia: Novaya kniga publ., 2010.

8. Shved M. I., Gudyma A. A., Geryaks.M. et al. emergency medical care: manual-Ternopil: TSMU, 2015-420 p.

Information resources

1. Vernadsky National Library – www.nbuv.gov.ua.

2. State Emergency Service of Ukraine – www.dsns.gov.ua.

3. Ministry of Health of Ukraine-http://www.moz.gov.ua.