

Catalog of elective subjects

1. Department of Emergency medicine and nursing
2. Level of learning: residency
3. Educational program: 7R01117 Anesthesiology and resuscitation adult, children
4. Course: 1, 2
5. Name of the elective discipline: Innovative technologies in anesthesiology and resuscitation
6. Number of credits: 2
7. Objective: to study the principles of using innovative technologies in anesthesiology and resuscitation in practice
8. Content of the discipline: ensuring patient safety in the operating room (SpO₂, PetCO₂, etc.), basic principles. General anesthesia with low-flow method, technique, advantages, disadvantages. Modern ventilation modes. Types. Indications. Hypothermia, types, methods, indications. Non-invasive methods of blood circulation control (BP, MVH, SI, TPVR, echocardiography, rheography). Invasive methods of blood circulation monitoring (BP, CVP, MVH, SI, TPVR, PiCCO-monitors). Methods for assessing metabolic status.
9. Tasks:
 - strengthen the skills of qualified anesthesiological, resuscitation help and intensive care using innovative technologies.
 - teach to apply the principles of management in the organization of the work;
 - consolidate the need for continuous professional training and improvement of the knowledge and skills based on innovative technologies.
10. The rationale for choosing a discipline: the acquisition by students of new theoretical knowledge and the improvement of professional skills that are necessary to provide qualified anesthetic and resuscitation care to the patient with the introduction of innovative technology
11. Learning outcomes: RL1, RL3, RL5, RL6.
12. Prerequisites: Fundamentals of anesthesiology-resuscitation and intensive care.
13. Post-requisites: continuous education courses. Scientific information.
14. References:
 - J. R. R. Tolkien Edward Morgan Jr., Magid S. Michael, Michael J. Murray M79 Klinicheskaya anesteziologiya [Clinical anesthesia] / Ed. 4-e, ispr, - Translated from English-Moscow: BINOM Publishing House, 2020. - 1216 p., ill.
 - Malashenko N. S. Ultrasound visualization of invasive manipulations in anesthesiology. diss.k.m.n. St. Petersburg, 2012. p. 15
 - Atlas of Anaesthesiology / Norbert Revere, Holger Til ; translated from German. - 4th ed. - Moscow :MEDpress-inform, 2022, 416 p. (in Russian).
 - Ultrasound in the intensive care unit. Killu K., Dalczewski S., Koba V.; Translated from English; Edited by R. E. Lakhina-GEOTAR-Media, 2021-p. 280
 - B. A. Pollard. Anesthesiological manipulations under ultrasound control. Translated from English by P. A. Volkov Edited by V. A. Guryanov. GEOTAR-Media. 2021. p. 96.

1. Department of emergency medicine and nursing
2. Level of learning: residency
3. Educational program: 7R01117 Anesthesiology and resuscitation adult, children
4. Course: 3
5. Name of the elective discipline: Features of resuscitation and intensive care in disaster medicine
6. Number of credits: 4
7. Purpose: to train residents the ability to provide resuscitation and intensive care in case of damaging effects of toxic and highly toxic substances in emergency situations.
8. Content of the discipline: the choosing of anesthesia method in conditions of mass admission of victims. Features of preoperative preparation. Maintaining homeostasis during anesthesia. Principles of correction of infusion and transfusion therapy, oxygen regime. Intensive care in the postoperative period. Intensive care for burn shock and severe cold trauma. Resuscitation care for electrotrauma. Restoration of heart activity and respiration in case of electric shock.
9. Tasks:
 - to study the features of the damaging effects on the body of high and low temperatures, electric current
 - to consolidate and develop the skills of providing resuscitation assistance in emergency situations
 - learn how to practically apply the basics of intensive care in disaster medicine
 - reinforce the need for continuous professional training and improvement of the knowledge and skills in resuscitation and intensive care of disaster medicine
10. Justification for choosing a discipline: students of the residency program acquire new theoretical knowledge and improve their professional skills, which are necessary for providing qualified resuscitation care and intensive care to patients in emergency situations.
11. Learning outcomes: RL2, RL3, RL4, RL6.
12. Prerequisites: Fundamentals of anesthesiology-resuscitation and intensive care.
13. Post-requisites: continuing education courses. Scientific information.
14. References:
 - Levchuk I. P. катастроф ; Tretyakov N. V. Medicine of catastrophes : textbook / Moscow : GEOTAR-Media, 2021. - 288 p.
 - Sumin S. A. Anesthesiology and Resuscitation : in 2 volumes. MIA, 2018. - 968s.
 - Emergency medicine. Textbook in 2 volumes. Publishing house GEOTAR-Media. Edited by S. F. Goncharov and A. Ya. Fisun. 2021/2021 – 608c.
 - Kolesnichenko P. L. et al. Disaster medicine. Textbook. GEOTAR-Media Publishing House, 2018 - 440c.

- 1. Department of emergency medicine and nursing**
- 2. Level of learning: residency**
- 3. Educational program: 7R01117 Anesthesiology and resuscitation adult, children**
- 4. Course: 1, 2**
- 5. Name of the elective discipline: Specialized methods in anesthesiology**
- 6. Number of credits: 2**
- 7. Purpose: teaching specialized methods in anesthesiology**

8. Discipline content: neuroanesthesiology, hypothermia, controlled hypotension. High-frequency ventilation in anesthesiology. Ultrasound in neuroaxial anesthesia. Assessment of the level of anesthesia depth by bispectral analysis. Artificial blood circulation, electrocardiostimulation in cardioanesthesia. Multimodal methods of anesthesia. Features. Controlled hemodilution during anesthesia. Features in critical conditions. On the prevalence of anesthesia in spinal cord surgery.
9. Tasks: to consolidate the skills of qualified anaesthetic care with the help of specialized methods in anaesthesiology.
 - teaching how to apply the principles of management in the organization of the work of an anesthesiologist;
 - consolidate the need for continuous professional training and improvement of their knowledge and skills based on the use of specialized methods of anesthesiology;
10. Justification for choosing a discipline: students' acquisition of new theoretical knowledge and improvement of professional skills which are necessary to provide qualified anesthetic care to the patient with the introduction of specialized methods of anesthesiology.
11. Learning outcomes: RL1, RL3, RL5, RL6.
12. Prerequisites: Fundamentals of anesthesiology-resuscitation and intensive care.
13. Post-requirements: continuing education courses. Scientific information.
14. References:
 - Inhalation therapy - Avdeev S. N. Publisher: GEOTAR-Media, Russia, 2022-400 pages.
 - Clinical anesthesiology. 4th Edition, Combined volume - J. Morgan. E., Publishing house: BINOM Russia 2021 - 1216 with il
 - Atlas of Anaesthesiology - Norbert Revere, Holger Til, Publishing house: MEDpress-inform Russia, 2022-416 p.c.
 - Critical situations in anaesthesiology: a practical guide - Borschoff, David S. Publishing house: GEOTAR-Media Russia, 2021-80s.

- 1. Department of emergency medicine and nursing**
- 2. Level of learning: residency**
- 3. Educational program: 7R01117 Anesthesiology and resuscitation adult, children**
- 4. Course: 3**
- 5. Name of the elective discipline: Efferent therapy in the clinic of endo- and exotoxicosis**
- 6. Number of credits: 4**
- 7. Purpose: to train residents in the practical application of various methods of efferent therapy for endo- and exotoxicosis**
8. Content of the discipline: principles of efferent therapy. Pathogenetic basis of extracorporeal detoxification. Types. Toxicokinetic and toxicodynamic aspects. Endotoxicosis. Modern detoxification and corrective therapy. Efferent detoxification techniques. Natural detoxification. Hyperbaric oxygenation. Electrochemical oxidation of blood. Hemodialysis. Plasmapheresis. Ultrahemofiltration. Lymphohemoplasmosorption. Indications and contraindications, preparation, complication.
9. Tasks: - to study the features of efferent therapy in endo- and exotoxicosis

- to consolidate and work out the skills of providing resuscitation care during efferent therapy
 - learn how to practically apply various types of efferent therapy
 - to consolidate the need for continuous professional training and improvement of their knowledge and skills of efferent therapy in endo- and exotoxicosis.
10. Justification for choosing a discipline: students' acquisition of new theoretical knowledge and improvement of professional skills are necessary for providing qualified resuscitation care and intensive care to patients with the introduction of principles and methods of efferent therapy in the clinic of endo - and exotoxicosis.
 11. Learning outcomes: RL1, RL2, RL4, RL5.
 12. Prerequisites: Fundamentals of anesthesiology-resuscitation and intensive care.
 13. Post-requisites: continuing education courses. Scientific information.
 14. References:
 - Intensive care. National guidelines. In 2 volumes. Volume 2-2021.
Authors: Under the editorship of I. B. Zabolotskikh, D. N. Protsenko - GEOTAR-Media (2021). -10561056p.
 - Medical toxicology. National Guidelines-2014.
Authors: Ed. by Ye. A. Luzhnikova - GEOTAR-Media (2014). – 928c.
 - Voinov V. A.-Efferent therapy. Membrane plasmapheresis. 2009-365c.
 - J. R. R. Tolkien Edward Morgan Jr., Magid S. Michael, Michael J. Murray
M79 Klinicheskaya anesteziologiya [Clinical anesthesia] / Ed. 4-e, ispr, - Translated from English-Moscow: BINOM Publishing House, 2020. - 1216 p., ill.