

PRIVATE HIGHER EDUCATIONAL INSTITUTION
"INTERNATIONAL ACADEMY OF ECOLOGY AND MEDICINE"
Department of Surgery

WORKING PROGRAM OF EDUCATIONAL DISCIPLINE

"Anesthesiology and intensive care"

LEVEL OF HIGHER EDUCATION Second (master's) level

DEGREE OF HIGHER EDUCATION Master's degree

BRANCH OF KNOWLEDGE 22 Healthcare

SPECIALTY 222 Medicine


Reviewed and approved
at the meeting of the department of surgery
Protocol No. 1, dated August 31 , 2022

Kyiv 2022

Working program of educational discipline Anesthesiology and intensive care for the preparation of students of higher education of the second (master's) level of higher education in specialty 222 Medicine.

Agreed

The first vice-rector

A handwritten signature in blue ink, appearing to be 'AS', written over a horizontal line.

(signature)

Oleksandra SOROKA

(initials and surname)

INTRODUCTION

The study program of the academic discipline "Anesthesiology and intensive care" is compiled for students of the 5th year of the field of knowledge 22 "Health care" specialty 222 "Medicine"

Description of the academic discipline (abstract)

"Anesthesiology and intensive care" as an educational discipline is an integral part of clinical medicine, therefore, studying the basic principles of this branch of science is an important part of training a doctor of any specialty.

It lays the foundations for the study by students 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 educational disciplines where methods of analgesia and intensive care are used, which involves the integration of teaching with these disciplines and the formation of skills to apply knowledge in the process of further education and professional activity.

Provides an opportunity to acquire practical skills and develop professional skills for diagnosis and provision of emergency medical care and intensive therapy in certain pathological conditions and during the period of patient care. The assimilation of theoretical material is accompanied by the acquisition of relevant integral, general and professional competencies.

The program of the discipline "Anesthesiology and Intensive Care" is structured into one module, which includes 3 content modules. The volume of the student's academic load is described in ECTS credits - credits that are credited to students upon successful mastering of the corresponding module (credit).

Module: Anesthesiology and intensive care

Content modules:

1. General resuscitation and anesthesiology;
2. General issues of intensive care;

The subject of study of the educational discipline is the basics of anesthesiology and intensive therapy; clinic, diagnostics, first aid, principles of treatment of critical conditions that arise in the clinic of internal medicine, pediatrics, surgery, traumatology and orthopedics, neurosurgery, urology, obstetrics and gynecology.

Interdisciplinary connections. The discipline "Anesthesiology and Intensive Care" is based on the knowledge gained by students during the study of such fundamental disciplines as human anatomy; histology, biochemistry, physiology, pathomorphology ; pathophysiology; propaedeutics of internal medicine, pediatrics, pharmacology and integrates with these disciplines.

Description of the curriculum in the discipline "ANESTHESIOLOGY AND INTENSIVE THERAPY"

Structure academic discipline	Number hours, with them				Year teaching	Kind control
	In total	Auditory		SRS		
		Lectures	Practical classes			
	90	10	40	40	5th	
Credits ECTS	3.0					
Module 1:Content modules 3	90 hours /3.0 ECTS credits	10	40	40		Differentiatedtest

1. PURPOSE AND TASK OF THE DISCIPLINE

The study of anesthesiology and intensive care will help students to get a holistic idea of anesthesiology and intensive care as an independent section of the clinical discipline, which studies and develops issues of theory and practice of protecting the body from extreme influences (aggressions) and uses unified methods of regulation or temporary displacement of vital functions at their violations (terminal states, anesthesia, special research methods, etc.).

1.1. The purpose of teaching the educational discipline "Anesthesiology and Intensive Care" is to acquire theoretical and practical knowledge of etiology, pathogenesis, classification, clinical manifestations, methods of diagnosis, intensive therapy of the main syndromes accompanying severe violations of vital functions. Studying the etiology, pathogenesis, pathophysiology of clinical death and terminal conditions and mastering the elements of cardiopulmonary resuscitation, which allows to restore the adequate functioning of life support systems. The student's acquisition of knowledge and professional skills in anesthesiological provision of operative interventions in various fields of medicine.

1.2. The main tasks of studying the discipline "Anesthesiology and Intensive Care" are:

- Teach students the main syndromes that accompany severe violations of vital functions;
- diagnose and provide medical assistance in emergency situations;
- interpret the general principles of intensive therapy in emergency situations;
- draw up an examination plan and interpret the results of laboratory and instrumental examination methods;
- demonstrate the ability to perform the necessary medical manipulations;
- to be able to establish a diagnosis of clinical death and carry out resuscitation measures;
- demonstrate the ability to maintain medical documentation;
- to possess the moral and deontological principles of professional subordination.

1.3 Competencies and learning outcomes, the formation of which contributes to the discipline:

general competences	
ZK-1	Ability to abstract thinking, analysis and synthesis.
ZK-2	Ability to learn and master modern knowledge.
ZK-3	Ability to apply knowledge in practical situations.
ZK-4	Knowledge and understanding of the subject area and understanding of professional activity.
ZK-5	Ability to adapt and act in a new situation.
ZK-6	Ability to make informed decisions.
ZK-7	Ability to work in a team.
ZK-8	Ability to interpersonal interaction.
ZK-10	Ability to use information and communication technologies.
ZK-11	Ability to search, process and analyze information from various sources.
ZK-12	Determination and persistence in relation to assigned tasks and assumed responsibilities.
Professionals competence (FC)	
FC-1	Ability to collect medical information about the patient and analyze clinical data.

FC-2	Ability to determine the necessary list of laboratory and instrumental studies and evaluate their results.
FC-3	Ability to establish a preliminary and clinical diagnosis of the disease.
FC-5	The ability to determine the nature of nutrition in the treatment and prevention of diseases.
FC-6	Ability to determine the principles and nature of treatment and prevention of diseases.
FC-7	Ability to diagnose emergency conditions.
FC-8	Ability to determine tactics and provide emergency medical care.
FC-10	Ability to perform medical manipulations.
FC-11	Ability to solve medical problems in new or unfamiliar environments in the presence of incomplete or limited information, taking into account aspects of social and ethical responsibility.
FC-16	Ability to maintain medical documentation, including electronic forms.
FC-21	It is clear and unambiguous to convey one's own knowledge, conclusions and arguments on health care problems and related issues to specialists and non-specialists, in particular to people who are studying.
FC-24	Adherence to ethical principles when working with patients and laboratory animals.
FC-25	Adherence to professional and academic integrity, to be responsible for the reliability of the obtained scientific results.
Software the results training (PRN)	
PRN-1	Have thorough knowledge of the structure of professional activity. To be able to carry out professional activities that require updating and integration of knowledge. To be responsible for professional development, the ability for further professional training with a high level of autonomy.
PRN-3	Specialized conceptual knowledge, which includes scientific achievements in the field of health care and is the basis for conducting research, critical understanding of problems in the field of medicine and related interdisciplinary problems.
PRN-4	Identify and identify leading clinical symptoms and syndromes (according to list 1); according to standard methods, using preliminary data of the patient's history, data of the patient's examination, knowledge about the person, his organs and systems, establish a preliminary clinical diagnosis of the disease (according to list 2).
PRN-5	Collect complaints, history of life and diseases, evaluate psychomotor and physical development of the patient, state of organs and systems of the body, based on the results of laboratory and instrumental studies, evaluate information regarding the diagnosis (according to list 4), taking into account the age of the patient.
PRN-6	Establish the final clinical diagnosis by making a reasoned decision and analyzing the received subjective and objective data of clinical, additional examination, differential diagnosis, observing the relevant ethical and legal norms, under the supervision of the head physician in the conditions of the health care institution (according to list 2).
PRN-7	Assign and analyze additional (mandatory and optional) examination methods (laboratory, functional and/or instrumental) (according to list 4) of patients with diseases of organs and body systems for differential diagnosis of diseases (according to list 2).

PRN-8	Determine the main clinical syndrome or what causes the severity of the condition of the victim/injured (according to list 3) by making a reasoned decision and assessing the person's condition under any circumstances (in the conditions of a health care institution, outside its borders) , including in conditions of emergency and hostilities, in field conditions, in conditions of lack of information and limited time.
PRN-9	Determine the nature and principles of treatment (conservative, operative) of patients with diseases (according to list 2), taking into account the patient's age, in the conditions of a health care institution, outside its borders and at the stages of medical evacuation , including in field conditions, on the basis of a preliminary clinical diagnosis, observing the relevant ethical and legal norms, by making a reasoned decision according to existing algorithms and standard schemes, in case of the need to expand the standard scheme, be able to justify personalized recommendations under the control of the head physician in the conditions of a medical institution.
PRN-10	Determine the necessary mode of work, rest and nutrition on the basis of the final clinical diagnosis, observing the relevant ethical and legal norms, by making a reasoned decision according to existing algorithms and standard schemes.
PRN-14	Determine tactics and provide emergency medical care in emergency situations (according to list 3) in limited time in accordance with existing clinical protocols and treatment standards.
PRN-17	Perform medical manipulations (according to list 5) in the conditions of a medical institution, at home or at work based on a previous clinical diagnosis and/or indicators of the patient's condition by making a reasoned decision, observing the relevant ethical and legal norms.
PRN-18	To determine the state of functioning and limitations of a person's vital activities and the duration of incapacity for work with the preparation of relevant documents, in the conditions of a health care institution, based on data about the disease and its course, peculiarities of the person's professional activity, etc. Maintain medical documentation regarding the patient and the contingent of the population on the basis of regulatory documents.
PRN-21	Search for the necessary information in the professional literature and databases of other sources, analyze, evaluate and apply this information.
PRN-22	Apply modern digital technologies, specialized software, and statistical methods of data analysis to solve complex healthcare problems.
PRN-24	To organize the necessary level of individual safety (own and the persons he cares for) in case of typical dangerous situations in the individual field of activity.
PRN-25	It is clear and unambiguous to convey one's own knowledge, conclusions and arguments on health care problems and related issues to specialists and non-specialists.
PRN-27	Communicate freely in the national and English languages, both orally and in writing to discuss professional activities, research and projects.

According to with requirements educational and professional programs students should:

know:

- etiology, pathogenesis, pathophysiology clinical death and terminal conditions;
- methods diagnostics and clinical course basic syndromes, what accompany heavy violation vital functions;
- algorithms intensive therapy urgent conditions;

- general principles and methods anesthesiological software operational interventions ;

be able:

- set diagnosis clinical death and to spend resuscitation activities;
- to determine amount examinations and give their assessment in case of violation vitally important functions;
- make a plan for an intensive therapy in urgent cases conditions;
- software passability respiratory ways;
- intubation trachea on mannequins;
- carrying out artificial ventilation lungs the simplest methods ("mouth to mouth", "mouth to nose");
- carrying out an artificial ventilation lungs bag Ambu and with the help of S-shaped tubes;
- technique carrying out indirect massage hearts;
- technique carrying out defibrillation hearts;
- calculation and methods corrections per diem water balance sheet;
- calculation deficits and methods corrections basic electrolytes (potassium, sodium, chlorine);
- definition species disorders acid-base state (KLS) and their corrections

2. Informative amount educational disciplines

On study educational disciplines is assigned 3 ECTS/90 credits hours

Topic 1. Cardiopulmonary and cerebral reanimation (SLCR).

Development resuscitation and intensive therapy in Ukraine and the world Organization intensive care unit help and intensive therapy in Ukraine.

Terminal state Reasons primary stops hearts Stages cardiopulmonary and cerebral resuscitation

Immediate stage of SLCR. Signs of clinical death. Causes of airway obstruction and methods of restoring their patency. Artificial ventilation of the lungs. Indirect heart massage. Rating efficiency intensive care measures

Specialized stage SLTCR. Kinds stops blood circulation Amount and justification medicinal therapy under time resuscitation, ways and methods introduction drugs ECG- diagnosis type stops blood circulation Definition testimony to defibrillation and open massage hearts Defibrillation technique and rules security at performance defibrillation

III stage of the SLCR. Methods and means of assessing the condition and determining the possibilities of rescue the patient Activities of restoration functions brain Pathogenesis, clinical course post-resuscitation disease. Concepts of decortication, decerebration and brain death. Clinical signs, biochemical and instrumental methods of determining brain death. Concept of euthanasia . The problem of life and death. Peculiarities of the relationship between the intensive care physician and the relatives of the victim and specialists adjacent specialties Question deontology Ethical and socio-legal problems

Intensive therapy of post- resuscitation disease: restoration of tissue perfusion, treatment syndrome "little emission", improvement rheology blood; restoration gas exchange; correction metabolic disorders. Intensive therapy of cerebral edema. Improvement of metabolism brain and elimination of reperfusion complications. Restoration of the integrative function of the main brain

Features carrying out resuscitation in children different aged groups (newborns, babies children from 1 year and older) and people inclined age

Topic 2. General questions of anesthesiology

Definition of anesthesiology as an independent scientific and practical medical discipline about analgesia and management of vital body functions, its role and place in modern system medical specialties Development of anesthesiology in Ukraine and the world Organization anesthesiological software in Ukraine.

Narcosis, its types. Theories of narcosis. Classification of modern methods anesthesiological software. Components and methods of anesthesia, main tasks: analgesia, inhibition or exclusion of consciousness, muscle relaxation, maintenance of adequate ventilation and gas exchange, blood circulation, metabolic processes.

Inhalation anesthesia. Equipment and tools for inhalation anesthesia. Inhalation anesthetics: ether, fluoroethane , diazot oxide. Components general anesthesia Stages anesthesiological software. Stages and clinic narcosis Masked method general anesthesia

Non-inhalable narcosis. Drugs for non-inhalation anesthesia: ketamine , thiopental sodium, oxybutyrate sodium, propofol _ Benefits and disadvantages Stages and anesthesia clinic.

Regional anesthesia. Kinds and methods regional anesthesia Machinery and methods spinal puncture and catheterization epidural space

Features general anesthesia in ambulatory and urgent conditions.

Choosing a method of analgesia in emergency surgery. Peculiarities of preparing patients for surgery and narcosis Complication general and regional anesthesia

Professional harmfulness in of anesthesiology.

Topic 3. Clinical anesthesiology

The choice of the method of analgesia and features of anesthetic support during operations on the head and neck General anesthesia in neurosurgery.

The choice of the method of analgesia and features of anesthetic support during operations on bodies chest cavities

The choice of the method of analgesia and features of anesthetic support during operations on bodies abdominal cavities

Choice method pain relief and features anesthesiological software at traumatological and orthopedic operations

General anesthesia in midwifery and gynecology: pain relief at childbirth general anesthesia with small obstetric interventions , anesthesia with caesarean autopsy

Physiological and pathophysiological features of general anesthesia in children and patients inclined age

Intense therapy and preparation patients to operational intervention at stenosis gatekeeper, intestinal obstruction, peritonitis, pancreatic necrosis . Intensive therapy in the early post-anesthetic and postoperative period

Contentful module 2. general question intensive therapy

Specific purposes:

- Differentiate different species violations water-electrolyte exchange and acid-basestate
- Formulate the main ones principles of correction and intensive therapy different species violationswater-electrolyte exchange and acid-base state
- Draw up schemes conducting an infusion therapy at different violations homeostasis
- To distinguish the main ones syndromes, what characteristic for liver and renal deficiencies
- Explain choice different methods artificial organ prosthetics .
- Differentiate clinical manifestations comatose became different genesis

- Formulate the basic principles of intensive therapy for various comatose states origin
- Interpret regularities occurrence violations vitally important functions body at sharp poisoning
- Classify different species sharp poisoning
- Justify choice methods of intensive different therapies species sharp poisoning

Topic 4. Methods of diagnosis and correction of water-electrolyte disorders exchange and acid-base state (KOS)

Physiological mechanisms of maintaining the body's internal environment, its methods control Pathophysiology of water-electrolyte metabolism and acid-base status. Concept about the homeostatic functional system, molarity, osmolarity. Types of metabolic disorders water, their causes and methods of diagnosis and correction. Exchange of basic electrolytes - sodium, potassium, chlorine, calcium - reasons possible violations, methods corrections

Physiological and buffer systems of COD regulation. Types of acid-base disorders state methods laboratory diagnostics and intensive therapy metabolic acidosis, metabolic alkalosis, respiratory acidosis and respiratory alkalosis

Features regulations active reactions body in children and people elderly.

Methods definition shortage BCC. Characteristic drugs - hemocorrectors, indication and contraindication to their application. Paths introduction infusions means, rules of infusion therapy. Peculiarities of infusion therapy in children and the elderly. Complication infusion therapy

Basics of parenteral food. Characteristics of drugs, rules of conduct parenteral nutrition and its control efficiency. Peculiarities of parenteral food in children and people inclined age

Topic 5. Acute renal disease (IRS) and hepatic insufficiency

Anatomy and physiology urinary systems. IRS, forms IRS, pathophysiology, clinical course, physiological and biochemical violation. Methods diagnostics. Algorithms intensive care (IT) at different stages of ARF. Methods of extrarenal purification (hemodialysis, hemofiltration, ultrafiltration, peritoneal dialysis).

Etiological factors, pathophysiology development, clinical course sharp liver deficiencies Methods IT sharp liver deficiencies

Topic 6. sharp poisoning and comatose state

The concept of acute poisoning. Classification poisoning general principles intensive therapy at sharp poisoned Intense therapy sharp poisoning tranquilizers, barbiturates, opiates, organophosphorus substances, ethyl and methyl alcohols, capable gas, acids and meadows, poisonous mushrooms Application methods extracorporeal detoxification

Features urgent help at insect bites and animals

Methods differential diagnostics comatose became Definition depth commas Intensive therapy for insects of various etiology (hypo-, hyperglycemic, hyperosmolar, hepatic, uremic). Intense therapy swelling brain, convulsive and hyperthermic syndromes in children

Topic 7. sharp respiratory insufficiency (GDN)

Physiology and pathophysiology breath. Non-respiratory functions lungs _ Anatomical physiological features systems breath in children and persons inclined age

Etiology and pathogenesis GDN, classification, clinical course. Algorithms diagnostics. hypoxia, her types, clinical signs diagnosis Hypercapnia, clinical signs

Methods intensive therapy of GDN. Means software free passage of respiratory ways and improvement drainage functions lungs _ Struggle with hypoxemia. Methods oxygen therapy. Indication to

application spontaneous breath under constantly positive pressure (SDPPT) and artificial ventilation lungs (ventilator), contraindication and are possible complication. Application hyperbaric oxygenation . Features intensive therapy in children with sharp respiratory insufficiency

Topic 8. Illness and damage respiratory systems

Intensive therapy of acute respiratory failure in individual pathological conditions: c postoperative period, with asthma, pulmonary edema, drowning, thromboembolism pulmonary arteries and her branches, aspirational syndromes respiratory distress syndromes adults and newborns

Topic 9. Sharp violation blood circulation

Physiology and pathophysiology blood circulation Systemic transport oxygen, as indicator adequacy functions cardiovascular systems.

Mechanisms of development of acute circulatory failure. Definition of critical types disorders hemodynamics - cardiac and vascular insufficiency, hypovolemia . Criteria disorder microcirculation.

Reasons occurrence clinical manifestations and diagnosis acute heart failure, heart rhythm disorders. Main directions of intensive therapy. Age-related features of cardiac vascular systems and mechanisms development critical disorders hemodynamics and their treatment.

Pathophysiology, diagnosis, features I will run and intense therapy at dizziness and collapse

Topic 10. Shocking state and traumatic damage.

Shock, types of shock. Pathophysiology, diagnosis, features of the course, intensive therapy at different species shock (hemorrhagic, traumatic, burn, anaphylactic, septic). Peculiarities of infusion-transfusion therapy of various types of shock, characteristics infusion environment

Pathophysiology, diagnosis, features I will run intense therapy and activities prevention of complications in severe traumatic brain injury (TBI), polytrauma , syndrome long compression, electric shock

The structure of the academic discipline "Anesthesiology and intense therapy"

Topic	Number of hours			Individual work
	Lectures	Practice - no classes	SRS	
Content module 1. General resuscitation and anesthesiology				
1. Cardiopulmonary and cerebral resuscitation.	-	4	4	During the module, a review of the scientific literature on topics to choose from: "Brain death. Clinical and deontological problems" "History of the development of methods of analgesia"
2. General questions of anesthesiology	-	4	4	
3. Clinical anesthesiology	2	4	4	
Content module 2. General issues of intensive therapy				
4. Methods of diagnosis and correction of water-electrolyte metabolism disorders and acid-base status (KOS)	-	4	4	" Intracranial pressure as a criterion of adequacy of intensive therapy of comatose states" "Modern methods of efferent therapy"
5. Acute renal (ARN) and liver failure	2	4	4	

6. Acute poisoning and comatose states.	2	4	4	
Content module 3. Intensive therapy of emergency conditions				
7. Acute respiratory failure (ARF)	2	3	4	"Acute respiratory distress syndrome of newborns" "Tactics of infusion therapy in shock states"
8. Diseases and lesions of the respiratory system		3	4	
9. Acute circulatory disorders.	-	3	4	
10. Shock states and traumatic injuries.	2	3	4	
Final control		4		Differentiated scoring
TOTAL HOURS - 90	10	40	40	
ECTS credits – 3.0				

4. THEMATIC PLAN LECTURES WITH DISCIPLINES.

No	Topic	Number hours
Module "Anesthesiology and intense therapy"		
1	general principles anesthetic support operative interventions	2
2	Intense acute therapy respiratory deficiencies	2
3	general principles intensive therapy sharp poisoning	2
4	Shock. Pathogenesis, classification, clinical manifestations and intense therapy of various species shock	2
5	Intense therapy at acute renal and hepatic deficiencies	2
	TOGETHER	10

5. THEMATIC PLAN PRACTICAL JOIN WITH DISCIPLINES

No	Topic	How many hours
Module "Anesthesiology and intense therapy"		
<i>Contentful module 1. General resuscitation and anesthesiology</i>		
1	Cardiopulmonary and cerebral reanimation.	4
2	general question of anesthesiology.	4
3	Clinical anesthesiology	4
<i>Contentful module 2. General question intensive therapy</i>		
4	Methods diagnostics and correction violations water-electrolyte exchange and acid-base state (KOS)	4
5	sharp renal (IRS) and hepatic insufficiency	4
6	sharp poisoning and comatose state	4
<i>Contentful module 3. Intense therapy urgent became</i>		
7	sharp respiratory insufficiency (GDN)	3
8	Disease and damage respiratory systems	3

9	sharp circulatory disorders	3
10	Shocking state and traumatic damage	3
11	Final CONTROL:differential calculation	4
	TOGETHER	40

6. THEMATIC PLAN

independent work students (SRS) and her CONTROL with disciplines

No	TOPIC	Numberhours	Kind control
1.	Preparation for practical classes – <i>theoretical training and developmentpractical skills</i>	10	Current control over practical classes
2.	Independent processing topics which not are includedto plan classrooms classes:		Current control over practical classes
2.1	Intense therapy traumatic damage:polytrauma , syndrome long compression, electric shock	7	Current control over current classes
2.2	Clinical manifestations and diagnosis of acute heart failure, cardiac disordersrhythm The main ones directions intensive therapy	7	Current control over practical classes
2.3	Intensive therapy of convulsive and hyperthermic syndromes	6	Current control over practical classes
3.	Individual independent work students by one with topics by choice: Review scientific literature for choice: - "Brain death. Clinical and deontological problems" - "Acute respiratory distress syndrome newborns" - "History development methods of pain relief" - "Tactics infusion therapy at shocking conditions" - " Interlocking pressure, as criterion adequacy of intensive therapycomatose states" - "Modern methods efferent therapy	6	Current control over practicalclasses
	Preparation for differential assessment	4	
	TOGETHER	40	

7. LIST PRACTICAL SKILL, WHAT SHOULD MASTERSTUDENT WHEN STUDYING DISCIPLINES

Module "Anesthesiology and intense therapy"
<ol style="list-style-type: none"> 1. Software passability respiratory ways 2. Carrying out artificial ventilation lungs the simplest methods ("mouth to company", "mouth to nose"). 3. Carrying out indirect massage hearts 4. Carrying out electric defibrillation 5. Artificial ventilation lung bag Ambu and by using S-shaped tubes 6. Methods oxygen therapy. 7. Definition of species and degree respiratory deficiencies 8. Measurement CVT. 9. Calculation per diem water balance, definition degree dehydration 10. Calculation of deficits of basic electrolytes (potassium, sodium, chlorine), selection and calculation quantity solutions for corrections electrolyte violations 11. Definition species disorder KOS and calculation volumes infusion means for corrections 12. Methods detoxification (washing stomach, forced diuresis) 13. Rating state consciousness 14. Methods artificial ventilation lungs in newborns and children early age 15. Indirect massage hearts in newborns and children early age

8. LIST OF QUESTIONS FOR THE FINAL CONTROL OF THE EDUCATIONAL DISCIPLINE.

Module "Anesthesiology and intensive care"

Content module 1. General resuscitation and anesthesiology

1. Clinical death, definition, diagnosis.
2. The immediate stage of the SLCR.
3. Signs of the effectiveness of resuscitation, indications for stopping resuscitation.
4. Specialized stage of SLCR.
5. Types of circulatory arrest and their diagnosis.
6. Medicines used at the specialized stage of cardiopulmonary and cerebral resuscitation, their doses.
7. Ways of administering medications during resuscitation and their rationale.
8. Electrical defibrillation technique.
9. Indications for direct heart massage.
10. Complications of resuscitation.
11. Post-resuscitation period.
12. The concept of decortication, decerebration, brain death.
13. The main directions of treatment in the post-resuscitation period.
14. Intensive therapy of cerebral edema.
15. Classification of anesthesia types.
16. The main nodes of the anesthetic apparatus.
17. Fire and explosion prevention measures in the operating room.
18. Respiratory circuits, advantages, disadvantages.
19. Inhalation anesthetics: pharmacokinetics, clinical course.
20. Components of general anesthesia.

21. Stages of anesthesia provision.
22. Premedication , its types.
23. Preparation of patients for surgery and anesthesia.
24. Clinic of ether anesthesia.
25. Mask method of general anesthesia.
26. Endotracheal anesthesia. Indications, method of implementation.
27. Pharmacology of muscle relaxants
28. Complications during general anesthesia.
29. Non-inhalation anesthetics: pharmacokinetics, clinical course.
30. Types and methods of regional anesthesia.
31. Peculiarities of general anesthesia in outpatient and emergency settings.
32. Peculiarities of preparing patients for surgery and anesthesia.
33. Physiological and pathophysiological features of general anesthesia in children and elderly

patients

Content module 2. General issues of intensive therapy

1. The role of water and electrolytes in the body.
2. Concept of osmolality , its correction.
3. Clinical signs of dehydration and hyperhydration .
4. Hypertonic dehydration. Causes, clinical signs, methods of correction.
5. Isotonic dehydration. Causes, clinical signs, methods of correction.
6. Hypotonic dehydration. Causes, clinical signs, methods of correction.
7. Hypertonic hyperhydration . Causes, clinical signs, methods of correction.
8. Isotonic hyperhydration . Causes, clinical signs, methods of correction.
9. Hypotonic hyperhydration . Causes, clinical signs, methods of correction.
10. Causes and signs of hypo- and hypernatremia , methods of treatment.
11. Pathophysiological disorders in hypo- and hyperkalemia , clinic, diagnosis, correction.
12. Violation of chlorine metabolism.
13. Buffer systems of the body.
14. Concept of acidosis, diagnosis, correction.
15. Concept of alkalosis, diagnosis, correction.
16. Characteristics of solutions for infusion therapy.
17. Indications for parenteral nutrition.
18. Peculiarities of infusion therapy and correction of VEO and COS disorders in diabetes.
19. Peculiarities of infusion therapy and correction of VEO and KOS violations in the postoperative period.
20. Features infusion therapy and correction of violations of VEO and KOS in gatekeeper stenosis.
21. Peculiarities of infusion therapy and correction of violations of VE and COS in case of intestinal obstruction.
22. Peculiarities of infusion therapy and correction of VEO and COS violations in peritonitis.
23. Peculiarities of infusion therapy and correction of VEO and COS disorders in pancreatic necrosis .
24. Causes and pathogenesis of acute renal failure (ARN).
25. Differential diagnosis of prerenal , real and postrenal oliguria , anuria. Laboratory diagnosis of ANN.
26. Stages of the clinical course of ARF.
27. Basic principles of treatment of ARF.

28. Uremic coma, principles of intensive therapy.
29. Indications for hemodialysis.
30. Calculation of the daily fluid requirement of patients with ARF.
31. Causes of acute liver failure.
32. Clinical manifestations of acute liver failure. Laboratory diagnostics.
33. Basic principles of treatment of liver damage.
34. Hepatic coma, principles of intensive therapy
35. Basic principles of acute poisoning IT.
36. Basic principles of forced diuresis.
37. Extracorporeal methods of detoxification, indications and contraindications, technical means, performance technique.
38. Principles of antidote therapy.
39. Pathogenesis, clinic and IT in methyl alcohol poisoning.
40. Pathogenesis, clinic and IT in poisoning with ethyl alcohol and its surrogates.
41. Pathogenesis, clinic and IT in poisoning with opiates and barbiturates.
42. Pathogenesis, clinic and IT in poisoning with organophosphorus substances.
43. Pathogenesis, clinic and IT in acid and alkali poisoning.
44. Pathogenesis, clinic and IT in carbon monoxide poisoning.
45. Pathogenesis, clinic and IT in poisoning by poisonous mushrooms.
46. Features of emergency care for insect and animal bites.
47. Types of consciousness disorders, assessment of the depth of consciousness disorders.
48. Principles of IT in comatose states of various origins.
49. Pathogenesis, clinic and IT of hypoglycemic coma.
50. Pathogenesis, clinic and IT of hyperglycemic coma.
51. Pathogenesis, clinic and IT of hyperosmolar coma.
52. Pathogenesis, clinic, IT of hyperthermic syndrome in children.

Content module 3. Intensive therapy of emergency conditions

1. Classification of hypoxia, clinic, differential diagnosis of various types of hypoxia.
2. Hypercapnia , clinic.
3. Hypocapnia , clinic.
4. Classification of GDN.
5. Basic principles of intensive therapy of GDN.
6. Oxygen therapy: methods, indications, toxic action of oxygen.
7. Ventilator, indications, methods, efficiency criteria.
8. Methods of restoring the patency of the respiratory tract and improving the drainage function of the lungs .
9. Rehabilitation of the tracheobronchial tree and oropharynx.
10. Principles of differentiated therapy of the asthmatic condition.
11. Emergency care for various types of pulmonary edema .
12. Aspiration syndrome, pathogenesis, clinical manifestations, intensive therapy.
13. Intensive therapy of postoperative GDN.
14. Reanimation and intensive therapy for various types of drowning.
15. Respiratory distress syndrome in adults, etiology, pathogenesis, clinical signs, intensive therapy.
16. Reanimation and intensive therapy of thromboembolism of the pulmonary artery and its branches.
17. Types of acute circulatory disorders.

18. Pathogenesis, clinical manifestations and IT of acute heart failure
19. Pathogenesis, clinical manifestations and IT of acute heart rhythm disturbances.
20. Pathophysiology, diagnosis, features of the course and intensive therapy for dizziness and collapse.
21. Pathogenesis, clinical course and IT of traumatic shock.
22. Pathogenesis, clinical course and IT of hemorrhagic shock.
23. Pathogenesis, clinical course and IT of burn shock
24. Pathogenesis, clinical course and IT of anaphylactic shock.
25. Pathogenesis, clinical course and IT of toxic - infectious shock.
26. Resuscitation and IT in case of electrocution.
27. Resuscitation and intensive therapy for prolonged compression syndrome.
28. Resuscitation and IT in case of polytrauma .

9. Individual tasks.

Individual tasks are one of the forms of organization of training, which aims to deepen, generalize and consolidate the knowledge that students receive in the learning process, as well as the application of this knowledge in practice. Individual tasks are performed by students independently under the guidance of the teacher.

Individual tasks include: writing abstracts and creating multimedia presentations with reports at the meetings of the scientific student circle of the department, participation in the production of macro and micro preparations, participation in the scientific and research work of the department, participation in writing theses and articles of reports at student scientific conferences.

List of tasks for individual student work: Protection of an individual research project ; participation in the work of the student scientific circle and speeches at scientific forums; participation in the student Olympiad in discipline; selection of video and audio materials from sections of the academic discipline; selection of materials and creation of a presentation on a relevant topic or section of the discipline.

10. Teaching methods

According to the sources of knowledge, teaching methods are used: verbal - story, explanation, lecture, instruction; visual - demonstration, illustration; practical - practical work, problem solving. According to the nature of the logic of knowledge, methods are used: analytical, synthetic, analytical-synthetic, inductive, deductive. According to the level of independent mental activity, the following methods are used: problem-based, searching, research.

1. Verbal methods: lecture, interactive lecture, conversation;
2. Visual methods: illustration, demonstration.
3. Practical methods: performing practical work and solving clinical situational tasks to develop skills and abilities; simulation training.
4. Students' independent work on understanding and assimilation of new material
5. Use of control and educational computer programs
6. Innovative teaching methods: Case-based learning (Learning through the analysis of a clinical case, situation); brainstorming; educational discussion; educational debate; role play; team-based learning; think-pair-share.

The types of training according to the curriculum are: lectures; practical training; independent work of acquirers.

11. Control methods

Current control is carried out on the basis of control theoretical knowledge, practical skills and abilities.

Forms of current control are: **oral survey** (frontal, individual, combined), interview; **practical verification of the formed professional skills** (carried out based on the results of solving clinical cases, working with medical documentation, performing practical skills, working at the patient's bedside); test control ("open" and "closed" test tasks).

Current control is mandatory. During the evaluation of mastering of each topic from all disciplines of the curriculum for the current educational activity, the student is given grades on a 4-point (traditional scale) taking into account the approved evaluation criteria for the discipline. All types of work provided by the curriculum are taken into account. The student must receive a grade in each topic. The teacher conducts a survey of each student in the group at each lesson and assigns a grade in the journal of attendance and student performance according to the traditional scale ("5", "4", "3", "2").

When evaluating the student's current educational activity, 20% of the grade is the student's independent work, which takes into account the knowledge of the topic of independent study and the performance of work in the notebook.

The final (summary) control is carried out:

- in the form of a written test, which includes test tasks, theoretical questions
- control of practical skills (solving clinical cases, assessment of correct performance of practical skills - practical-oriented exam.

According to the specifics of professional training, preference is given to test and practically oriented control.

12. Form of final control of study success .

The final control of the discipline is carried out on the basis of theoretical control knowledge, practical skills and abilities.

Differential assessment is a form of final control of the student's assimilation of theoretical and practical material from the academic discipline.

13. Scheme of accrual and distribution of points received by students.

The maximum number of points for a discipline is 200 points. The ratio between the results of the evaluation of the current educational activity and the final control of knowledge is 60% and 40%.

The study of the discipline ends with a final control in the form of a differential assessment. Only those students who do not have academic debt (all missed classes have been completed) and whose average score for the current educational activity in the academic discipline is at least "3" are admitted to the differential credit.

The maximum number of points that a student can score for the current educational activity for admission to the exam is 120 points and is defined as the sum of the arithmetic average of all grades received in the semester.

The minimum number of points that a student must score for the current educational activity for admission to the exam is 72 points. Recalculation of the average grade for the current academic performance (on a 120-point scale) in the table. 1.

Table 1.

Recalculation of the average grade for the current academic performance in a multi-point scale for disciplines ending with an exam

4-point scale	200-point scale	4-point scale	200-point scale	4-point scale	200-point scale
5	120	4.29	103	3.58	86
4.96	119	4.25	102	3.54	85
4.92	118	4.21	101	3.50	84
4.87	117	4.17	100	3.46	83
4.83	116	4.12	99	3.42	82
4.79	115	4.08	98	3.37	81
4.75	114	4.04	97	3.33	80
4.71	113	4.00	96	3.29	79
4.67	112	3.96	95	3.25	78
4.62	111	3.92	94	3.21	77
4.58	110	3.87	93	3.17	76
4.54	109	3.83	92	3.12	75
4.50	108	3.79	91	3.08	74
4.46	107	3.75	90	3.04	73
4.42	106	3.71	89	3	72
4.37	105	3.67	88	Less than 3	Not enough
4.33	104	3.62	87		

The maximum number of points that a student can score when taking the exam is 80 (the minimum number is at least 50).

Discipline assessment is defined comprehensively as the sum of points for the current educational activity and points for the exam.

From the allocated 120 points for the current educational activity, 4 to 12 additional points are allocated for the assessment of individual independent work of higher education applicants, according to the work curriculum. Encouragement points are added to the final grade for the discipline at the end of its study.

Points with disciplines for students, which successfully completed the program are converted into the national scale and ECTS system (Table 2).

Table 2

Scale assessment: national and ECTS

Total points for all types educational activity	RatingECTS	Rating by national scale	
		for exam, difzalik	for offset
180-200	A	perfectly	counted
160-179	B	okay	
150-159	C		
130-149	D	satisfactorily	
120-129	E		
50-119	FX	unsatisfactorily with the possibility of refolding	not counted with possibility rearrangement
0-49	F	unsatisfactorily with mandatoryrepeated studying the discipline	not counted with mandatory repeated studying the discipline

14. Methodological support

1. Working curriculum of the discipline;
2. Plans of lectures, practical classes and independent work of students;
3. Abstracts of lectures on the discipline;
4. Methodical instructions for practical classes for students;
5. Methodical materials that ensure independent work of students;
6. Test and control tasks for practical classes;
7. List of exam questions

1 5. LIST EDUCATIONAL AND METHODOLOGICAL LITERATURE WITH DISCIPLINES

1. Glumcher F.S. "Anesthesiology and intensive care. Fourth edition" 2021 Kyiv
2. Tenacious L.P., Novytska-Usenko L.V., Tkachenko R.O. Anesthesiology and intense therapy. Textbook for VMNH III-IV level accreditation K.: Higher school, 2003. – 399 with.
3. Edited by Prof. Shlapaka I.P. Anesthesiology and intensive care. -Kyiv, "Medicine", -2015, volume 2. -550 p
4. Anesthesiology, intensive care and emergency conditions: textbook: edited by Prof. Vladyki A.S. Odesa: ONMedU , 2016
5. Simulation medicine. Experience. Acquisition Perspectives: study guide/ V.M. Zaporozhan , O.O. Tarabrin. Odesa: University Book, 2018
6. Edited by Prof. Glumchera F.S. Anesthesiology and intensive care. - Kyiv, VSV "Medicine", 2018 — 450 p
7. Miller R. Encyclopedia of Anesthesiology New York -2018. -600s
8. Morgan JE, Mikhail MS Clinical anesthesiology . McGraw-Hill Education Medical ; 6 th Edition , 2018
9. Paul G. Barash , Bruce F. Cullen Clinical anesthesia . LWW; 8 th Edition , 2017
10. Jean - Louis Vincen , Edward Abraham Textbook of critical care _ Elsevier ; 7 th Edition , 2017
11. Edward Scarth Drugs in anesthesia and intensive care _ 5 th Revised Edition , 2016

16. Informational resource

1. Surviving Sepsis Campaign . <https://www.sccm.org/SurvivingSepsisCampaign/Home>
2. <https://amusing-anesthesiology.com/uk-ua/books>
3. European respiratory society (ERS) <https://www.ersnet.org/>