



THE MINISTRY OF SCIENCE AND HIGHER EDUCATION OF RUSSIAN FEDERATION
Federal state autonomous educational institution
of higher education
FAR EASTERN FEDERAL UNIVERSITY
(FEFU)

SCHOOL OF MEDICINE

" AGREED BY"

«General medicine» educational program
Supervising person

(signature)

V.V. Usov

(FULL NAME.)



" APPROVED BY"

Clinical Medicine
Department Director

(signature)

T.A. Brodskaya

(FULL NAME.)

" 13 » December 2021

" 13 » December 2021

WORKING PROGRAM OF ACADEMIC DISCIPLINE (WPAD)

Anesthesiology, Resuscitation, Intensive Care

Specialty 31.05.01 «General medicine»

Form of study: full time

year 6 semester B
lectures 18 hours
practical classes 36 hours
laboratory works not provided
total amount of in-classroom works 54 hours
independent self-work 18 hours
control works is not provided
pass-fail exam with mark at the year 6, semester B
exam is not provided

The working program was drawn up in accordance with the requirements of the federal state educational standard of higher education 31.05.01 in the direction of training "General Medicine" (level of training specialist), approved by order of the Ministry of Science and Higher Education of the Russian Federation dated August 12, 2020 No. 988 and the Educational Plan in the direction of training "General Medicine".

The working program of the discipline was discussed at the meeting of the Department of the clinical medicine. Protocol No.4, 13 December 2021

Director of the Department of Clinical Medicine: Dr of science, professor Brodskaya T.A..

Prepared by: Associate professor Silaev A. A.,

Vladivostok
2022

Reverse side of the title page of the WPAD

I. The work program was revised at the meeting of the Department:

Protocol dated "_____" _____ 20__ No. _____

Department Director _____
(signature) (Full Name)

II. The work program was revised at the meeting of the Department:

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III. The work program was revised at the meeting of the Department:

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V. The work program was revised at the meeting of the Department:

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ANNOTATION

The discipline "Anesthesiology, resuscitation, intensive care" is designed for students enrolled in the educational program 31.05.01 "General Medicine".

The discipline is implemented in the 6th year and is a variable discipline.

In the development of the working program of the discipline used the Federal state educational standard of higher education for the specialty 31.05.01 "General Medicine", the curriculum for the training of students.

The total labor capacity of the discipline is 72 hours, 2 credit units.

Course goals:

Formation of students' knowledge about the disorders of vital functions of the body, the principles of intensive care and resuscitation, the basic methods of first aid in emergency states, as well as the principles of perioperative anesthesia, anesthetic support of surgical interventions and diagnostic manipulations, control and prosthetics of vital functions of the body

Objectives:

1. To familiarize students with etiology and pathogenesis of critical states, pathophysiological essence of processes occurring during dying and recovery of the organism.
2. Acquiring students' knowledge of the diagnosis and principles of treatment of critical conditions in surgical, therapeutic and other patients. 3;
3. Teaching a complex of resuscitation measures in acute respiratory and circulatory disorders, in clinical death; application of modern methods of resuscitation and intensive care in assisting patients and victims in critical states of various etiology; formation of a sustainable algorithm of cardiopulmonary and cerebral resuscitation.
4. Formation of ideas about the principles of organization and capabilities of modern specialized anesthesiology and intensive care service, modern methods of monitoring and detoxification used in intensive care.

5. To familiarize students with the principles of anesthetic support of surgical interventions and methods of anesthetic therapy.
6. Formation of ideas about the principles of organization and possibilities of modern specialized anesthesiological service.

To solve these problems, it is planned a course of thematic lectures, clinical analysis of patients, mastering of modern diagnostic methods and ways of treatment.

As a result of studying this discipline students form the following professional competencies:

Task type	Code and name of professional competence (result of mastering)	Code and name of the competency achievement indicator
Type of tasks of professional activity: individual	PC-1 Ready to participate in the provision of medical care in emergency or emergency forms	PC-1.1 Has the ability to assess the condition of a patient requiring medical care in emergency or emergency forms
		PC-1.2 Knows the list of methods of laboratory and instrumental studies to assess the patient's condition, the main medical indications for conducting research and interpreting the results
		PC-1.3 Knows the etiology, pathogenesis and pathomorphology, clinical picture, differential diagnosis, features of the course, complications and outcomes of diseases of internal organs
		PC-1.4 Knows the methodology for collecting complaints and anamnesis from patients (their legal representatives)
	PC-2 Ready to provide emergency medical care to patients with sudden acute diseases, conditions, exacerbation of chronic diseases without obvious signs of a threat to the patient's life	PC-2.1 Able to identify clinical signs of conditions requiring emergency medical care in case of sudden acute diseases, conditions, exacerbation of chronic diseases without obvious signs of a threat to the patient's life
		PC-2.2 Able to carry out measures to provide medical care in an emergency form for sudden acute diseases, conditions, exacerbation of chronic diseases without obvious signs of a threat to the patient's life

		<p>PC-2.3 Knows how to use medicines and medical devices in the provision of medical care in emergency or urgent forms for sudden acute diseases, conditions, exacerbation of chronic diseases without obvious signs of a threat to the patient's life</p>
	<p>PC-3 Ready to provide emergency medical care to patients in conditions that pose a threat to the patient's life, including clinical death (stopping the vital functions of the human body (blood circulation and / or respiration))</p>	<p>PC-3.1 Able to identify conditions that require emergency medical care, including clinical signs of sudden cessation of blood circulation and breathing</p> <p>PC-3.2 Able to perform basic cardiopulmonary resuscitation measures in combination with electropulse therapy (defibrillation)</p> <p>PC-3.3 Knows the clinical signs of sudden cessation of circulation and/or respiration</p>
	<p>PC-4 Ready to collect and analyze patient complaints, anamnesis data, results of physical examination, laboratory, instrumental, pathoanatomical and other studies in order to recognize the condition or establish the presence or absence of the disease in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care</p>	<p>PC-4.6 Knows the procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, standards of medical care</p>
	<p>PC-6 Able to develop a treatment plan for a disease or condition, taking into account the diagnosis, age and clinical picture in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care</p>	<p>PC-6.1 Knows modern methods of using medicines, medical devices and therapeutic nutrition for diseases and conditions in patients in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care</p> <p>PC-6.3 Is able to draw up a treatment plan for the disease and the patient's condition,</p>

		taking into account the diagnosis, age of the patient, the clinical picture of the disease in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care
	PC-7 Ready to prescribe medicines, medical devices and medical nutrition, taking into account the diagnosis, age and clinical picture of the disease and in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care	PC-7.1 Knows the mechanism of action of drugs, medical devices and medical nutrition, medical indications and contraindications for their use; Complications caused by their use
		PC-7.2 Is able to prescribe medicines, medical devices and therapeutic nutrition, taking into account the diagnosis, age and clinical picture of the disease in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care
	PC-11 Ready to conduct an examination of temporary disability, participate in a medical and social examination, ascertain the biological death of a person	PC-11.4 Knows the signs of biological death, the procedure for fixing the fact of biological death and the procedure for registering biological death

PC-1.1 Has the ability to assess the condition of a patient requiring medical care in emergency or emergency forms	Knows the clinical signs that characterize the condition of a patient requiring emergency or emergency medical care
	Able to assess the clinical signs characterizing the condition of a patient requiring emergency or emergency medical care
	Possesses the skill of determining the condition of a patient requiring emergency or emergency medical care
PC-1.2 Knows the list of methods of laboratory and instrumental studies to assess the patient's condition, the main medical indications for conducting research and interpreting the results	Knows the methods of laboratory and instrumental studies to assess the patient's condition in the provision of emergency and emergency medical care.
	Able to determine the indications for the appointment of laboratory and instrumental studies to assess the patient's condition in the provision of emergency and emergency medical care.
	Possesses the skill of interpreting the results of laboratory and instrumental studies to assess the patient's condition in the provision of emergency and emergency medical care.
PC-1.4	Knows the etiology, pathogenesis and pathomorphology, clinical picture, features of the course, complications and

Knows the methodology for collecting complaints and anamnesis from patients (their legal representatives)	outcomes of diseases of internal organs in the provision of emergency and emergency medical care.
	Able to formulate a clinical diagnosis, identify a number of diseases for differential diagnosis in the provision of emergency and emergency medical care.
	Possesses the skill of making a clinical diagnosis, conducting a differential diagnosis. in the provision of emergency and emergency medical care.
PC-1.3 Knows the etiology, pathogenesis and pathomorphology, clinical picture, differential diagnosis, features of the course, complications and outcomes of diseases of internal organs	Knows the methodology of interviewing patients (their legal representatives) in the provision of emergency and emergency medical care.
	Able to conduct a survey of patients (their legal representatives) in the provision of emergency and emergency medical care.
	Possesses in the methodology for collecting complaints and anamnesis from patients and / or their legal representatives in the provision of emergency and emergency medical care.
PC-2.1 Able to identify clinical signs of conditions requiring emergency medical care in case of sudden acute diseases, conditions, exacerbation of chronic diseases without obvious signs of a threat to the patient's life	Knows the clinical signs of conditions requiring emergency medical care for sudden acute diseases, conditions, exacerbation of chronic diseases without obvious signs of a threat to the patient's life
	Able to identify clinical signs of conditions requiring emergency medical care in case of sudden acute diseases, conditions, exacerbation of chronic diseases without obvious signs of a threat to the patient's life
	Possesses the skill of identifying clinical signs of conditions requiring emergency medical care for sudden acute diseases, conditions, exacerbation of chronic diseases without obvious signs of a threat to the patient's life
PC-2.2 Able to carry out measures to provide medical care in an emergency form for sudden acute diseases, conditions, exacerbation of chronic diseases without obvious signs of a threat to the patient's life	Knows measures to provide emergency medical care for sudden acute diseases, conditions, exacerbation of chronic diseases without obvious signs of a threat to the patient's life
	Able to provide emergency medical care for sudden acute diseases, conditions, exacerbation of chronic diseases without obvious signs of a threat to the patient's life
	Possesses the skill to independently provide emergency medical care for sudden acute diseases, conditions, exacerbation of chronic diseases without obvious signs of a threat to the patient's life
PC-2.3 Knows how to use medicines and medical devices in the provision of medical care in emergency or urgent forms for sudden acute diseases, conditions, exacerbation of chronic diseases without obvious signs of a threat to the patient's life	Knows medicines and medical devices in the provision of emergency and emergency medical care for sudden acute diseases, conditions, exacerbation of chronic diseases without obvious signs of a threat to the patient's life
	Able to use medicines and medical devices in the provision of emergency or emergency medical care for sudden acute diseases, conditions, exacerbation of chronic diseases without obvious signs of threat
	Possesses the skill to independently use medicines and medical devices in the provision of emergency or

	emergency medical care for sudden acute diseases, conditions, exacerbation of chronic diseases without obvious signs of threat
PC-3.1 Able to identify conditions that require emergency medical care, including clinical signs of sudden cessation of blood circulation and breathing	Knows conditions that require emergency medical care, including clinical signs of sudden cessation of blood circulation and breathing.
	Able to identify conditions that require emergency medical care, including clinical signs of sudden cessation of blood circulation and breathing
	Possesses the skill of self-determination of a condition requiring emergency medical care, including a sudden cessation of blood circulation and breathing
PC-3.2 Able to perform basic cardiopulmonary resuscitation measures in combination with electropulse therapy (defibrillation)	Knows from the conditions under which it is necessary to perform basic cardiopulmonary resuscitation with defibrillation.
	Able to perform basic cardiopulmonary resuscitation in combination with defibrillation.
	Possesses the skill of assessing the effectiveness of basic cardiopulmonary resuscitation measures in combination with defibrillation.
PC-3.3 Knows the clinical signs of sudden cessation of circulation and/or respiration	Knows the clinical signs of sudden cessation of blood circulation and respiration.
	Able to determine the sudden cessation of blood circulation and respiration by clinical signs.
	Possesses the skill of self-determination by clinical signs of sudden cessation of blood circulation and / or breathing
PC-4.6 Knows the procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, standards of medical care	Knows the procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, standards of medical care.
	Able to use in practice the procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, standards of medical care.
	Possesses the skill of providing medical care in accordance with clinical guidelines (treatment protocols) for the provision of medical care, standards of medical care
PC-6.1 Knows modern methods of using medicines, medical devices and therapeutic nutrition for diseases and conditions in patients in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care	Knows modern methods of using medicines, medical devices and therapeutic nutrition for diseases and conditions in patients in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care
	Is able to draw up a plan for the use of medicines, medical devices and therapeutic nutrition for diseases and conditions in a patient in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care
	Possesses the skill of independent use of medicines, medical devices and therapeutic nutrition for diseases and conditions of the patient in accordance with the current procedures for the provision of medical care, clinical recommendations

	(treatment protocols) on the provision of medical care, taking into account the standards of medical care
<p>PC-6.3 Is able to draw up a treatment plan for the disease and the patient's condition, taking into account the diagnosis, age of the patient, the clinical picture of the disease in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care</p>	Knows the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, standards of medical care
	Is able to draw up a treatment plan for the patient's diseases in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) for the provision of medical care, standards of medical care
	Possesses the skill of drawing up a treatment plan for the disease and the patient's condition, taking into account the diagnosis, the patient's age, the clinical picture of the disease in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care
<p>PC-7.1 Knows the mechanism of action of drugs, medical devices and medical nutrition, medical indications and contraindications for their use; Complications caused by their use</p>	Knows the mechanism of action of drugs, medical devices and medical nutrition, medical indications and contraindications to their use; complications caused by their use
	Able to choose medicines, medical devices and medical nutrition, taking into account medical indications and contraindications, possible complications caused by their use
	Possesses the skill of self-selection of medicines, medical devices and medical nutrition, taking into account medical indications and contraindications, possible complications caused by their use
<p>PC-7.2 Is able to prescribe medicines, medical devices and therapeutic nutrition, taking into account the diagnosis, age and clinical picture of the disease in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care</p>	Knows the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care for prescribing medicines, medical devices and therapeutic nutrition, taking into account the diagnosis, age and clinical picture of the disease.
	Is able to prescribe medicines, medical devices and therapeutic nutrition, taking into account the diagnosis, age and clinical picture of the disease in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care
	Possesses the skill of self-prescription of medicines, medical devices and therapeutic nutrition, taking into account the diagnosis, age and clinical picture of the disease in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care
<p>PC-11.4 Knows the signs of biological death, the</p>	Knows the signs of biological death, the procedure for fixing the fact of biological death and the procedure for registering biological death

procedure for fixing the fact of biological death and the procedure for registering biological death	Able to identify signs of biological death and record the fact of biological death.
	Possesses to independently determine the signs of biological death and record the fact of biological death

I. STRUCTURE AND CONTENT OF THE THEORETICAL PART OF THE COURSE (18 HOURS)

Module 1 Basics of Resuscitation (4 hours)

Topic 1. General resuscitation, resuscitation and IT for cardiovascular and respiratory failure (2 hours)

Pathophysiology of fading of vital functions of the organism (phases of the dying process, types of cardiac arrest, resuscitation methods). Structure and stages of resuscitation care. Cardiopulmonary resuscitation, defibrillation technique and technique, peculiarities of transportation of resuscitation patients and ensuring their safety. Post resuscitation disease (pathological processes characterizing post resuscitation disease, methods of intensive therapy of post resuscitation disease, principles of general care for resuscitation patients). Resuscitation and IT in sudden circulatory arrest. Resuscitation and IT in acute blood loss and hypovolemia. I.T. in case of circulatory disorders in the main vessels. Principles of IT in ARI, extracorporeal oxygenation in DN.

Topic 2. Resuscitation and IT for traumatic brain injury, pathology of the nervous system, mechanical, combined, thermal and electrical trauma (2 hours)

Organization of resuscitation care in trauma (traumatic shock, multiple organ failure, principles of IT in polytrauma). IT in acute craniocerebral trauma (CCI). IT in cases of cerebral circulation disorders (stroke). IT for meningoencephalitis. IT in burn shock (features of pathogenesis and clinic in burn shock, correction of hemodynamic, volemic and metabolic disorders in burn shock, methods of pain management in burn shock). IT in hypothermia. IT in electrical trauma.

Module 2 Fundamentals of Intensive Care (6 hours)

Topic 1. Basics of intensive care. Water-electrolyte balance and acid-base balance. Basics of infusion therapy (2 hours)

The amount of water in the body, its distribution and water balance. Violations of water and electrolyte exchange, edema. Regulation of acid-base balance, buffer systems. Acid-base balance disorders. Principles of treatment of IAB and acid-base balance disorders. Infusion therapy, indications for its use. Crystalloid solutions. Colloid solutions. The concept of a modern balanced infusion therapy. Complications of infusion therapy.

Topic 2. Intensive care for acute infectious diseases and septic conditions (2 hours)

Causes of nosocomial infections, classification of nosocomial infections. Clinical picture, treatment of nosocomial infections. Prevention of nosocomial infections. Microbiological monitoring in ICU. Antibacterial and antifungal drugs. Complications of antibiotic therapy. The concept of sepsis, pathogenesis and principles of sepsis treatment

Topic 3 Acute circulatory failure. Types of shock. Intensive Shock Therapy (2 hours)

Classification of shocks. Causes and mechanisms of shock development. Hypovolemic shock. Cardiogenic shock. Anaphylactic shock. Septic shock. Traumatic shock. Intensive therapy of various types of shock.

Module 3 General Anesthesiology (8 hours)

Topic 1. Types, stages and components of general anesthesia (2 hours)

Introductory anesthesia, techniques, preparations, possible complications. Basal anesthesia, techniques, drugs, possible complications. Exit anesthesia. Early postnarcotic period, prevention of complications. Induction of anesthesia. Maintenance of anesthesia with inhalation agents. Possibilities of inhalation anesthesia with xenon inert gas. Methods for monitoring the patient's condition. The recovery period after general anesthesia. Mistakes, dangers and complications of general anesthesia.

**Topic 2. Anesthesia in esophageal surgery and abdominal surgery.
Anesthesia and intensive care in urology and nephrology (2 hours)**

Introduction to general anesthesiology. Preoperative preparation of the patient, determination of the degree of anesthesia risk according to ASA and MNOAP. Anesthesia in planned and emergency surgical interventions. The problem of "full stomach", prevention of ASA. Features of preparation for anesthesia and surgical intervention on the esophagus and stomach. The choice of method of anesthesia in operations on the pancreas. Choice of anesthesia method for operations on the large intestine. Choice of anesthesia method for kidney surgeries. General anesthesia for operations on the bladder and urethra. Choice of anesthesia method for radical prostatectomy. Choice of method of anesthesia for kidney transplantation.

**Topic 3. Anesthesia in traumatology, orthopedics and plastic surgery.
Anesthesia in neurosurgery (2 hours)**

Preoperative state, preparation for surgery and anesthesia in victims with mechanical trauma, peculiarities of anesthesia in polytrauma. Anesthesia in orthopedic and plastic surgeries. Anesthesia during spinal operation. Anesthesia during operations on the extremities. Anesthesia during surgeries and dressings for the burned. Choice of method of anesthesia for burn disease. Correction of water-electrolyte and protein deficiencies. Anesthesia in neurosurgical operations. Indications for tracheostomy and prolonged AV. Prevention of cerebral edema. Peculiarities of anesthesia during operations in the "sitting" position. Peculiarities of anesthesia during operations on the spinal cord. Peculiarities of anesthesia during surgeries on peripheral nerves and brachial plexus.

Topic 4. Anesthesia and IT in obstetrics and gynecology. Anesthesia in children (2 hours)

Physiology of pregnant women. State of vital organs and systems in pregnant women. Permeability of the placenta to the means of premedication and anesthesia. Anesthesia in planned and emergency cesarean section. Anesthesia in the complicated course of labor. Resuscitation and IT in pre-eclampsia and eclampsia.

Resuscitation and IT in EVI. IT in obstetric hemorrhage. IT and resuscitation for critical conditions in newborns. Anesthesia during surgical interventions in gynecology. Peculiarities of anesthesia for abdominal and laparoscopic surgeries in gynecology. Anesthesia during minor operations in gynecology and endoscopic studies.

Anatomo-physiological characteristics of children of different age periods. General anesthesia in children. Clinical and physiological evaluation of the general state to determine the degree of A-O risk. Indications for endotracheal anesthesia. Peculiarities of mask anesthesia. Local anesthesia in children. Peculiarities of epidural anesthesia in children. Age dosages of local anesthetics.

II. STRUCTURE AND CONTENT OF THE PRACTICAL PART OF THE COURSE (36 hours)

Class 1. Pathophysiology of extinction of vital functions of the body (3 hours)

Phases of the dying process. Characteristics and signs of preagonal period, agony, clinical and biological death. Leading pathogenetic factors in different types of organism's dying. Hypoxia, secondary metabolic disorder, compensation mechanisms. Systemic and organ circulation.

Pathophysiology of CNS in hypoxia and dying. Fading of CNS functions in dying. Morphological changes of brain at dying. Post reanimation disease: pathological processes characterizing post reanimation disease, methods of intensive therapy of post reanimation disease, principles of general care of reanimation patients.

Class 2. Cardiopulmonary resuscitation (CPR) (3 hours)

Basic cardiopulmonary resuscitation with automatic external defibrillation. Advanced cardiopulmonary resuscitation. Conducting CPR for various types of circulatory arrest. Termination and refusal of CPR

Class 3: Acute Respiratory Insufficiency (ARI) (3 hours)

Clinical anatomy of respiration. Anatomy of the lungs. Role of surfactant in breathing. Mechanisms of inspiration and exhalation. Regulation of breathing. Risk

factors, etiology, pathogenesis, clinical presentation, diagnostic criteria and principles of treatment of acute respiratory failure. Classification of ARI. Mechanism of ARI development in diseases of the respiratory system. Respiratory failure as a complication of somatic and surgical diseases. Foreign bodies of the respiratory tract.

Examination and treatment of emergency and critical conditions, accompanied by acute respiratory failure. Etiology, pathogenesis, classification of ARDS. Clinical picture, stages of ARDS. Treatment of ARDS.

Class 4: Respiratory therapy (3 hours)

Indications for respiratory support in intensive care. Apparatuses for continuous artificial lung ventilation (ALV). Types of breathing apparatuses. Safety of working with ventilators. Checking the tightness of the breathing circuit. Methods and modes of ventilatory ventilation. Invasive and noninvasive ventilation. High-frequency ventilation. Complications of artificial ventilation and methods of prevention.

Class 5. Water-electrolyte balance and acid-base balance (3 hours)

The amount of water in the body, its distribution and water balance. Water and electrolyte exchange disorders, edema. Regulation of acid-base balance, buffer systems. Acid-base balance disorders. Principles of treatment of IAB and acid-base balance disorders. Infusion therapy, indications for its use. Crystalloid solutions. Colloid solutions. The concept of a modern balanced infusion therapy. Complications of infusion therapy.

Class 6: Transfusiology (3 hours)

Blood components and rules of their preparation. Determination of blood groups and Rh factor, blood phenotyping. Indications for transfusions of blood components. Complications of blood transfusions.

Class 7: Nutritional support (3 hours)

Metabolism in critical conditions. Indications and contraindications for nutritional support. Therapeutic enteral nutrition. Parenteral nutrition. Intensive care intestinal failure syndrome.

Class 8: Acute Circulatory Insufficiency (3 hours)

Acute heart failure. Acute vascular failure. Cardiogenic and noncardiogenic pulmonary edema. Cardiac tamponade. Risk factors and clinical features of pulmonary embolism. Examination of patients with suspected pulmonary embolism, emergency care. Prevention of pulmonary embolism.

Class 9: Shock (3 hours)

Classification of shocks. Causes and mechanisms of shock development. Hypovolemic shock. Cardiogenic shock. Anaphylactic shock. Septic shock. Traumatic shock. Intensive care for different types of shock.

Class 10. Endogenous and exogenous intoxication. Acute renal insufficiency (ARF). Acute hepatic insufficiency. Methods of detoxification (3 hours)

Syndrome of endogenous intoxication. Extrarenal ARF. Parenchymal ARF. Infrarenal ARF. Diagnostic methods. Treatment of ARF. Indications for hemodialysis. Mechanical jaundice. Cirrhosis of the liver. Toxic hepatitis.

Classification of poisons. Mechanism of action of poisons. Neurotoxic poisons. Cardiotoxic poisons. Hepatotoxic poisons. Nephrotoxic poisons. Treatment of acute exogenous poisonings.

Ways and mechanisms of detoxification. Methods of natural detoxification of the body. Sorption methods of detoxification. Filtration methods of detoxification. Apheresis methods of detoxification. Hemodialysis in ARF and CPN.

Class 11. Resuscitation and IT in craniocerebral trauma and CNS pathology. Comas (3 hours)

IT in acute craniocerebral trauma (CTS). IT in cerebral circulation disorders (stroke). IT in meningoencephalitis. Etiology and mechanism of coma development. Features of the clinical picture of comas in diabetes mellitus, metabolic disorders. Comas in infectious diseases of the central nervous system (viral encephalitis, meningitis). Comas in exogenous poisonings. Tactics for comas of unclear etiology.

Class 12. Intensive Care in Acute Infectious Diseases and Septic Conditions. Nosocomial infections in anesthesiology and intensive care departments (3 hours)

Causes of nosocomial infections. Classification of nosocomial infections. Clinical picture, treatment of nosocomial infections. Prevention of nosocomial infections. Microbiological monitoring in ARIT. Antibacterial and antifungal drugs. Complications of antibiotic therapy. The concept of sepsis, pathogenesis and principles of sepsis treatment

Class 13. Disseminated intravascular coagulation syndrome (DIC) (3 hours)

Etiology, clinical presentation, DIC prevention. Prevention of thrombosis in the intensive care unit. Thrombolytic and antiplatelet therapy. Complications of thrombolytic and antiplatelet therapy.

Class 14. Resuscitation and IT in mechanical, combined, thermal and electrical trauma (3 hours)

Organization of resuscitation care for trauma. Traumatic shock, multiple organ failure, principles of resuscitation in polytrauma. IT in burn shock. IT in cases of hypothermia. IT in cases of electrical trauma. Technical equipment of vehicles for resuscitation assistance to victims of mass trauma.

Class 15. Physical status. Basic pathological conditions. Respiratory system. Cardiovascular system (3 hours)

General therapeutic examination, palpation, auscultation, percussion. Operative and anesthetic risk factors. Determination of O-A risk according to ASA and MNOAP. Obstructive, restrictive lung disease, central respiratory disorders. Examination of the patient with pulmonary disease. Assessment of risk factors for pulmonary complications.

Diseases of the cardiovascular system: arterial hypertension, heart rhythm disorders, coronary heart disease, valve lesions, heart failure, cardiac tamponade. Study of a patient with diseases of the circulatory system. Evaluation of risk factors for cardiovascular complications.

Class 16. Premedication. Types, stages and components of general anesthesia. General anesthesia (3 hours)

Types, stages and methods of premedication. Preparations for premedication. Undesirable reactions to premedication, individual reaction, side effects. Complications of premedication. Premedication in pediatrics. Introductory anesthesia, techniques, drugs for carrying out, possible complications. Baseline anesthesia, techniques, drugs for conduct, possible complications. Withdrawal from anesthesia. Early postnarcotic period, prevention of complications. Induction of anesthesia. Maintenance of anesthesia with inhalation agents. Possibilities of inhalation anesthesia with xenon inert gas. Methods for monitoring the patient's condition. Mistakes, dangers and complications of general anesthesia.

Class 17. Principles of Intensive Therapy and Postoperative Care (3 hours)

The recovery period after general anaesthesia. Organization of an intensive care system. Rapid diagnosis. Pain management. Prophylaxis and correction of disturbances in body systems. Corrective infusion and transfusion therapy. Use of enteral and parenteral nutrition methods.

Class 18. Pain acute and chronic. Regional anesthesia. Conduction anesthesia. Pain management (3 hours).

Modern concepts of pain. Classification of pain syndromes. Social aspects of pain. Peripheral and central mechanisms of nociception. Morphofunctional organization of nociceptive and antinociceptive brain systems. Pathophysiological classification of pain syndromes: nociceptive pain, neuropathic pain, psychogenic pain. Classification of analgesic agents. Measurement and assessment of pain. Principles of postoperative pain management. Multimodal analgesia.

Regional anesthesia in various fields of medicine. Spinal anesthesia. Epidural anesthesia. Conduction anesthesia. Peripheral nerve blockade. Local infiltration anesthesia. Indications, technique of these types of anesthesia. Mechanisms of chronic pain. Examination of the patient suffering from pain. Headaches, back pain. Pain in oncological diseases. Classification, mechanisms of development. Principles of diagnosis and treatment of chronic pain syndrome.

III. EDUCATIONAL AND METHODOLOGICAL SUPPORT FOR INDEPENDENT WORK OF STUDENTS

The educational program presents the main content of the topics, assessment tools: terms and concepts required to master the discipline.

During the assimilation of the course "Anesthesiology, resuscitation, intensive care" the student has to do a large amount of independent work, which includes preparing for seminars and writing an essay.

Practical exercises help students to deepen their understanding of the educational material, acquire skills for creative work on documents and primary sources.

Plans of practical classes, their topics, recommended literature, the purpose and objectives of its study are reported by the teacher at the introductory classes or in the curriculum for the discipline.

Before the study of the topic, it is necessary to get acquainted with the main issues of the plan of the practical lesson and a list of recommended literature.

Beginning the preparation for the practical training, it is necessary first of all to refer to the lecture notes, sections of textbooks and manuals to get a general idea of the place and importance of the topic in the course being studied. Then work with additional literature, take notes on the recommended sources.

In the process of studying the recommended material, it is necessary to understand the construction of the topic under study, to highlight the main provisions, trace their logic and thereby penetrate into the essence of the problem being studied.

It is necessary to keep records of the material studied in the form of an outline, which, along with the visual, includes motor memory and allows you to accumulate an individual fund of auxiliary materials for rapid repetition of the read, to mobilize the accumulated knowledge. The main forms of recording: a plan (simple and expanded), extracts, theses.

During the preparation it is important to compare sources, to think through the material studied and to build an algorithm of actions, to think carefully about your oral presentation.

In the practical training, each participant should be ready to speak on all the questions set out in the plan, to be as active as possible in their consideration. The presentation should be convincing and well-reasoned, even mere reading of the outline is not allowed. It is important to show your own attitude to what is being said, to express your personal opinion, understanding, justify it, and draw the right conclusions from what is being said. You can refer to notes and lectures, directly to primary sources, use knowledge of monographs and publications, facts and observations of modern life, etc.

The student who did not have time to speak at the practical session may present to the teacher for review prepared outline and, if necessary, to answer the teacher's questions on the topic of the practical session to obtain credit for this topic.

Educational-methodical support for students' independent work in the discipline "Anesthesiology, resuscitation, intensive care" is presented in Appendix 1 and includes:

- characteristics of the tasks for students' independent work and methodological recommendations for their performance;
- Requirements for the presentation and design of the results of independent work;
- criteria for assessing the performance of independent work.

IV. MONITORING THE ACHIEVEMENT OF COURSE OBJECTIVES

Code and Statement of Competence		Stages of competence formation			
№ п/п	Controlled sections/topics of disciplines	Codes and stages of competency formation		Evaluation tools	
				Current control	Intermediate Assessment /Exam
1	Module 1 Basics of resuscitation	PC-1.1 Has the ability to assess the condition of a patient requiring medical care in emergency or emergency forms	Know	OQ-1 Interview	Credit Questions Semester 7 -1-132

			Is able to	PW-1 Test	IIP-1 Test
			Possesses	OQ-3 Report	OQ-2 Colloquium
	Module 1 Basics of resuscitation	PC-1.2 Knows the list of methods of laboratory and instrumental studies to assess the patient's condition, the main medical indications for conducting research and interpreting the results	Know	OQ-1 Interview	Credit Questions Semester 7 -1-132
			Is able to	PW-1 Test	PW-1 Test
			Possesses	OQ-3 Report	OQ-2 Colloquium
	Module 1 Basics of resuscitation Module 2 Fundamentals of Intensive Care	PC-1.3 Knows the etiology, pathogenesis and pathomorphology, clinical picture, differential diagnosis, features of the course, complications and outcomes of diseases of internal organs	Know	OQ-1 Interview	Credit Questions Semester 7 -1-132
			Is able to	PW-1 Test	PW-1 Test
			Possesses	OQ-3 Report	OQ-2 Colloquium
	Module 1 Basics of resuscitation Module 2 Fundamentals of Intensive Care Module 3 General Anesthesiology	PC-1.4 Knows the methodology for collecting complaints and anamnesis from patients (their legal representatives)	Know	OQ-1 Interview	Credit Questions Semester 7 -1-132
			Is able to	PW-1 Test	PW-1 Test
			Possesses	OQ-3 Report	OQ-2 Colloquium
2	Module 2 Fundamentals of Intensive Care Module 3 General Anesthesiology	PC-2.1 Able to identify clinical signs of conditions requiring emergency medical care in case of sudden acute diseases, conditions, exacerbation of chronic diseases without obvious signs of a threat to the patient's life	Know	OQ-1 Interview	Credit Questions Semester 7 -1-132
			Is able to	OQ-1 Interview	PW-1 Test
			Possesses	PW-1 Test PW-11 Case Study	OQ-2 Colloquium
	Module 1 Basics of resuscitation Module 2 Fundamentals of Intensive Care Module 3 General Anesthesiology	PC-2.2 Able to carry out measures to provide medical care in an emergency form for sudden acute diseases, conditions, exacerbation of chronic diseases without obvious signs of a threat to the patient's life	Know	OQ-1 Interview	Credit Questions Semester 7 -1-132
			Is able to	PW-1 Test	PW-1 Test
			Possesses	OQ-3 Report	OQ-2 Colloquium
	Module 1 Basics of resuscitation Module 2 Fundamentals of Intensive Care	PC-2.3 Knows how to use medicines and medical devices in the provision of medical care in emergency or urgent forms for sudden acute diseases, conditions, exacerbation of chronic	Know	OQ-1 Interview	Credit Questions Semester 7 -1-132
			Is able to	PW-1 Test	PW-1 Test

		diseases without obvious signs of a threat to the patient's life	Possesses	OQ-3 Report	OQ-2 Colloquium
Module 1 Basics of resuscitation	PC-3.1 Is able to identify conditions requiring emergency medical care, including clinical signs of sudden cessation of blood circulation and respiration	Know	OQ-1 Interview	Credit Questions Semester 7 -1-132	
		Is able to	PW-1 Test	PW-1 Test	
		Possesses	OQ-3 Report	OQ-2 Colloquium	
Module 1 Basics of resuscitation Module 2 Fundamentals of Intensive Care	PC-3.2 Able to perform basic cardiopulmonary resuscitation measures in combination with electropulse therapy (defibrillation)	Know	OQ-1 Interview	Credit Questions Semester 7 -1-132	
		Is able to	PW-1 Test	PW-1 Test	
		Possesses	OQ-3 Report	OQ-2 Colloquium	
Module 1 Basics of resuscitation Module 2 Fundamentals of Intensive Care Module 3 General Anesthesiology	PC-3.3 Knows clinical signs of sudden cessation of circulation and/or respiration	Know	OQ-1 Interview	Credit Questions Semester 7 -1-132	
		Is able to	OQ-1 Interview	PW-1 Test	
		Possesses	PW-1 Test PW-11 Case Study	OQ-2 Colloquium	
Module 1 Basics of resuscitation Module 2 Fundamentals of Intensive Care Module 3 General Anesthesiology	PC-4.6 Knows the procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, standards of medical care	Know	OQ-1 Interview	Credit Questions Semester 7 -1-132	
		Is able to	PW-1 Test	PW-1 Test	
		Possesses	OQ-3 Report	OQ-2 Colloquium	
Module 1 Basics of resuscitation Module 2 Fundamentals of Intensive Care Module 3 General Anesthesiology	PC-6.1 Knows modern methods of using medicines, medical devices and therapeutic nutrition for diseases and conditions in a patient in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care	Know	OQ-1 Interview	Вопросы зачета 7 семестр - 1-132	
		Is able to	PW-1 Test	PW-1 Test	
		Possesses	OQ-3 Report	OQ-2 Colloquium	
Module 1 Basics of resuscitation Module 2 Fundamentals of Intensive Care	PC-6.3 Is able to draw up a treatment plan for the disease and the patient's condition, taking into account the diagnosis, the patient's age, the clinical picture of the disease in accordance with the current procedures for the	Know	OQ-1 Interview	Credit Questions Semester 7 -1-132	
		Is able to	OQ-1 Interview	PW-1 Test	

		provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care	Possesses	PW-1 Test PW-11 Case Study	OQ-2 Colloquium
Module 1 Basics of resuscitation Module 2 Fundamentals of Intensive Care	PC-7.1 Knows the mechanism of action of drugs, medical devices and therapeutic nutrition, medical indications and contraindications for their use; Complications caused by their use		Know	OQ-1 Interview	Credit Questions Semester 7 -1-132
			Is able to	PW-1 Test	PW-1 Test
			Possesses	OQ-3 Report	OQ-2 Colloquium
Module 1 Basics of resuscitation Module 2 Fundamentals of Intensive Care Module 3 General Anesthesiology	PC-7.2 Able to prescribe medicines, medical devices and therapeutic nutrition, taking into account the diagnosis, age and clinical picture of the disease in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care		Know	OQ-1 Interview	Credit Questions Semester 7 -1-132
			Is able to	PW-1 Test	PW-1 Test
			Possesses	OQ-3 Report	OQ-2 Colloquium
Module 1 Basics of resuscitation Module 2 Fundamentals of Intensive Care Module 3 General Anesthesiology	PC-11.4 Knows the signs of biological death, the procedure for fixing the fact of biological death and the procedure for registering biological death		Know	OQ-1 Interview	Credit Questions Semester 7 -1-132
			Is able to	OQ-1 Interview	PW-1 Test
			Possesses	PW-1 Test PW-11 Case Study	OQ-2 Colloquium

Control and methodological materials, as well as criteria and indicators necessary for assessing knowledge, skills, abilities and characterizing the stages of the formation of competencies in the process of mastering the educational program are presented in Appendix 2.

V. LIST OF EDUCATIONAL LITERATURE AND INFORMATION AND METHODOLOGICAL SUPPORT OF THE DISCIPLINE

Bibliography

1. Human anatomy. Atlas. In 3 volumes. Volume 2. Internal organs [Electronic resource]: textbook / Bilich G.L., Kryzhanovsky V.A. - M. : GEOTAR-Media, 2013. - <http://www.studmedlib.ru/book/ISBN9785970425428.html>

2. Fundamentals of resuscitation [Electronic resource]: textbook / Sumin S.A., Okunskaya T.V. - M. : GEOTAR-Media, 2013. - <http://www.studmedlib.ru/book/ISBN9785970424247.html>

Further reading

1. Kolesnikova M.A. Anesthesiology and resuscitation [Electronic resource]: textbook / Kolesnikova M.A. — Electron. textual data.— Saratov: Scientific book, 2012.— 159 p.— Access mode: <http://www.iprbookshop.ru/8176.html>

2. Medical manipulations [Electronic resource] / Mark Stoneham, John Westbrook. - M. : GEOTAR-Media, 2011. - <http://www.studmedlib.ru/book/IGTR0001.html>

3. Shapovalov K.G. Introduction to anesthesiology [Electronic resource]: textbook / Shapovalov K.G., Trusova Yu.S., Kushnarenko K.E. — Electron. textual data.— Chita: Chita State Medical Academy, 2012.— 79 p.— Access mode: <http://www.iprbookshop.ru/55308.html>

Electronic resources

1. Scientific and Practical Society of Anesthesiologists and Resuscitators of St. Petersburg <https://spboar.ru/>
2. Journal of Intensive Care <http://www.icj.ru/>
3. National Resuscitation Council <https://www.rusnrc.com/links>
4. European Resuscitation Board <https://www.rusnrc.com/--2015->
5. MED-EDU. ru - Medical Portal/ <http://www.medvideo.org/surgery/>

VI. GUIDELINES FOR MASTERING THE DISCIPLINE

During the study of the discipline "Anesthesiology, resuscitation, intensive care" offers a variety of methods and means of learning content: lecture, practical exercises, tests, tests, independent work of students.

Lecture is the basic active form of classroom training, explanation of the fundamental and the most difficult theoretical parts of human anatomy, which assumes intensive intellectual activity of a student and is especially difficult for the first-year students. Lecture must always have cognitive, educational and organizing

character. Lecture notes help to master the theoretical material of the discipline. When listening to a lecture should take notes of the most important and preferably their own wording, which allows you to better remember the material. An outline is useful when it is written by the student. You can develop your own word abbreviation scheme. The names of topics and paragraphs can be highlighted with colored markers or pens. In a lecture, the instructor gives only a small portion of material on those or other topics that are presented in textbooks. Therefore, when working with the lecture notes it is always necessary to use the main textbook and additional literature, which are recommended for the discipline. It is such serious work of a student with the lecture material that allows him to achieve success in mastering new knowledge. To present lecture course on "Anesthesiology, Resuscitation, Intensive Care" discipline as forms of active learning are used: lecture-chat, lecture-visualization, which are based on the knowledge acquired by students in interdisciplinary disciplines: "Human Anatomy", "Normal Physiology", "Pathological Anatomy", "Pathological Physiology". To illustrate the verbal information are used presentations, tables, diagrams on the board. In the course of presentation of the lecture material problematic questions or questions with elements of discussion are put.

Lecture - visualization

Reading a lecture is accompanied by a display of tables and slides, which contributes to a better perception of the material presented. Lecture - visualization requires certain skills - verbal presentation of the material should be accompanied and combined with a visual form. Information presented in the form of diagrams on the board, tables, slides, allows you to form problematic issues, and contribute to the development of professional thinking of future specialists.

Lecture-conversation.

Lecture-conversation, or as in pedagogy this form of teaching is called "dialogue with the audience," is the most common form of active learning and allows students to be involved in the learning process, as there is direct contact between the teacher and the audience. This contact is achieved in the course of the lecture, when students

are asked questions of a problematic or informational nature or when I ask students to ask me questions themselves. The questions are offered to the whole audience, and any of the students can offer his or her own answer, while the other can supplement it. From lecture to lecture I identify more active students and try to activate students who do not participate. This form of lecture allows me to engage students, activate their attention and thinking, gain collective experience, and learn how to form questions. The advantage of a lecture-lecture is that it allows me to draw students' attention to the most important issues of the topic, to determine the content and pace of the presentation of educational material.

Lecture - press conference

At the beginning of the lesson, the instructor calls the topic of the lecture and asks students to ask him questions about the topic in writing. Each student should formulate the most interesting questions on the lecture topic within 2-3 minutes, write them on a piece of paper and give the note to the teacher. The teacher sorts out questions according to their semantic content for 3-5 minutes and starts the lecture. The material is presented as a coherent disclosure of the topic, not as an answer to each question posed, but in the course of the lecture answers are formulated accordingly. At the end of the lecture the instructor conducts a final assessment of the questions, identifying students' knowledge and interests.

Practical classes in the discipline "Anesthesiology, resuscitation, intensive care"

Practical classes - a collective form of consideration of educational material. Seminar classes, which are also one of the main types of practical classes designed for in-depth study of the discipline, taking place in an interactive mode. In the classroom on the theme of the seminar questions are discussed and then together with the teacher conduct a discussion, which is aimed at consolidating the discussed material, the formation of skills to conduct controversy, the development of independence and critical thinking, the ability of students to navigate in large information flows, to develop and defend their own position on the problematic issues of academic disciplines. As the methods of active learning are used in

practical classes: press-conference, detailed conversation, dispute. An extended conversation assumes that students are prepared on each issue of the lesson plan with a common for all list of recommended compulsory and additional literature. Reports are prepared by students on topics proposed in advance.

Debate in a group has a number of advantages. The debate may be called by the teacher in the course of the class or it may be planned by the teacher in advance. In the course of debates, students develop their resourcefulness and quick thinking reactions.

Press Conference. The instructor assigns 3-4 students to prepare short reports. Then one of the members of that group makes a report. After the report, students ask questions, which are answered by the speaker and other members of the expert group. Based on the questions and answers, a creative discussion unfolds with the instructor.

LIST OF INFORMATION TECHNOLOGY AND SOFTWARE

The location of the computer equipment on which the software is installed, the number of jobs	List of licensed software
Multimedia auditorium Vladivostok Russian island, Ayaks 10, building 25.1, RM. M723 Area of 80.3 m2 (Room for independent work)	Windows Seven enterprice SP3x64 Operating System Microsoft Office Professional Plus 2010 office suite that includes software for working with various types of documents (texts, spreadsheets, databases, etc.); 7Zip 9.20 - free file archiver with a high degree of data compression; ABBYY FineReader 11 - a program for optical character recognition; Adobe Acrobat XI Pro 11.0.00 - software package for creating and viewing electronic publications in PDF; WinDjView 2.0.2 - a program for recognizing and viewing files with the same format DJV and DjVu.

VIII. MATERIAL AND TECHNICAL SUPPORT

For practical work, as well as for the organization of independent work, students have access to the following laboratory equipment and specialized classrooms that meet the current sanitary and fire safety standards, as well as safety requirements for educational and research and production work:

Name of equipped premises and premises for independent work	List of main equipment
Computer class of the School of Medicine aud. M723, 15 workplaces	<p>Screen, electrically 236*147 cm to trim the screen; Projector DLP technology, 3000 ANSI LM, WXGA with 1280x800 resolution, 2000:1 Mitsubishi EW330U; Subsystem of specialized mounting equipment course-2007 Tuarex; Subsystem of videocommunity: matrix switch DVI and DXP 44 DVI Pro advertising; extension cable DVI over twisted pair DVI 201 TX/RX advertising; Subsystem of audiocommentary and sound; speaker system for ceiling si 3ct LP Extron on from; digital audio processor DMP 44 LC the Extron; the extension for the controller control IPL T CR48; wireless LAN for students is provided with a system based on 802.11 a/b/g/N 2x2 MIMO(2SS) access points.</p> <p>Monoblock HP Loope 400 all-in-one 19.5 in (1600x900), core i3-4150t, 4GB DDR3-1600 (1x4GB), 1TB HDD 7200 SATA, and a DVD+ / - RW, GigEth, Wi-Fi and BT, the USB port of roses/MSE, Win7Pro (64-bit)+Win8.1Pro(64-bit), 1-1-1 Wty</p>
Reading rooms of the Scientific library of the University open access Fund (building a - 10)	<p>Monoblock HP Loope 400 All-in-One 19.5 in (1600x900), Core i3-4150T, 4GB DDR3-1600 (1x4GB), 1TB HDD 7200 SATA, DVD+/- RW,GigEth,wifi,BT,usb kbd/mse,Win7Pro (64-bit)+Win8.1Pro(64-bit),1-1-1 Wty Speed Internet access 500 Mbps. Jobs for people with disabilities equipped with displays and Braille printers.; equipped with: portable reading devices flatbed texts, scanning and reading machines videovelocity with adjustable color spectrums; increasing electronic loops and ultrasonic marker</p>
690922, Primorsky Krai, Vladivostok, Russky Island, Ajax village, 10, Multimedia audience	<p>Electric screen 236*147 cm Trim Screen Line; DLP Projector, 3000 ANSI Lm, WXGA 1280x800, 2000:1 ew330u Mitsubishi; document camera CP355AF Avervision, video camera MP-HD718 Multipix; Subsystem specialized hardware fixtures CORSA-2007 Tuarex;</p> <p>Subsystem video switching: Subsystem audio switching sound amplification: power amplifier, point-based wireless LAN access 802.11 a/b/g/n 2x2 MIMO(2SS).</p>
Accreditation-simulation center of the school of medicine	<p>Accreditation and Simulation Center:</p> <p>Adult model for demonstration and practice of foreign body removal (Heimlich technique) (2 pcs.) Defibrillator Schiller Fred mod. Easy Trainer with accessories (1 pc.) Adult simulator with electronic control, training, computerized (1 pc.) AED training defibrillator (1 pc.) Phantom of the respiratory system, NMS and defibrillation (1 pc.) Resuscitation and patient care mannequin (1 pc.) Pulse oximeter (1 pc.) Shield spinal immobilization YXH-1A6A complete with head retainer folding immobilization (1 pc.) Tire - collar for adults SHTIVV-01 Longitudinal-transverse folding stretcher NPPS-MM (2 pcs.) Set of transport ladder tires KSTL-MP-01Medical stretcher (1 pc.) Universal medical goniometer</p>

In order to provide special learning conditions for disabled people and persons with disabilities at FEFU, all buildings are equipped with ramps, elevators, elevators, specialized seats, equipped restrooms, and information and navigation support signs.

Clinical bases:

Medical Center of the Federal State Autonomous Educational Institution of Higher Education "Far Eastern Federal University



THE MINISTRY OF EDUCATION AND SCIENCE OF THE RUSSIAN FEDERATION
Federal state Autonomous educational institution of higher education
«Eastern federal University»
(FEFU)

SCHOOL OF MEDICINE

**TRAINING AND METHODOLOGICAL SUPPORT INDEPENDENT
WORK OF STUDENTS
in the disciplines
«Anesthesiology, Resuscitation, Intensive Care»
specialty 31.05.01 " General medicine»
full-time training form**

**Vladivostok
2022**

Independent work includes:

- 1) library or homework with academic literature and lecture notes,
- 2) preparation for practical classes,
- 3) preparation for tests and control interview (test)

The order of students' independent work is determined by the schedule of independent work in the discipline.

Schedule of independent work in the discipline

№	Date/Deadlines	Type of independent work	Approximate norms of time for execution (hour)	Form of control
11 семестр				
1	Week 2-3	Abstract	9	OQ-3, Report
2	Week 4-15	Presentation on the topic of the essay	57	OQ-3, Report
3	Week 17-18	Preparation for the test	6	OQ-1, Interview PW-1, Test

Topics of reports and abstracts

In the discipline of 72 hours of independent work, within the framework of these hours, 2 oral reports on the proposed topics are performed.

Topics of reports and abstracts

1. Intensive care of acute heart failure.
2. acute blood loss.
3. acute respiratory distress syndrome.
4. Nutritional support in intensive care.
5. Intensive care of acute water-electrolyte balance disorders.
6. First aid in respiratory and circulatory arrest. Cardiopulmonary resuscitation.
7. Basics of infusion therapy.
8. Intensive care of shock.

9. Methods of intensive therapy of post-intensive illness.
10. DIC syndrome.
11. Treatment of pain syndromes.
12. Premedication.
13. Inhalational anesthesia. Low flow anesthesia.
14. Regional anesthesia of the upper extremity.
15. Spinal and epidural anesthesia.
16. Anaphylactic shock. Emergency care, intensive care.
17. Total intravenous anesthesia.
18. Thermoregulation during anesthesia.
19. Artificial blood circulation. Anesthesia support in cardiac surgery.
20. Peculiarities of anesthesia in children.

Guidelines for writing and formatting an essay

The abstract - creative activity of the student, which reproduces in its structure research activity on the solution of theoretical and applied problems in a certain branch of scientific knowledge.

The abstract, being a model of scientific research, is an independent work, in which the student solves a problem of theoretical or practical nature, applying scientific principles and methods of this branch of scientific knowledge. The result of this scientific search may have not only subjective, but also objective scientific novelty, and therefore can be presented for discussion to the scientific community in the form of a scientific report or communication at a scientific conference, as well as in the form of a scientific article.

The essay is performed under the guidance of the supervisor and assumes the acquisition of skills to build business cooperation, based on ethical norms of scientific activity. Purposefulness, initiative, disinterested cognitive interest, responsibility for the results of their actions, conscientiousness, competence - personal qualities that characterize the subject of research activities, corresponding to the ideals and norms of modern science.

An abstract is an independent study and research activity of a student. The supervisor provides advisory assistance and evaluates the process and results of the activity. He or she provides approximate topics of abstracts, clarifies the problem and topic of the research together with the resident, helps to plan and organize the research activity, appoints the time and a minimum number of consultations. The supervisor accepts the text of the abstract for review at least ten days before the defense.

Traditionally there is a certain structure of the abstract, the main elements of which in the order of their arrangement are the following:

1. title page.
2. Assignment.
- Table of contents.
4. List of symbols, symbols and terms (if necessary).
5. Introduction.
6. Main part.
7. Conclusion.
8. Bibliography list.
9. Appendices.

On the title page are indicated: the educational institution, the department, the author, the supervisor, the theme of research, place and year of performance of the abstract.

The title of the abstract should be as brief as possible and fully correspond to its content.

The table of contents reflects the names of the structural parts of the abstract and the pages on which they are located. It is advisable to place the table of contents at the beginning of the work on one page.

The presence of a detailed introduction is a mandatory requirement for the abstract. Despite the small volume of this structural part, its writing causes considerable difficulty. However, its qualitatively executed introduction is the key to understanding the entire work, testifies about the professionalism of the author.

Thus, the introduction - a very responsible part of the essay. The introduction should begin with a rationale for the relevance of the chosen topic. In the application to the abstract concept of "relevance" has one peculiarity. On how the author of the essay is able to choose the topic and how well he understands and evaluates this topic in terms of modernity and social significance, characterizes its scientific maturity and professional preparedness

In addition, in the introduction it is necessary to identify the methodological basis of the abstract, to name the authors, whose works formed the theoretical basis of research. Literature review on the topic should show a thorough familiarity of the author with the special literature, his ability to systematize sources, critically examine them, highlight the essential, to determine the main thing in the current state of the topic study.

The introduction reflects the importance and relevance of the chosen topic, defines the object and subject, purpose and objectives, chronological framework of the study.

The introduction concludes with general conclusions about the scientific and practical significance of the topic, the degree of its study and the availability of sources, the hypothesis.

In the main part the essence of the problem is stated, the topic is revealed, the author's position is defined, the factual material is given as an argument and to illustrate the points put forward. The author must show the ability to present the material in a coherent way, while analyzing it at the same time. Preference is given to the main facts rather than to minor details.

The abstract ends with the final part, which is called the "conclusion. Like any conclusion, this part of the abstract performs the role of the conclusion due to the logic of the study, which takes the form of synthesis of the scientific information accumulated in the main part. This synthesis - a consistent, logically structured presentation of the results and their relationship with the overall goal and specific objectives set and formulated in the introduction. It is here that the so-called "inference" knowledge is contained, which is new in relation to the

original knowledge. The conclusion can include suggestions of a practical nature, thereby increasing the value of theoretical materials.

So, in the conclusion of the abstract should be: a) presented the conclusions of the research; b) theoretical and practical significance, novelty of the abstract; c) indicated the possibility of applying the results of research.

After the conclusion it is customary to place a bibliographical list of references. This list is one of the essential parts of the abstract and reflects the independent creative work of the author of the abstract.

The list of references is placed at the end of the paper. It is arranged either in alphabetical order (by author or book title), or in the order of appearance of references in the text of the written work. In all cases indicate the full title of the work, the names of the authors or editors of the publication, if a team of authors participated in writing the book, the data on the number of volumes, the name of the city and publisher where the work was published, the year of publication, the number of pages.

Criteria for evaluation of the abstract.

The stated understanding of the abstract as an integral author's text determines the criteria for its evaluation: the novelty of the text; validity of the choice of source; the degree of disclosure of the essence of the issue; compliance with the requirements for design.

Novelty of the text: a) relevance of the research topic; b) novelty and independence in the statement of the problem, formulation of a new aspect of the known problem in the establishment of new connections (interdisciplinary, intrasubject, integration); c) ability to work with research, critical literature, organize and structure material; d) manifestation of the author's position, independence of estimates and judgments; e) style unity of the text, the unity of genre features.

Degree of disclosure of the essence of the issue: a) correspondence of the plan to the topic of the essay; b) correspondence of the content to the topic and the plan of the essay; c) completeness and depth of knowledge on the topic; d) validity of

methods and methods of working with the material; f) ability to summarize, draw conclusions, compare different points of view on one issue (problem).

Validity of the choice of sources: a) evaluation of the literature used: whether the most famous works on the topic of research (including journal publications of recent years, the latest statistics, summaries, references, etc.) were used.

Compliance with the requirements to the design: a) how correctly designed references to the used literature, reference list; b) assessment of literacy and culture of presentation (including spelling, punctuation, stylistic culture), command of terminology;

A grade of "Excellent" is given if all the requirements for writing and defending an essay are met: the problem is identified and justified its relevance, a brief analysis of different points of view on the problem under consideration and logically presented own position, conclusions are formulated, the topic is fully disclosed, the volume is maintained, requirements for external design are met, correct answers to additional questions are given.

Grade "Good" - the basic requirements for the essay and its defense are fulfilled, but there are some shortcomings. In particular, there are inaccuracies in the presentation of the material, there is no logical consistency in the judgments, the volume of the essay is not maintained, there are omissions in the design, to the additional questions in the defense of incomplete answers.

Assessment "Satisfactory" - there are significant deviations from the requirements for abstracting. In particular, the topic is covered only partially; there are factual errors in the content of the abstract or when answering additional questions; during the defense there is no conclusion.

The grade "Unsatisfactory" - the topic of the essay is not disclosed, there is a significant lack of understanding of the problem or the student's essay is not presented.

Work in the simulation center (mastered skills)

1. Basic cardiopulmonary resuscitation (pre-hospital stage)- algorithm.
2. Advanced cardiopulmonary resuscitation (hospital phase)-algorithm

3. Circulatory arrest, types, diagnostic signs.
4. Cardiopulmonary resuscitation by Safar
5. Safar triple reception
6. Performing closed heart massage
7. Medications used to restore cardiac activity
8. Artificial pulmonary ventilation in resuscitation measures
9. Intensive care for drowning
10. Intensive care for electric shock
11. Intensive care in acute exogenous poisoning
12. Indications for electric cardiac defibrillation



MINISTRY OF EDUCATION AND SCIENCE OF THE RUSSIAN FEDERATION
Federal state autonomous educational institution
of higher education
« Far Eastern Federal University »
(FEFU)

SCHOOL OF MEDICINE

ASSESSMENT FUND
on discipline «Anesthesiology, Resuscitation, Intensive Care»
Direction of training (specialty) 31.05.01 General medicine
Form of training: full-time

Vladivostok
2022

Passport of assessment fund

It is filled in accordance with the Regulations on the Funds of Evaluation Funds of Educational Programs of Higher Education - FEFU Bachelor's, Specialist's, Master's Programs, approved by the Rector's Order No. 12-13-850 of 12.05.2015.

As a result of studying this discipline, students form the following professional competencies:

Task type	Code and name of professional competence (result of mastering)	Code and name of the competency achievement indicator
Type of tasks of professional activity: individual	PC-1 Ready to participate in the provision of medical care in emergency or emergency forms	PC-1.1 Has the ability to assess the condition of a patient requiring medical care in emergency or emergency forms
		PC-1.2 Knows the list of methods of laboratory and instrumental studies to assess the patient's condition, the main medical indications for conducting research and interpreting the results
		PC-1.3 Knows the etiology, pathogenesis and pathomorphology, clinical picture, differential diagnosis, features of the course, complications and outcomes of diseases of internal organs
		PC-1.4 Knows the methodology for collecting complaints and anamnesis from patients (their legal representatives)
	PC-2 Ready to provide emergency medical care to patients with sudden acute diseases, conditions, exacerbation of chronic diseases without obvious signs of a threat to the patient's life	PC-2.1 Able to identify clinical signs of conditions requiring emergency medical care in case of sudden acute diseases, conditions, exacerbation of chronic diseases without obvious signs of a threat to the patient's life
		PC-2.2 Able to carry out measures to provide medical care in an emergency form for sudden acute diseases, conditions, exacerbation of chronic diseases without obvious signs of a threat to the patient's life
		PC-2.3 Knows how to use medicines and medical devices in the provision of medical care in emergency or urgent

		forms for sudden acute diseases, conditions, exacerbation of chronic diseases without obvious signs of a threat to the patient's life
PC-3 Ready to provide emergency medical care to patients in conditions that pose a threat to the patient's life, including clinical death (stopping the vital functions of the human body (blood circulation and / or respiration))	PC-3.1	Able to identify conditions that require emergency medical care, including clinical signs of sudden cessation of blood circulation and breathing
	PC-3.2	Able to perform basic cardiopulmonary resuscitation measures in combination with electropulse therapy (defibrillation)
	PC-3.3	Knows the clinical signs of sudden cessation of circulation and/or respiration
PC-4 Ready to collect and analyze patient complaints, anamnesis data, results of physical examination, laboratory, instrumental, pathoanatomical and other studies in order to recognize the condition or establish the presence or absence of the disease in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care	PC-4.6	Knows the procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, standards of medical care
PC-6 Able to develop a treatment plan for a disease or condition, taking into account the diagnosis, age and clinical picture in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care	PC-6.1	Knows modern methods of using medicines, medical devices and therapeutic nutrition for diseases and conditions in patients in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care
	PC-6.3	Is able to draw up a treatment plan for the disease and the patient's condition, taking into account the diagnosis, age of the patient, the clinical picture of the disease in accordance with the current procedures for the provision of medical

		care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care
	PC-7 Ready to prescribe medicines, medical devices and medical nutrition, taking into account the diagnosis, age and clinical picture of the disease and in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care	PC-7.1 Knows the mechanism of action of drugs, medical devices and medical nutrition, medical indications and contraindications for their use; Complications caused by their use
		PC-7.2 Is able to prescribe medicines, medical devices and therapeutic nutrition, taking into account the diagnosis, age and clinical picture of the disease in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care
	PC-11 Ready to conduct an examination of temporary disability, participate in a medical and social examination, ascertain the biological death of a person	PC-11.4 Knows the signs of biological death, the procedure for fixing the fact of biological death and the procedure for registering biological death

PC-1.1 Has the ability to assess the condition of a patient requiring medical care in emergency or emergency forms	Knows the clinical signs that characterize the condition of a patient requiring emergency or emergency medical care
	Able to assess the clinical signs characterizing the condition of a patient requiring emergency or emergency medical care
	Possesses the skill of determining the condition of a patient requiring emergency or emergency medical care
PC-1.2 Knows the list of methods of laboratory and instrumental studies to assess the patient's condition, the main medical indications for conducting research and interpreting the results	Knows the methods of laboratory and instrumental studies to assess the patient's condition in the provision of emergency and emergency medical care.
	Able to determine the indications for the appointment of laboratory and instrumental studies to assess the patient's condition in the provision of emergency and emergency medical care.
	Possesses the skill of interpreting the results of laboratory and instrumental studies to assess the patient's condition in the provision of emergency and emergency medical care.
PC-1.3 Knows the etiology, pathogenesis and	Knows the methodology of interviewing patients (their legal representatives) in the provision of emergency and emergency medical care.

pathomorphology, clinical picture, differential diagnosis, features of the course, complications and outcomes of diseases of internal organs	Knows how to conduct a survey of patients (their legal representatives) in the provision of emergency and emergency medical care.
	He is proficient in the methodology for collecting complaints and anamnesis from patients and / or their legal representatives in the provision of emergency and emergency medical care.
PC-1.4 Knows the methodology for collecting complaints and anamnesis from patients (their legal representatives)	Knows the etiology, pathogenesis and pathomorphology, clinical picture, features of the course, complications and outcomes of diseases of internal organs in the provision of emergency and emergency medical care.
	Able to formulate a clinical diagnosis, identify a number of diseases for differential diagnosis in the provision of emergency and emergency medical care.
	Possesses the skill of making a clinical diagnosis, conducting a differential diagnosis. in the provision of emergency and emergency medical care.
PC-2.1 Able to identify clinical signs of conditions requiring emergency medical care in case of sudden acute diseases, conditions, exacerbation of chronic diseases without obvious signs of a threat to the patient's life	Knows the clinical signs of conditions requiring emergency medical care for sudden acute diseases, conditions, exacerbation of chronic diseases without obvious signs of a threat to the patient's life
	Able to identify clinical signs of conditions requiring emergency medical care in case of sudden acute diseases, conditions, exacerbation of chronic diseases without obvious signs of a threat to the patient's life
	Possesses the skill of identifying clinical signs of conditions requiring emergency medical care for sudden acute diseases, conditions, exacerbation of chronic diseases without obvious signs of a threat to the patient's life
PC-2.2 Able to carry out measures to provide medical care in an emergency form for sudden acute diseases, conditions, exacerbation of chronic diseases without obvious signs of a threat to the patient's life	Knows measures to provide emergency medical care for sudden acute diseases, conditions, exacerbation of chronic diseases without obvious signs of a threat to the patient's life
	Able to provide emergency medical care for sudden acute diseases, conditions, exacerbation of chronic diseases without obvious signs of a threat to the patient's life
	Possesses the skill to independently provide emergency medical care for sudden acute diseases, conditions, exacerbation of chronic diseases without obvious signs of a threat to the patient's life
PC-2.3 Knows how to use medicines and medical devices in the provision of medical care in emergency or urgent forms for sudden acute diseases, conditions, exacerbation of chronic diseases without	Knows medicines and medical devices in the provision of emergency and emergency medical care for sudden acute diseases, conditions, exacerbation of chronic diseases without obvious signs of a threat to the patient's life
	Able to use medicines and medical devices in the provision of emergency or emergency medical care for sudden acute diseases, conditions, exacerbation of chronic diseases without obvious signs of threat

obvious signs of a threat to the patient's life	Possesses the skill to independently use medicines and medical devices in the provision of emergency or emergency medical care for sudden acute diseases, conditions, exacerbation of chronic diseases without obvious signs of threat
PC-3.1 Able to identify conditions that require emergency medical care, including clinical signs of sudden cessation of blood circulation and breathing	Knows conditions that require emergency medical care, including clinical signs of sudden cessation of blood circulation and respiration.
	Able to identify conditions that require emergency medical care, including clinical signs of sudden cessation of blood circulation and breathing
	Possesses the skill of self-determination of a condition requiring emergency medical care, including a sudden cessation of blood circulation and breathing
PC-3.2 Able to perform basic cardiopulmonary resuscitation measures in combination with electropulse therapy (defibrillation)	Knows the conditions under which it is necessary to perform basic cardiopulmonary resuscitation with defibrillation.
	Able to perform basic cardiopulmonary resuscitation in combination with defibrillation.
	Has the skill of assessing the effectiveness of basic cardiopulmonary resuscitation measures in combination with defibrillation.
PC-3.3 Knows the clinical signs of sudden cessation of circulation and/or respiration	Knows the clinical signs of sudden cessation of blood circulation and respiration.
	Able to determine the sudden cessation of blood circulation and respiration by clinical signs.
	Possesses the skill of self-determination by clinical signs of sudden cessation of blood circulation and / or breathing
PC-4.6 Knows the procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, standards of medical care	Knows the procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, standards of medical care.
	Knows how to use in practice the procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, standards of medical care.
	Possesses the skill of providing medical care in accordance with clinical guidelines (treatment protocols) for the provision of medical care, standards of medical care
PC-6.1 Knows modern methods of using medicines, medical devices and therapeutic nutrition for diseases and conditions in patients in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into	Knows modern methods of using medicines, medical devices and therapeutic nutrition for diseases and conditions in patients in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care
	Is able to draw up a plan for the use of medicines, medical devices and therapeutic nutrition for diseases and conditions in a patient in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care

<p>account the standards of medical care</p>	<p>Possesses the skill of independent use of medicines, medical devices and therapeutic nutrition for diseases and conditions of the patient in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care</p>
<p>PC-6.3 Is able to draw up a treatment plan for the disease and the patient's condition, taking into account the diagnosis, age of the patient, the clinical picture of the disease in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care</p>	<p>Knows the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, standards of medical care</p>
	<p>Is able to draw up a treatment plan for the patient's diseases in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) for the provision of medical care, standards of medical care</p>
	<p>Possesses the skill of drawing up a treatment plan for the disease and the patient's condition, taking into account the diagnosis, the patient's age, the clinical picture of the disease in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care</p>
<p>PC-7.1 Knows the mechanism of action of drugs, medical devices and medical nutrition, medical indications and contraindications for their use; Complications caused by their use</p>	<p>Knows the mechanism of action of drugs, medical devices and medical nutrition, medical indications and contraindications to their use; complications caused by their use</p>
	<p>Able to choose medicines, medical devices and medical nutrition, taking into account medical indications and contraindications, possible complications caused by their use</p>
	<p>Possesses the skill of self-selection of medicines, medical devices and medical nutrition, taking into account medical indications and contraindications, possible complications caused by their use</p>
<p>PC-7.2 Is able to prescribe medicines, medical devices and therapeutic nutrition, taking into account the diagnosis, age and clinical picture of the disease in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care</p>	<p>Knows the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care for prescribing medicines, medical devices and therapeutic nutrition, taking into account the diagnosis, age and clinical picture of the disease.</p>
	<p>Is able to prescribe medicines, medical devices and therapeutic nutrition, taking into account the diagnosis, age and clinical picture of the disease in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care</p>
	<p>Possesses the skill of self-prescription of medicines, medical devices and therapeutic nutrition, taking into account the diagnosis, age and clinical picture of the disease in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment</p>

	protocols) on the provision of medical care, taking into account the standards of medical care
PC-11.4 Knows the signs of biological death, the procedure for fixing the fact of biological death and the procedure for registering biological death	Knows the signs of biological death, the procedure for fixing the fact of biological death and the procedure for registering biological death
	Able to identify signs of biological death and record the fact of biological death.
	Possesses to independently determine the signs of biological death and record the fact of biological death

MONITORING THE ACHIEVEMENT OF COURSE OBJECTIVES

Code and Statement of Competence		Stages of competence formation			
№	Контролируемые разделы/темы дисциплин	Codes and stages of competency formation		Evaluation tools	
				Current control	Intermediate Assessment/ Exam
1	Module 1 Basics of resuscitation	PC-1.1 Has the ability to assess the condition of a patient requiring medical care in emergency or emergency forms	Know	OQ-1 Interview	Credit Questions Semester 7 - 1-132
			Able to	PW-1 Test	PW-1 Test
			Possesses	OQ-3 Report	OQ-2 Colloquium
	Module 1 Basics of resuscitation	PC-1.2 Knows the list of methods of laboratory and instrumental studies to assess the patient's condition, the main medical indications for conducting research and interpreting the results	Know	OQ-1 Interview	Credit Questions Semester 7 - 1-132
			Able to	PW-1 Test	PW-1 Test
			Possesses	OQ-3 Report	OQ-2 Colloquium
	Module 1 Basics of resuscitation Module 2 Fundamentals of Intensive Care	PC-1.3 Knows the etiology, pathogenesis and pathomorphology, clinical picture, differential diagnosis, features of the course, complications and outcomes of diseases of internal organs	Know	OQ-1 Interview	Credit Questions Semester 7 - 1-132
			Able to	PW-1 Test	PW-1 Test
			Possesses	OQ-3 Report	OQ-2 Colloquium
	Module 1 Basics of resuscitation Module 2 Fundamentals of Intensive Care Module 3 General Anesthesiology	PC-1.4 Knows the methodology for collecting complaints and anamnesis from patients (their legal representatives)	Know	OQ-1 Interview	Credit Questions Semester 7 - 1-132
			Able to	PW-1 Test	PW-1 Test
			Possesses	OQ-3 Report	OQ-2 Colloquium
2	Module 2 Fundamentals of	PC-2.1	Know	OQ-1 Interview	Credit Questions

Intensive Care Module 3 General Anesthesiology	Able to identify clinical signs of conditions requiring emergency medical care in case of sudden acute diseases, conditions, exacerbation of chronic diseases without obvious signs of a threat to the patient's life	Able to	OQ-1 Interview	Semester 7 - 1-132 PW-1 Test
		Possesses	PW-1 Test PW-11 Case Study	OQ-2 Colloquium
Module 1 Basics of resuscitation Module 2 Fundamentals of Intensive Care Module 3 General Anesthesiology	PC-2.2 Able to carry out measures to provide medical care in an emergency form for sudden acute diseases, conditions, exacerbation of chronic diseases without obvious signs of a threat to the patient's life	Know	OQ-1 Interview	Credit Questions Semester 7 - 1-132
		Able to	PW-1 Test	PW-1 Test
		Possesses	OQ-3 Report	OQ-2 Colloquium
Module 1 Basics of resuscitation Module 2 Fundamentals of Intensive Care	PC-2.3 Knows how to use medicines and medical devices in the provision of medical care in emergency or urgent forms for sudden acute diseases, conditions, exacerbation of chronic diseases without obvious signs of a threat to the patient's life	Know	OQ-1 Interview	Credit Questions Semester 7 - 1-132
		Able to	PW-1 Test	PW-1 Test
		Possesses	OQ-3 Report	OQ-2 Colloquium
Module 1 Basics of resuscitation	PC-3.1 Is able to identify conditions requiring emergency medical care, including clinical signs of sudden cessation of blood circulation and respiration	Know	OQ-1 Interview	Credit Questions Semester 7 - 1-132
		Able to	PW-1 Test	PW-1 Test
		Possesses	OQ-3 Report	OQ-2 Colloquium
Module 1 Basics of resuscitation Module 2 Fundamentals of Intensive Care	PC-3.2 Able to perform basic cardiopulmonary resuscitation measures in combination with electropulse therapy (defibrillation)	Know	OQ-1 Interview	Credit Questions Semester 7 - 1-132
		Able to	PW-1 Test	PW-1 Test
		Possesses	OQ-3 Report	OQ-2 Colloquium
Module 1 Basics of resuscitation Module 2 Fundamentals of Intensive Care Module 3 General Anesthesiology	PC-3.3 Knows clinical signs of sudden cessation of circulation and/or respiration	Know	OQ-1 Interview	Credit Questions Semester 7 - 1-132
		Able to	OQ-1 Interview	PW-1 Test
		Possesses	PW-1 Test PW-11 Case Study	OQ-2 Colloquium
Module 1 Basics of resuscitation Module 2 Fundamentals of Intensive Care Module 3 General Anesthesiology	PC-4.6 Knows the procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, standards of medical care	Know	OQ-1 Interview	Credit Questions Semester 7 - 1-132
		Able to	PW-1 Test	PW-1 Test
		Possesses	OQ-3 Report	OQ-2 Colloquium

Module 1 Basics of resuscitation Module 2 Fundamentals of Intensive Care Module 3 General Anesthesiology	PC-6.1 Knows modern methods of using medicines, medical devices and therapeutic nutrition for diseases and conditions in a patient in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care	Know	OQ-1 Interview	Credit Questions Semester 7 - 1-132
		Able to	PW-1 Test	PW-1 Test
		Possesses	OQ-3 Report	OQ-2 Colloquium
Module 1 Basics of resuscitation Module 2 Fundamentals of Intensive Care	PC-6.3 Is able to draw up a treatment plan for the disease and the patient's condition, taking into account the diagnosis, the patient's age, the clinical picture of the disease in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care	Know	OQ-1 Interview	Credit Questions Semester 7 - 1-132
		Able to	OQ-1 Interview	PW-1 Test
		Possesses	PW-1 Test PW-11 Case Study	OQ-2 Colloquium
Module 1 Basics of resuscitation Module 2 Fundamentals of Intensive Care	PC-7.1 Knows the mechanism of action of drugs, medical devices and therapeutic nutrition, medical indications and contraindications for their use; Complications caused by their use	Know	OQ-1 Interview	Credit Questions Semester 7 - 1-132
		Able to	PW-1 Test	PW-1 Test
		Possesses	OQ-3 Report	OQ-2 Colloquium
Module 1 Basics of resuscitation Module 2 Fundamentals of Intensive Care Module 3 General Anesthesiology	PC-7.2 Able to prescribe medicines, medical devices and therapeutic nutrition, taking into account the diagnosis, age and clinical picture of the disease in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care	Know	OQ-1 Interview	Credit Questions Semester 7 - 1-132
		Able to	PW-1 Test	PW-1 Test
		Possesses	OQ-3 Report	OQ-2 Colloquium
Module 1 Basics of resuscitation Module 2 Fundamentals of Intensive Care Module 3 General Anesthesiology	PC-11.4 Knows the signs of biological death, the procedure for fixing the fact of biological death and the procedure for registering biological death	Know	OQ-1 Interview	Credit Questions Semester 7 - 1-132
		Able to	OQ-1 Interview	PIP-1 Test
		Possesses	PW-1 Test PW-11 Case Study	OQ-2 Colloquium

Scale for assessing the level of competence formation

Code and Statement of Competence	Stages of competence formation		Criteria	Indicators	Points
PC-1.1 Has the ability to assess the condition of a patient requiring medical care in emergency or emergency forms	knows (threshold level)	Knows the clinical signs that characterize the condition of a patient requiring emergency or emergency medical care	Knowledge of clinical signs characterizing the patient's condition, requiring emergency or emergency medical care	Formed and structured knowledge of clinical signs characterizing the patient's condition, requiring emergency or emergency medical care	65-71
	Able (advanced)	Able to assess the clinical signs characterizing the condition of a patient requiring emergency or emergency medical care	Ability to assess clinical signs characterizing the condition of a patient requiring emergency or emergency medical care	Able to confidently assess the clinical signs characterizing the condition of a patient requiring emergency or emergency medical care	71-84
	Possesses (high)	Possesses the skill of determining the condition of a patient requiring emergency or emergency medical care	The skill of determining the condition of a patient requiring emergency or emergency medical care	Able to independently determine the patient's condition requiring emergency or emergency medical care	85-100
PC-1.2 Knows the list of methods of laboratory and instrumental studies to assess the patient's condition, the main medical indications for conducting research and interpreting the results	knows (threshold level)	Knows the methods of laboratory and instrumental studies to assess the patient's condition in the provision of emergency and emergency medical care.	Knowledge of laboratory and instrumental research methods to assess the patient's condition in the provision of emergency and emergency medical care.	Formed and structured knowledge of laboratory and instrumental research methods to assess the patient's condition in the provision of emergency and emergency medical care.	65-71
	Able (advanced)	Knows how to determine the indications for the appointment of laboratory and instrumental studies to assess the patient's condition in the provision of emergency and emergency medical care.	The ability to determine the indications for the appointment of laboratory and instrumental studies to assess the patient's condition in the provision of emergency and emergency medical care.	Knows how to confidently determine the indications for the appointment of laboratory and instrumental studies to assess the patient's condition in the provision of emergency and emergency medical care.	71-84
	Possesses (high)	Possesses the skill of interpreting the results of laboratory and instrumental studies to assess the patient's condition in the	The skill of interpreting the results of laboratory and instrumental studies to assess the patient's condition in the	Able to independently interpret the results of laboratory and instrumental studies to assess the patient's condition in the provision of	85-100

		provision of emergency and emergency medical care.	provision of emergency and emergency medical care.	emergency and emergency medical care.	
PC-1.3 Knows the etiology, pathogenesis and pathomorphology, clinical picture, differential diagnosis, features of the course, complications and outcomes of diseases of internal organs	knows (threshold level)	Knows the methodology of interviewing patients (their legal representatives) in the provision of emergency and emergency medical care.	Knowledge of the methodology for interviewing patients (their legal representatives) in the provision of emergency and emergency medical care.	Formed and structured knowledge of the methodology for interviewing patients (their legal representatives) in the provision of emergency and emergency medical care.	65-71
	Able (advanced)	Knows how to conduct a survey of patients (their legal representatives) in the provision of emergency and emergency medical care.	Ability to interview patients (their legal representatives) in the provision of emergency and emergency medical care.	Knows how to confidently conduct a survey of patients (their legal representatives) in the provision of emergency and emergency medical care.	71-84
	Possesses (high)	Owens the methodology for collecting complaints and anamnesis from patients and / or their legal representatives in the provision of emergency and emergency medical care.	The skill of collecting complaints and anamnesis from patients and / or their legal representatives in the provision of emergency and emergency medical care.	Able to independently collect complaints and anamnesis from patients and / or their legal representatives in the provision of emergency and emergency medical care.	85-100
PC-1.4 Knows the methodology for collecting complaints and anamnesis from patients (their legal representatives)	knows (threshold level)	Knows the etiology, pathogenesis and pathomorphology, clinical picture, features of the course, complications and outcomes of diseases of internal organs in the provision of emergency and emergency medical care.	Knowledge of the etiology, pathogenesis and pathomorphology, clinical picture, features of the course, complications and outcomes of diseases of internal organs in the provision of emergency and emergency medical care.	Formed and structured knowledge of the etiology, pathogenesis and pathomorphology, clinical picture, features of the course, complications and outcomes of diseases of internal organs in the provision of emergency and emergency medical care.	65-71
	Able (advanced)	Knows how to formulate a clinical diagnosis, identify a number of diseases for differential diagnosis in the provision of emergency and	The ability to formulate a clinical diagnosis, identify a number of diseases for differential diagnosis in the provision of emergency and	Is able to confidently formulate a clinical diagnosis, identify a number of diseases for differential diagnosis in the provision of emergency and emergency medical care.	71-84

		emergency medical care.	emergency medical care.		
	Possesses (high)	Possesses the skill of making a clinical diagnosis, conducting a differential diagnosis. in the provision of emergency and emergency medical care.	The skill of making a clinical diagnosis, conducting a differential diagnosis. in the provision of emergency and emergency medical care.	Able to independently make a clinical diagnosis, conduct a differential diagnosis. in the provision of emergency and emergency medical care.	85-100
PC-2.1 Able to identify clinical signs of conditions requiring emergency medical care in case of sudden acute diseases, conditions, exacerbation of chronic diseases without obvious signs of a threat to the patient's life	knows (threshold level)	Knows the clinical signs of conditions requiring emergency medical care for sudden acute diseases, conditions, exacerbation of chronic diseases without obvious signs of a threat to the patient's life	Knowledge of the clinical signs of conditions requiring emergency medical care for sudden acute diseases, conditions, exacerbation of chronic diseases without obvious signs of a threat to the patient's life	Formed and structured knowledge of the clinical signs of conditions requiring emergency medical care for sudden acute diseases, conditions, exacerbation of chronic diseases without obvious signs of a threat to the patient's life	65-71
	Able (advanced)	Able to identify clinical signs of conditions requiring emergency medical care in case of sudden acute diseases, conditions, exacerbation of chronic diseases without obvious signs of a threat to the patient's life	The ability to identify clinical signs of conditions requiring emergency medical care for sudden acute diseases, conditions, exacerbation of chronic diseases without obvious signs of a threat to the patient's life	Able to confidently identify clinical signs of conditions requiring emergency medical care for sudden acute diseases, conditions, exacerbation of chronic diseases without obvious signs of a threat to the patient's life	71-84
	Possesses (high)	Possesses the skill of identifying clinical signs of conditions requiring emergency medical care for sudden acute diseases, conditions, exacerbation of chronic diseases without obvious signs of a threat to the patient's life	The skill of identifying clinical signs of conditions requiring emergency medical care for sudden acute diseases, conditions, exacerbation of chronic diseases without obvious signs of a threat to the patient's life	Able to independently identify clinical signs of conditions requiring emergency medical care in case of sudden acute diseases, conditions, exacerbation of chronic diseases without obvious signs of a threat to the patient's life	85-100
PC-2.2 Able to carry out measures to provide medical care in an emergency form for sudden acute diseases, conditions, exacerbation of chronic diseases without obvious	knows (threshold level)	Knows measures to provide emergency medical care for sudden acute diseases, conditions, exacerbation of chronic diseases without obvious signs of a threat to the patient's life	Taking measures to provide emergency medical care for sudden acute diseases, conditions, exacerbation of chronic diseases without obvious signs of a threat to the patient's life	Formed and structured knowledge of measures to provide emergency medical care for sudden acute diseases, conditions, exacerbation of chronic diseases without obvious signs of a threat to the patient's life	

signs of a threat to the patient's life	Able (advanced)	Able to provide emergency medical care for sudden acute diseases, conditions, exacerbation of chronic diseases without obvious signs of a threat to the patient's life	Ability to provide emergency medical care for sudden acute diseases, conditions, exacerbation of chronic diseases without obvious signs of a threat to the patient's life	Able to confidently provide emergency medical care for sudden acute diseases, conditions, exacerbation of chronic diseases without obvious signs of a threat to the patient's life	
	Possesses (high)	Possesses the skill to independently provide emergency medical care for sudden acute diseases, conditions, exacerbation of chronic diseases without obvious signs of a threat to the patient's life	The ability to independently provide emergency medical care for sudden acute diseases, conditions, exacerbation of chronic diseases without obvious signs of a threat to the patient's life	Able to independently provide emergency medical care for sudden acute diseases, conditions, exacerbation of chronic diseases without obvious signs of a threat to the patient's life	
PC-2.3 Knows how to use medicines and medical devices in the provision of emergency or urgent forms for sudden acute diseases, conditions, exacerbation of chronic diseases without obvious signs of a threat to the patient's life	knows (threshold level)	Knows medicines and medical devices in the provision of emergency and emergency medical care for sudden acute diseases, conditions, exacerbation of chronic diseases without obvious signs of a threat to the patient's life	Knowledge of medicines and medical devices in the provision of emergency and emergency medical care for sudden acute diseases, conditions, exacerbation of chronic diseases without obvious signs of a threat to the patient's life	Formed and structured knowledge of medicines and medical devices in the provision of emergency and emergency medical care for sudden acute diseases, conditions, exacerbation of chronic diseases without obvious signs of a threat to the patient's life	
	Able (advanced)	Knows how to use medicines and medical devices in the provision of emergency or emergency medical care for sudden acute diseases, conditions, exacerbation of chronic diseases without obvious signs of threat	Ability to use medicines and medical devices in the provision of emergency or emergency medical care for sudden acute diseases, conditions, exacerbation of chronic diseases without obvious signs of threat	Knows how to confidently use medicines and medical devices in the provision of emergency or emergency medical care for sudden acute diseases, conditions, exacerbation of chronic diseases without obvious signs of threat	
	Possesses (high)	Possesses the skill to independently use medicines and medical devices in the provision of emergency or emergency medical care for sudden acute diseases, conditions, exacerbation of chronic diseases without obvious signs of threat	The ability to independently use medicines and medical devices in the provision of emergency or emergency medical care for sudden acute diseases, conditions, exacerbation of chronic diseases without obvious signs of threat	Able to independently use medicines and medical devices in the provision of emergency or emergency medical care for sudden acute diseases, conditions, exacerbation of chronic diseases without obvious signs of threat	

PC-3.1 Is able to identify conditions requiring emergency medical care, including clinical signs of sudden cessation of blood circulation and respiration	knows (threshold level)	Knows conditions that require emergency medical care, including clinical signs of sudden cessation of blood circulation and respiration.	Knowledge of conditions requiring emergency medical care, including clinical signs of sudden cessation of circulation and respiration.	Formed and structured knowledge of conditions requiring emergency medical care, including clinical signs of sudden cessation of blood circulation and respiration.	
	Able (advanced)	Able to identify conditions that require emergency medical care, including clinical signs of sudden cessation of blood circulation and breathing	Ability to identify conditions that require emergency medical care, including clinical signs of sudden cessation of blood circulation and breathing	Able to confidently identify conditions that require emergency medical care, including clinical signs of sudden cessation of blood circulation and breathing	
	Possesses (high)	Possesses the skill of self-determination of a condition requiring emergency medical care, including a sudden cessation of blood circulation and breathing	The skill of self-determination of a condition requiring emergency medical care, including sudden cessation of blood circulation and breathing	Able to independently determine the condition requiring emergency medical care, including sudden cessation of blood circulation and breathing	
PC-3.2 Able to perform basic cardiopulmonary resuscitation measures in combination with electropulse therapy (defibrillation)	knows (threshold level)	Knows from the conditions under which it is necessary to perform basic cardiopulmonary resuscitation with defibrillation.	Knowledge of the conditions under which it is necessary to perform basic cardiopulmonary resuscitation with defibrillation.	Formed and structured knowledge of the conditions under which it is necessary to perform basic cardiopulmonary resuscitation with defibrillation.	
	Able (advanced)	Able to perform basic cardiopulmonary resuscitation in combination with defibrillation.	Ability to perform basic cardiopulmonary resuscitation measures in combination with defibrillation.	Able to confidently perform basic cardiopulmonary resuscitation measures in combination with defibrillation.	
	Possesses (high)	Able to confidently perform basic cardiopulmonary resuscitation measures in combination with defibrillation.	The skill of evaluating the effectiveness of basic cardiopulmonary resuscitation measures in combination with defibrillation.	Able to independently assess the effectiveness of basic cardiopulmonary resuscitation in combination with defibrillation.	
PC-3.3 Knows clinical signs of sudden cessation of circulation and/or respiration	knows (threshold level)	Knows the clinical signs of sudden cessation of blood circulation and respiration.	Knowledge of the clinical signs of sudden cessation of blood circulation and respiration.	Formed and structured knowledge of the clinical signs of sudden cessation of blood circulation and respiration.	
	Able (advanced)	Able to determine the sudden cessation of blood circulation	The ability to determine the sudden cessation of	Able to confidently determine the sudden cessation of blood	

		and respiration by clinical signs.	blood circulation and breathing by clinical signs.	circulation and breathing by clinical signs.	
	Possesses (high)	Possesses the skill of self-determination by clinical signs of sudden cessation of blood circulation and / or breathing	The skill of self-determination by clinical signs of sudden cessation of blood circulation and / or breathing	Able to independently determine by clinical signs a sudden cessation of blood circulation and / or breathing	
PC-4.6 Knows the procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, standards of medical care	knows (threshold level)	Knows the procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, standards of medical care.	Knowledge of the procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, standards of medical care.	Formed and structured knowledge of the procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, standards of medical care.	
	Able (advanced)	Knows how to use in practice the procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, standards of medical care.	Ability to use in practice the procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, standards of medical care.	Knows how to confidently use in practice the procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, standards of medical care.	
	Possesses (high)	Possesses the skill of providing medical care in accordance with clinical guidelines (treatment protocols) for the provision of medical care, standards of medical care	Skill in providing medical care in accordance with clinical guidelines (treatment protocols) for the provision of medical care, standards of medical care	Able to independently provide medical care in accordance with clinical guidelines (treatment protocols) on the provision of medical care, standards of medical care	
PC-6.1 Knows modern methods of using medicines, medical devices and therapeutic nutrition for diseases and conditions in a patient in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the	knows (threshold level)	Knows modern methods of using medicines, medical devices and therapeutic nutrition for diseases and conditions in patients in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the	Knowledge of modern methods of using medicines, medical devices and therapeutic nutrition for diseases and conditions in a patient in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the	Formed and structured knowledge of modern methods of using medicines, medical devices and therapeutic nutrition for diseases and conditions in the patient in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the	

provision of medical care, taking into account the standards of medical care		standards of medical care	provision of medical care, taking into account the standards of medical care	standards of medical care	
	Able (advanced)	Is able to draw up a plan for the use of medicines, medical devices and therapeutic nutrition for diseases and conditions in a patient in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care	Ability to draw up a plan for the use of medicines, medical devices and therapeutic nutrition for diseases and conditions in a patient in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care	Is able to confidently draw up a plan for the use of medicines, medical devices and therapeutic nutrition for diseases and conditions in a patient in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care	
	Possesses (high)	Possesses the skill of independent use of medicines, medical devices and therapeutic nutrition for diseases and conditions in the patient in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care	The skill of independent use of medicines, medical devices and therapeutic nutrition for diseases and conditions in the patient in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care	Able to independently apply medicines, medical devices and therapeutic nutrition for diseases and conditions in the patient in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care	
PC-6.3 Is able to draw up a treatment plan for the disease and the patient's condition, taking into account the diagnosis, the patient's age, the clinical picture of the disease in accordance with	knows (threshold level)	Knows the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, standards of medical care	Knowledge of the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, standards of medical care	Formed and structured knowledge of the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, standards of medical care	

the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care	Able (advanced)	Is able to draw up a treatment plan for the patient's diseases in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) for the provision of medical care, standards of medical care	Ability to draw up a treatment plan for the patient's diseases in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, standards of medical care	Is able to confidently draw up a treatment plan for the patient's diseases in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) for the provision of medical care, standards of medical care	
	Possesses (high)	Possesses the skill of drawing up a treatment plan for the disease and the patient's condition, taking into account the diagnosis, the patient's age, the clinical picture of the disease in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care	The skill of drawing up a treatment plan for the disease and the patient's condition, taking into account the diagnosis, the patient's age, the clinical picture of the disease in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care	Able to independently draw up a treatment plan for the disease and the patient's condition, taking into account the diagnosis, age of the patient, the clinical picture of the disease in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care	
PC-7.1 Knows the mechanism of action of drugs, medical devices and therapeutic nutrition, medical indications and contraindications for their use; Complications caused by their use	knows (threshold level)	Knows the mechanism of action of drugs, medical devices and medical nutrition, medical indications and contraindications to their use; complications caused by their use	Knowledge of the mechanism of action of drugs, medical devices and therapeutic nutrition, medical indications and contraindications to their use; complications caused by their use	Formed and structured knowledge of the mechanism of action of drugs, medical devices and therapeutic nutrition, medical indications and contraindications to their use; complications caused by their use	
	Able (advanced)	Knows how to choose medicines, medical devices and medical nutrition, taking into account medical indications and contraindications, possible complications caused by their use	The ability to choose medicines, medical devices and medical nutrition, taking into account medical indications and contraindications, possible	Knows how to confidently choose medicines, medical devices and medical nutrition, taking into account medical indications and contraindications, possible complications caused by their use	

			complications caused by their use		
	Possesses (high)	Possesses the skill of self-selection of medicines, medical devices and medical nutrition, taking into account medical indications and contraindications, possible complications caused by their use	The skill of self-selection of medicines, medical devices and medical nutrition, taking into account medical indications and contraindications, possible complications caused by their use	Able to independently choose medicines, medical devices and medical nutrition, taking into account medical indications and contraindications, possible complications caused by their use	
PC-7.2 Able to prescribe medicines, medical devices and therapeutic nutrition, taking into account the diagnosis, age and clinical picture of the disease in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care	knows (threshold level)	Knows the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care for prescribing medicines, medical devices and therapeutic nutrition, taking into account the diagnosis, age and clinical picture of the disease.	Knowledge of the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care for prescribing medicines, medical devices and therapeutic nutrition, taking into account the diagnosis, age and clinical picture of the disease.	Formed and structured knowledge of the procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care for prescribing medicines, medical devices and therapeutic nutrition, taking into account the diagnosis, age and clinical picture of the disease.	
	Able (advanced)	Is able to prescribe medicines, medical devices and therapeutic nutrition, taking into account the diagnosis, age and clinical picture of the disease in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care	Ability to prescribe medicines, medical devices and therapeutic nutrition, taking into account the diagnosis, age and clinical picture of the disease in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care	Is able to confidently prescribe medicines, medical devices and therapeutic nutrition, taking into account the diagnosis, age and clinical picture of the disease in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care	
	Possesses (high)	Possesses the skill of self-prescription of medicines, medical devices and therapeutic nutrition, taking into account the	The skill of self-prescription of medicines, medical devices and therapeutic nutrition, taking into account the	Able to independently prescribe medicines, medical devices and medical nutrition, taking into account the diagnosis, age and	

		diagnosis, age and clinical picture of the disease in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care	diagnosis, age and clinical picture of the disease in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care	clinical picture of the disease in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care	
PC-11.4 Knows the signs of biological death, the procedure for fixing the fact of biological death and the procedure for registering biological death	knows (threshold level)	Knows the signs of biological death, the procedure for fixing the fact of biological death and the procedure for registering biological death	Knowledge of the signs of biological death, the procedure for fixing the fact of biological death and the procedure for registering biological death	Formed and structured knowledge of the signs of biological death, the procedure for fixing the fact of biological death and the procedure for registering biological death	
	Able (advanced)	Able to identify signs of biological death and record the fact of biological death.	The ability to identify signs of biological death and record the fact of biological death.	Able to confidently identify signs of biological death and record the fact of biological death.	
	Possesses (high)	Able to independently determine the signs of biological death and record the fact of biological death	The ability to independently determine the signs of biological death and record the fact of biological death	Able to independently determine the signs of biological death and record the fact of biological death	

Questions to assess the preliminary competencies

1. Water-electrolyte exchange. Acid-base state.
2. Syndrome of endogenous intoxication.
3. Resuscitation and intensive care in sudden circulatory arrest. CPR.
4. Sepsis.
5. Acute renal failure.
6. Burn shock.
7. Acute respiratory failure.
8. DIC syndrome.
9. History of the development of anesthesiology.
10. Surgical stress.

11. inhalation anesthesia.
12. intraoperative monitoring.
13. epidural anesthesia.
14. Local and conduction anesthesia 15.
15. Anesthetics and analgesics 16.
16. Shock. Types of shock.
17. Microcirculation. Microcirculatory bed.

Control tests are designed for students studying the course "Anesthesiology, resuscitation, intensive care". Tests are needed to control knowledge in the process of current interim certification, as well as to assess knowledge, the result of which may be setting credit.

When working with tests the student is asked to choose one answer out of the three to four proposed. At the same time, the tests vary in their complexity. Among the proposed tests there are tests that contain several variants of correct answers. The student must indicate all correct answers.

The tests are designed for both individual and collective solutions. They can be used in the process of both classroom and independent work. The selection of tests necessary to control knowledge in the process of interim certification is made by each teacher individually.

The results of the test assignments are evaluated by the instructor on a five-point scale for grading or on a pass-fail system. A grade of "excellent" is given for a correct answer to more than 90% of the tests offered by the instructor. A grade of "good" is given when more than 70% of the tests are answered correctly. A grade of "satisfactory" is given when the student correctly answers 50% of the tests offered by the instructor.

Typical test tasks

1. PULSE OXIMETRY IS INACCURATE IN THE PRESENCE OF:
 - a. Methemoglobin and carboxyhemoglobin +
 - b. Skin pigmentation
 - c. Sickle cell disease

- d. In FOS poisoning.
- 2. NORADRENALIN:
 - a. Reduces diastolic blood pressure
 - b. Causes reflex tachycardia
 - c. Reduces mean arterial pressure
 - d. Is an alpha-1 adrenoreceptor agonist+
- 3. NON-SPECIFIC PERCEPTION OF PAIN OCCURS IN:
 - a. hypothalamus
 - b. spinal cord
 - c. thalamus+
 - d. cerebral cortex
- 4. NOCICEPTIVE INFORMATION REACHES THE CENTRAL NERVOUS SYSTEM THROUGH:
 - a. anterior horns of the spinal cord
 - b. nociceptive foramen
 - c. posterior horns of the spinal cord +
 - d. lateral canals of the spinal cord
- 5. FOR NON-INSTRUMENTAL PROVISION OF AIRWAY PATENCY USE:
 - a. tracheal intubation
 - b. naso- and oropharyngeal airways +
 - c. head flexion and mouth opening
 - d. triple Safar technique or tilting the head and opening the mouth
- 6. A CONICOTOMY IS PERFORMED:
 - a. Between the first semicircle of the trachea and the stapes cartilage
 - b. between ossicular and thyroid cartilages +
 - c. between first and second semicircle of trachea
 - d. below hyoid bone

7. IN CASE OF REGISTRATION OF CIRCULATORY ARREST IN A PATIENT IN A SURGICAL DEPARTMENT, RESUSCITATION MEASURES SHOULD BE PERFORMED:

- a. in the intensive care unit
- b. on-site +
- c. in the intensive care unit
- d. in the dressing room

8. WHEN PERFORMING CHEST COMPRESSIONS, PALMS SHOULD BE PLACED:

- a. in the center of the chest +
- b. on the upper third of the chest
- c. on the xiphoid process
- d. on border between middle and lower third of chest

9. RESUSCITATION IS PERFORMED:

- a. only in case of clinical death of a victim of working age
- b. in each case of clinical death +.
- c. only in case of clinical death of children
- d. only in case of clinical death of a victim under 65 years of age

10. THE SUPINE POSITION AT A 45-DEGREE ANGLE WITH THE PELVIS ELEVATED IN RELATION TO THE HEAD IS CALLED THE POSITION:

- a. Trendelenburg +
- b. orthostatic
- c. lithotomic
- d. Fowler

11. HEIMLICH'S TECHNIQUE IS USED FOR:

- a. drowning
- b. aspiration of a foreign body +
- c. strangulation
- d. asystole

12. IN BILATERAL RECURRENT NERVE CROSSING, THERE IS:

- a. opening of the posterior vocal slit
- b. incomplete closure of the vocal slit +
- c. complete relaxation of muscles and opening of vocal slit
- d. position of vocal cords remains unchanged

13. HEMOSTATIC AGENT IS:

- a. heparin
- b. warfarin
- c. clopidogrel
- d. tranexamic acid +

14. INHALATION ANESTHETICS INCLUDE:

- a. diprivan
- b. ketamine
- c. isoflurane +
- d. sodium thiopental

15. NARCOTIC ANALGESICS INCLUDE:

- a. promedol +
- b. drotaverine
- c. droperidol
- d. diazepam

16. THE CAROTID SINUS IS LOCATED IN:

- a. floor of the 4th ventricle
- b. aorta
- c. superior vena cava
- d. carotid bifurcation site +

17. THE RESPIRATORY CENTER IS LOCATED:

- a. at the bottom of the 4th ventricle +
- b. in the GM cortex
- c. in the carotid sinus
- d. in the dura mater

18. THE INTENSIFICATION OF INHALATION IS ACCOMPLISHED BY:

- a. by the inner intercostal muscles
- b. external intercostal muscles +
- c. deltoid muscles
- d. large pectoral muscles

19. THE INNER SURFACE OF THE ALVEOLI IS COVERED:

- a. bronchial secretion
- b. alveolar fluid
- c. lysozyme
- d. surfactant +

20. ALGOVERA SHOCK INDEX IS:

- a. ratio of systolic BP to diastolic BP
- b. ratio of diastolic BP to systolic BP
- c. the ratio of pulse rate to systolic BP +
- d. the ratio of pulse rate to diastolic BP

21. SHOCK REPRESENTS

- a. a sudden drop in BP
- b. cardiac arrest
- c. short-term cerebral ischemia
- d. acute disruption of tissue perfusion +

22. LEFT VENTRICULAR FAILURE MAY BE CAUSED BY:

- a. insufficient blood flow to the heart
- b. low vascular tone
- c. decreased myocardial contractility +
- d. decreased circulating blood volume

23. ADULT FEMUR FRACTURE USUALLY CORRESPONDS TO A BLOOD LOSS OF _____ ML

- a. 300-400
- b. 600-800 +
- c. 1000-1500
- d. 2000-2500

24. ANTIBODIES INVOLVED IN THE MECHANISM OF HUMAN TYPE I ALLERGY BELONG TO THE CLASS OF IMMUNOGLOBULINS:

- a. IgA
- b. IgE +
- c. IgG
- d. IgM

25. SUCCESSFUL CORRECTION OF COAGULOPATHY REQUIRES:

- a. transfuse fresh frozen plasma +
- b. eliminate the source of bleeding
- c. warm the patient and correct the anemia
- d. transfuse platelet concentrate

26. FIBRINOLYSIS ANTAGONISTS INCLUDE:

- a. streptokinase
- b. tissue plasminogen activator
- c. heparin
- d. epsilon-aminocapric acid +

27. Blood capillary pH equal to 7.2 is indicative of:

- a. compensated alkalosis
- b. decompensated alkalosis
- c. compensated acidosis
- d. decompensated acidosis +.

28. CONCENTRATION OF POTASSIUM IONS INSIDE CELL:

- a. higher than outside +.
- b. lower than outside
- c. it depends on amount of sodium
- d. equal on both sides of the membrane

29. CONCENTRATION OF SODIUM IONS INSIDE THE CELL:

- a. higher than outside the cell
- b. dependent upon the amount of potassium
- c. similar on both sides of membrane

d. lower than outside +

30. DEVELOPMENT OF SUPRAHEPATIC JAUNDICE IS A CONSEQUENCE OF:

a. biliary tract obstruction by biliary stones or tumor

b. disorders of indirect bilirubin uptake by hepatocytes

c. inflammatory process in liver

d. increased formation of bilirubin from hemolyzed red blood cells +

Test Questions for Anesthesiology, Reanimation, Intensive Care - Semester 11

1. Types of shock (classification)

2. Hypovolemic shock (causes, diagnostic signs, intensive care)

3. Cardiogenic shock (causes, diagnostic signs, intensive treatment)

4. Septic shock (causes, diagnostic signs, intensive treatment)

5. What do all types of shock have in common?

6. What are critical conditions?

7. Definition of the concept - "resuscitation"

8. Definition of the concept - "intensive care"

9. Types of acute respiratory failure

10. Diagnosis of acute respiratory failure

11. Indications for artificial lung ventilation

12. Blood gas composition

13. Types of hypoxia

14. Baseline cardiopulmonary resuscitation (pre-hospital phase)-algorithm

15. Advanced cardiopulmonary resuscitation (hospital phase)-algorithm
16. Causes of circulatory arrest
17. Types of circulatory arrest
18. Diagnostic signs of circulatory arrest
19. Stages of Safar cardiopulmonary resuscitation
20. Safar's triple technique
21. Mechanism of closed heart massage
22. Medications used to restore cardiac activity
23. Mechanism of action of atropine
24. Mechanism of action of adrenaline
25. The routes of administration of medications
26. Types of artificial lung ventilation in resuscitation measures
27. Intensive care for drowning
28. Intensive care for electric shock
29. Intensive care for acute exogenous poisoning
30. Indications for electric defibrillation of the heart
31. Indications for open heart massage
32. Features of transportation of patients to the hospital after successful cardiopulmonary resuscitation
33. Post resuscitation illness
34. Types of acute renal failure
35. The main types of extracorporeal methods of detoxification of the body

36. Types of general anesthesia
37. Types of conductive methods of anesthesia
38. Indications for endotracheal anesthesia
39. Methods for determining cardiac output
40. Types of dyshydrria

Criteria for evaluating oral response, colloquia, test

"5 points" is awarded to the student if he/she gives correct answers to the questions under discussion, which are distinguished by the depth and completeness of the disclosure of the topic, is able to draw conclusions and generalizations give reasoned answers that are logical and consistent.

"4 points" is awarded to the student if he/she gives correct answers to the questions under discussion, which are distinguished by depth and completeness of disclosure of the topic, is able to draw conclusions and generalizations, but allows one or two mistakes in the answers.

"3 points" is given to a student if he/she gives answers to the questions under discussion, which are not fully disclosed, there is no logical construction of the answer, makes several mistakes.

"2 points" is given to the student if he/she gives answers to the questions under discussion, which show that he/she does not know the material of the topic, cannot give reasoned answers, makes serious mistakes in the content of the answer.

Assessment tools for current certification

Control tests are designed for students studying the course "Anesthesiology, Resuscitation, Intensive Care".

Tests are needed to control knowledge in the process of current interim certification, and to assess knowledge, the result of which may be setting credit.

When working with tests the student is asked to choose one answer out of the three to four proposed. At the same time, the tests vary in their complexity. Among the

proposed tests, there are tests that contain several variants of correct answers. The student must indicate all correct answers.

The tests are designed for both individual and collective solutions. They can be used in the process of both classroom and independent work. The selection of tests required to control knowledge in the process of interim certification is made by each teacher individually.

The results of test assignments are evaluated by the teacher on a five-point scale for certification or on a system of "pass" - "fail". A grade of "excellent" is awarded if the answer to more than 90% of the tests offered by the teacher is correct. A grade of "good" is given when more than 70% of the tests are answered correctly. A grade of "satisfactory" is given when the student correctly responds to 50% of the tests offered by the instructor.