

Catalog of elective disciplines

1. Department of neurology, psychiatry, rehabilitation and neurosurgery

2. Residency

3. Educational Program: «Neurosurgery for adults, children»

4. 2 course

5. Discipline: «Pediatric Surgery»

6. Number of credits: 4 credits

7. Purpose of the discipline: to master knowledge of modern problems of pediatric surgery, peculiarities of clinical picture of surgical diseases in children, as well as the principles of diagnosis, treatment and prevention of surgical diseases in childhood.

8. Content of the discipline:

Introduction to pediatric surgery. History of development. Features of surgical diseases of childhood. Pinched hernias in children. Head trauma in children. Trauma of the upper extremities in children. Trauma of the lower extremities in children. Spinal cord trauma in children. Osteochondropathies and congenital diseases of bones and joints in children. Combined lesions in children. Acute cerebral insufficiency in children. Basic principles of respiratory support in children. Infusion and transfusion therapy in emergency conditions in children.

9. Objectives:

- To train residents to diagnose in patients pathological conditions, symptoms, disease syndromes, nosologic forms in accordance with the International Statistical Classification of Diseases and Health Related Problems.
- Train residents in the management and treatment of patients requiring surgical medical care.
- To train residents to implement a set of measures aimed at the preservation and promotion of health and including the formation of a healthy lifestyle, prevention of the emergence and (or) spread of diseases in children and adolescents, their early diagnosis, identification of causes and conditions of their emergence and development, as well as aimed at eliminating the harmful effects of environmental factors on human health.

10. Rationale for the choice of discipline: Pediatric surgery is one of the most important sections of modern medicine and specialized care. According to the literature, scientific and technological progress creates conditions for the introduction of new types of diagnostics and treatment, new techniques and approaches in pediatric surgery, which have recently been called "new technologies". The application of new technologies makes it possible to move the terms of surgical interventions to an earlier age, in some cases to refuse heavy, complex and dangerous surgical interventions and, by choosing an alternative method of treatment, to achieve a positive effect. High quality of treatment is largely determined by the level of diagnostics. Equipped with diagnostic equipment allows to carry out various studies and opens opportunities for search and introduction of such new directions as X-ray endovascular, laparoscopic and thoracoscopic surgery. However, the analysis of literature sources indicates that the role of the family and its medical activity as a factor contributing to the prevention of diseases and their complications remains unexplored in the study of surgical pathology in children.

11. Learning Outcome

Knowledge (cognitive domain)	Skills (psychomotor domain)	Personal and professional competencies (attitudes)
Knows the problematic issues, principles, methods of scientific research and evidence-based medicine in the profile of pediatric surgery. Knows the pathogenesis, variability of clinical manifestations, modern	He is able to analyze the literature data of the results of scientific research of domestic and foreign authors, collect information on current problems of scientific research, conduct statistical	Is able to establish maximum trust with the patient, relatives, colleagues, and other employees. Applies knowledge in establishing professional, personal, and corporate contacts.

<p>methods of diagnosis, treatment and prevention of diseases in the profile of pediatric surgery. Knows the organizational directions and methods of medical care, criteria for assessing the quality of medical care to patients in the profile of pediatric surgery. Has an understanding of the general principles of using laboratory and instrumental diagnostic methods of research to obtain scientific data and assess the results of treatment of patients in the profile of pediatric surgery.</p>	<p>testing of hypotheses in the profile of pediatric surgery; - assess the clinical picture of a disease or condition (group of diseases or conditions), diagnose, prescribe treatment, recommend rehabilitation and preventive measures for patients in the profile of pediatric surgery; and surgery; - assess the organization and quality of medical care, identify problems, to evaluate the organization and quality of medical care, identify problems related to the process, timing and result of medical care for patients in pediatric surgery; - choose methods of laboratory and instrumental diagnostic studies necessary for solving scientific problems, interpret the obtained results of scientific research in the profile of pediatric surgery. - is able to apply known methods of controlling quality of medical care with the use of quality assessment criteria, solve scientific problems to improve the provision of medical care to patients in the profile of pediatric surgery. surgery</p>	<p>Strives to improve professional skills in communicating with students, faculty, and patients in a manner consistent with the rules of dentology and subordination.</p>
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12. Prerequisites: normal anatomy, path.anatomy, normal physiology, path.physiology, histology.

13. Post-requisites: nervous diseases, neurosurgery, rehabilitation.

14. Literature

Main :

1. Pediatric surgery: textbook / - edited by Y.F. Isakov, A.Yu. Razumovsky. Moscow: GEOTARMedia, 2015. - 1040 c.
2. Pediatric surgery: textbook [Electronic resource] / - edited by Y.F. Isakov, A.Y. Razumovsky. Moscow: GEOTARMedia, 2016. - 1040 c.
3. Pediatric surgery. Short version of the national manual [Electronic resource] ed. by A. Yu. Razumovsky; Rev. ed. A.F. Dronov M.: GEOTARMedia, 2016.
4. textbook for universities M. P. Razin, V. A. Skobelev, L. M. Zheleznov [et al]. M. GEOTARMedia, 2020 - 327 p.

Additional:

1. Genital head trauma (basics of personalized medical care) : textbook [Electronic resource] ed. by A. S. Job. SPb. :SpetsLit, 2018. - 80 c. Access mode: <http://booksup.ru>.
2. Surgical diseases, ed. by Y. A. Kozlov, V. M. : GEOTAR-Media, 1 - 9 premature children : nats. ruku. A. Novozhilov, A. Y. Razumovsky 2019 - 580 p.
3. Levanovich V.V., Zhila N.G., Komissarov I.A. Ambulatory surgery of pediatric age: textbook. M. GEOTAR-Media, 2014. 144 p.
4. Mironov S.P. Clinical recommendations. Traumatology and orthopedics of children and adolescents / edited by S.P. Mironov. M. : GEOTAR-Media, 2017. 416 p.

1. Department of Neurology, Psychiatry, Rehabilitation and Neurosurgery**2. Residency****3. Educational program:** «Neurosurgery for adults, children»**4.** 2 course**5. Discipline:** «Oncology in the hospital»**6. Number of credits:** 4 credits

7. Purpose of the discipline: to master the theoretical knowledge of oncological diseases and to form practical skills necessary in the practical activity of a doctor-oncologist to solve consultative-diagnostic, therapeutic, preventive, educational and outreach tasks.

8. Content of the discipline: Modern problems and tasks of oncology. Organization of oncological care. Morbidity and mortality from malignant neoplasms. Age and gender features of oncologic diseases. Diagnostic algorithm, stages of diagnosis, types of diagnostic studies. General principles of diagnostics of malignant neoplasms. Laboratory methods of diagnosis: biochemical, immunologic studies. Assessment of immune status. Immunodiagnosis of tumors. Methods of visualization of neoplasms. X-ray examination, X-ray computed tomography. Oncomorphologic diagnostics of neoplasms. Principles of morphologic study. Surgical treatment. Classification of surgical interventions. Basic principles of surgical interventions. Radiation therapy of oncologic diseases. Technical equipment and methods of irradiation of the patient. Chemotherapy of oncologic diseases. Structure of oncologic service. Tasks and functions of oncologic service. Interrelation with other medical institutions. Equipment. Definition of the concept, goals and objectives of the examination of the ability to work. The main documents certifying incapacity for work and the general rules for their completion and issuance. Organization of the examination of temporary incapacity for work. Legal provisions for patients with disability. Social security of patients with oncologic pathology.

9. Objectives:

- To train a neurosurgeon who possesses modern theoretical and practical knowledge of diagnosis, prevention, prognostic assessment of strokes, emergency, urgent care of patients with cancer.
- To train residents with knowledge, skills and practical skills to perform intensive care manipulations necessary for patients with oncologic diseases.
- To train residents to provide rehabilitation therapy to patients with cancer at the early stage of rehabilitation in inpatient and outpatient settings.

10. Rationale for the choice of discipline:

The relevance of the discipline is the increased interest in the problems of oncology, which in recent decades is determined by a number of factors. In the Republic of Kazakhstan, as well as in most developed countries of the world, the incidence of malignant neoplasms and mortality from them are steadily increasing. In the structure of mortality of the population of our country malignant neoplasms occupy one of the leading places. The number of patients with a tumor diagnosed for the first time in life, put on the account during a year, for the last ten years has a tendency to increase.

11. Learning Outcomes

Knowledge (cognitive domain)	Skills (psychomotor domain)	Personal and professional competencies (attitudes)
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<p>Knows the factors contributing to malignant tumors and prevention measures cancer.</p> <p>Knows the symptoms of the most frequent malignant tumors, pathogenesis of their development.</p> <p>Knows:</p> <ul style="list-style-type: none"> - modern methods of diagnostics of malignant tumors, the role and methods of instrumental and morphological studies, - modern principles and results of radical and palliative treatment of malignant tumors, the role and methods of instrumental and morphologic studies. malignant tumors, - deontological aspects in oncology, - issues of rehabilitation and dispensary observation in various diseases, indications for sanatorium-resort treatment, - scientific research aimed at improving early diagnosis and results of treatment of oncologic patients. treatment of cancer patients, conducted in our country and abroad. 	<p>Able to identify:</p> <ul style="list-style-type: none"> - On the basis of anamnesis, clinical picture of the disease, stage and histologic tumor structure to determine indications and contraindications to radiation treatment. <p>Knows:</p> <ul style="list-style-type: none"> - methods of diagnosis and treatment, prophylaxis,; - differential diagnosis of oncologic diseases; - rehabilitation of patients in the early recovery period. - To carry out the necessary diagnostic and therapeutic and prophylactic measures, including primary resuscitation care, be able to assess the severity of the patient's condition, make a differentiated diagnosis; - basics of pharmacotherapy, physiotherapy and other treatment methods used in rehabilitation of patients with oncologic diseases. - to conduct independent work with educational, scientific, reference literature, as well as with medical sites on the Internet. 	<p>Is able to establish maximum trust with the patient, relatives, colleagues, and other employees.</p> <p>Applies knowledge in establishing professional, personal, and corporate contacts.</p> <p>Strives to improve professional skills in communicating with students, faculty, and patients in a manner consistent with the rules of dentology and subordination.</p>
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12. Prerequisites: normal anatomy, path.anatomy, normal physiology, path.physiology, histology.

13. Post-requisites: nervous diseases, neurosurgery, rehabilitation.

14. Literature: main and additional

Main:

1. Trufanov, G. E. Radiation therapy (radiotherapy) / G. E. Trufanov [et al]; edited by G. E. Trufanov - Moscow: GEOTAR-Media, 2018. - 208 c.
2. Cherenkov, V. G. Oncology: textbook / V. G. Cherenkov. - 4th ed., revised. and supplement. -Moscow: GEOTAR-Media, 2020. - 512 p: ill. - 512 c. - ISBN 978-5-9704-5553-1.
3. Davydov, M. I. Oncology: a textbook / M. I. Davydov, Sh. H. Gantsev [et al]. -Moscow: GEOTAR Media, 2020. - 920 p.: il. - 920 c. - ISBN 978-5-9704-5616-3.
4. National guide "Antitumor drug therapy"/edited by V.A.Gorbunova. V.A.Gorbunova, M.V.Stenina.-Moscow: GEOTAR-Media, 2022.

Additional:

1. Gorbunova, V. A. Neuroendocrine tumors. General principles of diagnosis and treatment: a practical guide / ed. by V. A. Gorbunova. A. Gorbunova. - Moscow: GEOTAR-Media, 2021. - 600 c. - ISBN 978-5-9704-5997-3. Access mode: <http://www.studmedlib.ru/book/ISBN9785970459973.html>
2. Gantsev, Sh. H. Skin cancer. Melanoma / Gantsev Sh. H., Kyzirgalin Sh. R., Timin K. E. E. - Moscow: GEOTAR-Media, 2020. - 160 c. (Series "Oncology") - ISBN 978-5-9704-5658-3. Access mode: <http://www.studmedlib.ru/book/ISBN9785970456583.html>.

1. Department of Neurology, Psychiatry, Rehabilitation and Neurosurgery

2. Residency

3. Educational program: «Neurosurgery for adults, children»

4. 2 course

5. Discipline: «Angiosurgery in the hospital»

6. Number of credits: 4 credits

7. Purpose of the discipline: to train highly qualified doctors of angiosurgery, able to provide full medical care to patients with vascular diseases and to ensure the reduction of disability and increase the level of working capacity of the population of the Republic of Kazakhstan.

8. Content of the discipline: History of development of vascular surgery. Organization of angiosurgical service in the Republic of Kazakhstan. Anatomy of cardiovascular system. Topographic anatomy. Accesses to the main vessels. Etiology, pathogenesis and diagnostics of chronic cerebral insufficiency. Hemodynamic changes and other risk factors for complications during carotid artery surgery. Carotid endarterectomy. Indications, contraindications. Carotid endarterectomy. Perioperative period. Carotid endarterectomy. Carotid endarterectomy. Indications, contraindications. X-ray endovascular stenting of carotid arteries, indications, contraindications. Methods. Management of patients with bilateral carotid artery disease. Choice of method and tactics of surgical treatment. Indications, contraindications.

9. Objectives:

- To train a neurosurgeon who possesses modern theoretical and practical knowledge of diagnosis, prevention, prognostic assessment of strokes, emergency, urgent care of patients with cancer.
- To train residents with knowledge, skills and practical skills to perform intensive care manipulations necessary for patients with oncologic diseases.
- To train residents to provide rehabilitation therapy to patients with cancer at the early stage of rehabilitation in inpatient and outpatient settings.

10. Rationale for the choice of discipline:

Stroke has now been declared a global epidemic threatening the life and health of the world's population. Each year, about 17 million people suffer from stroke, 70% of whom live in low- or middle-income countries. It is predicted that stroke mortality will reach 7.8 million by 2030 unless unified worldwide measures are taken to combat MI. In the Republic of Kazakhstan (RK), MI ranks third in prevalence, slightly behind myocardial infarction and malignant neoplasms.

According to official statistics in 2015, more than 40 thousand Kazakhstanis suffered a stroke, of which 24% were fatal. The incidence of stroke in different regions of the country ranges from 2.5 to 3.7 cases per 1,000 people per year, and mortality from 100 to 180 cases per 100,000 people. MI is the main cause of disability in RK and is 104.6 per 100,000 population. According to literature data ischemic stroke accounts for 70%. In this regard, the angiosurgeon should be engaged in surgical prevention of ischemic stroke in carotid artery stenosis.

11. Learning Outcomes

Knowledge (cognitive domain)	Skills (psychomotor domain)	Personal and professional competencies (attitudes)
	Able to :	Is able to establish maximum trust with the patient, relatives,

<p>Knows the general principles of organization and conduct of dispensary examination of angiosurgical patients, including children; Knows the clinical symptoms of the main angiosurgical diseases, their prevention, diagnosis and treatment; Knows general and functional methods of examination of an angiosurgical patient; Knows: -principles, techniques, features and methods of anesthesia in angiosurgery, issues of intensive therapy and resuscitation; -basics of pharmacotherapy in angiosurgical diseases, including general and local use of antibiotics, angioprotectors, hormone therapy; immunobiology; radiology; -principles of preparing patients for surgery and management of the postoperative period; -equipment of operating rooms and intensive care rooms, safety techniques when working with equipment; surgical instruments used in various angiosurgical operations.</p>	<p>- Identify general and specific signs of angiosurgical disease, especially in cases requiring emergency care or intensive care. - assess the severity of the patient's condition and take the necessary measures to bring the patient out of this condition, determine the scope and sequence of resuscitation measures - determine the need for special methods of investigation and their sequence (laboratory, radiological, X-ray, X-ray contrast, functional and other), interpret their data; -interpret the data of USDG, angiography; -perform surgical operations using video endoscopic technique, puncture techniques under the control of ultrasound and CT; -develop a plan to prepare the patient for emergency or planned surgery, determine the degree of homeostasis disorder, prepare all functional systems of the patient's body for surgery; -develop a scheme of postoperative management of the patient and prevention of postoperative complications</p>	<p>colleagues, and other employees. Applies knowledge in establishing professional, personal, and corporate contacts. Strives to improve professional skills in communicating with students, faculty, and patients in a manner consistent with the rules of dentology and subordination.</p>
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12. Prerequisites: normal anatomy, path.anatomy, normal physiology, path.physiology, histology.

13. Post-requisites: nervous diseases, neurosurgery, rehabilitation.

14. Literature: basic and additional

Basic:

1. Stroke. Modern approaches to diagnosis, treatment, prevention. Methodical recommendations / D.R. Khasanova, V.I. Danilov, M.V. Saykhunov et al. - Kazan, Almaty, 2010.-88 p.
2. Guidelines for the Early Management of Patients With Acute Ischemic Stroke: A Guideline for Healthcare Professionals From the American Heart Association/American Stroke Association. 2013 - 2014. [Electronic resource] www.eso-stroke.org
3. Sokolovich A. G. Vascular Surgery and Angiology. Moscow: Phoenix. - Textbook, 2006, 176 pp.
4. Kulikov V.P. (ed.) Ultrasonic diagnostics of vascular diseases. - Manual for doctors. - 1st ed. - M.: STROM, 2007. - 512 c. - ISBN 5-900094-29-4.

1. 5. Odinak M.M. (ed.) Reference book on cerebral Dopplerography. - Moscow: Spectromed, 2004. - 52 c. [Dua A., Desai S., Holcomb J. \(eds.\). Clinical Review of Vascular Trauma.](#) - 2014. — 385 p. — ISBN 978-3642390999
2. [Cronenwett J.L., Johnston K.W. Rutherford's Vascular Surgery.](#) - 2016. — 2448 p. — ISBN: 978-1-416-05223-4.

Additional:

1. Kozhanova A.K. Ibrayev S.E., Samosyuk N.I. Non-medicamentoznyk methods of treatment and rehabilitation. Textbook on rehabilitation medicine, 2012. - 23c.
2. Kovalchuk V.V. Medico-social rehabilitation of patients after stroke. Moscow: St. Petersburg State Medical University, 2013. - 87c.
3. De Becky M.E., Petrovsky B.V. Emergency surgery of heart and vessels. - Moscow: Medicine, 1980.
4. Asher A., Pokrovsky A.V. Vascular Surgery according to Kaimovich. Volume 1, Volume 2. Per. s Engl. ed. by A. V. Pokrovskiy. 2nd ed. (el.). - MOSCOW: BINOM. Laboratory of Knowledge, 2012. - 644 p., 600 p.
5. [Lumley J.S.P., Hoballah J.J. Vascular Surgery.](#) - 2016. - 474 p. ISBN: 354041102X

1. Department of Neurology, Psychiatry, Rehabilitation and Neurosurgery

2. Residency

3. Educational program: «Neurosurgery for adults, children».

4. 2 course

5. Discipline: «Methods of neuroimaging and functional diagnostics».

6. Number of credits: 4 credits

7. Purpose of the discipline: to master the methodology of understanding the basics of neuroimaging for the diagnosis of neurological pathology as a differential component to the chosen specialty of a neurosurgeon.

8. Content of the discipline: Radiography in the diagnosis of diseases of the nervous system. The main indications for application. Possibilities of the method for dynamic control at surgical interventions. CT of the skull and brain. Targeted study of various parts of the skull and brain. CT of the spine and spinal cord. CT signs of spinal lesions. 3D-modeling. MRI of the brain. Targeted study of different parts of the brain. Coronal slices. MRI of the spinal cord. Possibilities of MR - diagnosis of multiple sclerosis, tumors of the central nervous system. Methods of vascular visualization. Main indications for application. MR angiography of the brain and spinal cord. Targeted study of different parts of the brain. MR angiography in diagnostics of aneurysms, arterio-venous malformations of the brain and spinal cord. Prospective methods of neuroimaging. Functional MRI. PET, SPECT tomography, magnetic spectroscopy, localization of magnetic source.

9. Objectives:

-To train a neurosurgeon who is proficient in modern neuroimaging research methods in the diagnosis of neurological pathology.

-To train residents in clinical thinking, to form a differentiated approach

to diagnosis and treatment of patients, the ability to apply acquired knowledge in practice.

- To train residents to provide medical care in cases of emergency conditions and independent medical activity in specialized departments of hospitals and clinics.

10. Rationale for the choice of discipline:

By the end of the 20th century, magnetic resonance imaging (MRI) and X-ray computed tomography (CT) had firmly entered clinical practice, revolutionizing approaches to disease diagnosis in virtually all fields of medicine. This is fully applicable to neurology, which thanks to MRI and CT has been enriched with unique experience of clinical and neuroimaging comparisons. The advent of high-field MR tomographs and ultrafast pulse sequences opened new diagnostic opportunities for neuroimaging in assessing the rate of diffusion processes, local and trunk blood flow, liquor flow in the brain, etc..

Further evolution of neuroimaging followed the way of increasing the speed of MRI and CT scanners images acquisition, creation of new technologies of data registration, algorithms of their processing. Currently, the widespread use of high-field magnetic resonance and multispiral X-ray computed tomography scanners makes it possible not only to study structural changes in the CNS, but also to assess cerebral metabolism, blood flow, and functional state of certain parts of the brain. Such techniques as perfusion MRI (CT), diffusion-weighted and diffusion-tensor MRI, voxel MRI-morphometry, MR-spectroscopy, functional MRI, etc., which were recently considered to be the newest promising trends in neuro-radiology, are now widely used in various fundamental and applied studies.

11. Learning Outcomes

Knowledge (cognitive domain)	Skills (psychomotor domain)	Personal and professional competencies (attitudes)
<p>Knows the basic neuroimaging methods of research in neurological practice Knows the main indications for the prescription of additional methods of research in a patient with the development of neurological pathology and emergency conditions. Knows the essence and the main indications for prescribing various methods of neuroimaging studies</p>	<p>Skills :</p> <ul style="list-style-type: none"> - Evaluate clinical and instrumental changes in the development of neurologic pathology in a patient. - Based on the results of clinical examination, instrumental and functional tests according to the data of the medical history to diagnose neurological pathology, monitor the treatment process - Analyze the need for hospitalization and emergency surgical intervention, the adequacy of the treatment process. Analyze the need for hospitalization and emergency surgical intervention, adequacy and validity of intervention -To master the technique of registration of radiography, computer and magnetic resonance Tomography of the brain and spinal cord 	<p>Is able to establish maximum trust with the patient, relatives, colleagues and other employees.</p> <p>Applies knowledge in establishing professional, personal and corporate contacts.</p> <p>Strives to improve professional skills in communicating with students, faculty, and patients, observing the rules of dentistry and subordination.</p>

12. Prerequisites: normal anatomy, path.anatomy, normal physiology, path.physiology, histology.

13. Post-requisites: nervous diseases, neurosurgery, rehabilitation.

14. Literature:

Core:

1. Neurology and neurosurgery. In 2 volumes. Volume 1. Neurology [Electronic resource] : textbook / Gusev E.I., Konovalov A.N., Skvortsova V.I. - 2nd ed. revised and supplemented - Moscow : GEOTAR-Media, 2013. - <http://www.studmedlib.ru/book/ISBN9785970426043.html>
2. "Neurology and neurosurgery. In 2 vol. T. 2. Neurosurgery [Electronic resource] : textbook / E.I. Gusev, A.N. Konovalov, V.I. Skvortsova; edited by A.N. Konovalov, A.V. Kozlov. - 4th ed.,

- supplement. - M. : GEOTAR-Media, 2015." - <http://www.studmedlib.ru/book/ISBN9785970429020.html>
3. Neurology and neurosurgery. In 2 volumes. Volume 2. Neurosurgery [Electronic resource] : textbook / Gusev E.I., Konovalov A.N., Skvortsova V.I. - 2nd edition, revised and additional - Moscow : GEOTAR-Media, 2013. - <http://www.studmedlib.ru/book/ISBN9785970426050.html>
4. Pediatric neurology. In 2 volumes. Volume 1. General neurology [Electronic resource] : textbook / Petrukhin A.S. - M. : GEOTAR-Media, 2012. - <http://www.studmedlib.ru/book/ISBN9785970422625.html>
5. Pediatric neurology. In 2 vols. Volume 2. Clinical neurology [Electronic resource] : textbook / Petrukhin A.S. - M. : GEOTAR-Media, 2012. - <http://www.studmedlib.ru/book/ISBN9785970422632.html> Neurological complications of spinal osteochondrosis [Electronic resource] / A. S. Nikiforov, G. N. Avakyan, O. I. Mendel - 2nd ed. - Moscow : GEOTAR-Media, 2015. - <http://www.studmedlib.ru/book/ISBN9785970433331.htm>

Supplementary:

1. "Neurology and Neurosurgery. In 2 vols. T. 1. Neurology [Electronic resource] : textbook / E.I. Gusev, A.N. Konovalov, V.I. Skvortsova; ed. by A.N. Konovalov, A.V. Kozlov. - 4th ed., supplement. - M. : GEOTAR-Media, 2015. - <http://www.studmedlib.ru/book/ISBN9785970429013.html>
2. General neurology [Electronic resource] / A. S. Nikiforov, E. I. Gusev. - 2nd ed., revised and additional - Moscow: GEOTAR-Media, 2013. - <http://www.studmedlib.ru/book/ISBN9785970426616.html>
3. General neurology [Electronic resource] : textbook / A.S. Nikiforov, E.I. Gusev - Moscow: GEOTAR-Media, 2007. - <http://www.studmedlib.ru/book/ISBN9785970405154.html>

1. Department of Neurology, Psychiatry, Rehabilitation and Neurosurgery

2. Residency

3. Educational program: «Neurosurgery for adults, children».

4. 2 course

5. Discipline: « Intensive therapy in surgical patients».

6. Number of credits: 8 credits

7. Purpose of the discipline: to consolidate the skills of basic therapeutic, diagnostic and preventive interventions to carry out a set of measures to restore and maintain the functions of vital organs and systems in surgical and therapeutic patients.

8. **Content of the discipline:** Apparatus and equipment for intensive care. Monitoring in intensive care. Acid-base state in intensive care. Intracranial hypertension. Cerebral edema. Etiology. Pathogenesis. Clinical picture. Diagnosis. Resuscitation and intensive care. Intensive therapy of combined craniocerebral trauma.

9. Objectives:

-To train a neurosurgeon who is able to assess the severity of the patient's condition, to deepen and consolidate the skills of identifying existing disorders, diagnosis of comorbidities, to form and consolidate the skills of determining the scope and nature of preoperative preparation, to form knowledge and skills on the selection of anesthesia care for patients with surgical pathology.

-To teach residents clinical thinking, to form a differentiated approach

to the diagnosis and treatment of patients, the ability to apply the acquired knowledge in practice.

- To train residents to provide medical care in cases of emergency conditions and independent medical activity in specialized departments of hospitals and clinics.

10. Rationale for the choice of discipline:

Optimization of intensive care in the preoperative and early postoperative periods in patients with acute surgical pathology prevents the development of postoperative complications twofold. High risk of severe complications (TELA, pneumonia, cerebral edema, acute coronary and cerebral circulatory disorders) in patients with acute surgical diseases and injuries is due to many factors: acute onset,

pronounced inflammatory process, presence of concomitant therapeutic pathology, extensive injuries, duration of surgical intervention and, accordingly, anesthesia, imperfection of intensive care in the early postoperative period.

11. Learning Outcomes

Knowledge (cognitive domain)	Skills (psychomotor domain)	Personal and professional competencies (attitudes)
<p>Knows the basics of normal and pathological physiology of various organs and systems, the state of metabolism and homeostasis indicators.</p> <p>metabolism and indicators of homeostasis.</p> <p>Knows the etiology, pathogenesis and clinic of the main nosologic forms of diseases and pathologic syndromes encountered in the practice of anesthesiology-resuscitation.</p> <p>pathological syndromes encountered in the practice of anesthesiology-animatology.</p> <p>Knows the peculiarities of anesthesia in specialized sections of surgery: in surgery, urology, traumatology, oncology, pulmonary surgery, ENT surgery, obstetrics and gynecology, pediatric surgery. Gynecology, pediatric surgery, cardiac surgery, and ambulatory surgery.</p> <p>Has an understanding of the general principles of using laboratory and instrumental diagnostic methods of research to obtain scientific data and assess the results of treatment of patients in the profile of surgery.</p>	<p>Knows how to :</p> <ul style="list-style-type: none"> -analyze the literature data of the results of scientific research of domestic and analyze the literature data of the results of scientific research of domestic and foreign authors, collect information on current problems of scientific research, conduct statistical testing of hypotheses in the profile of surgery; - assess the clinical picture of a disease or condition (group of diseases or conditions), diagnose, prescribe treatment, recommend rehabilitation and preventive measures for patients in the profile of surgery; - analyze the clinical picture of a disease or condition (group of diseases or conditions), diagnose, prescribe treatment, recommend rehabilitation and preventive measures for patients in the profile of surgery; - evaluate the organization and quality of medical care, identify problems, to evaluate the organization and quality of medical care, identify problems related to the process, timing and outcome of medical care for patients in the profile; - choose methods of laboratory and instrumental diagnostic studies necessary for solving scientific problems, interpret the obtained results of scientific research in the profile of surgery. 	<p>Is able to establish maximum trust with the patient, relatives, colleagues and other employees.</p> <p>Applies knowledge in establishing professional, personal and corporate contacts.</p> <p>Strives to improve professional skills in communicating with students, faculty, and patients, observing the rules of dentistry and subordination.</p>

	- is able to apply known methods of control of quality of medical care with the use of quality assessment criteria, solve scientific problems to improve the provision of medical care to patients in the profile of surgery. surgery	
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12. Prerequisites: normal anatomy, path.anatomy, normal physiology, path.physiology, histology.

13. Post-requisites: nervous diseases, neurosurgery, rehabilitation.

14. Literature:

Basic:

1. Lobanova, E.D. Resuscitation and intensive care / E.D. Lobanova. - Moscow: Medicine, 2000. - 296 c.

2. Malyshev, V.D. Intensive therapy: Manual for doctors / V.D. Malyshev, S.V. Sviridov et al. - Yerevan: MIA, 2009. - 712 c.

3. Malyshev, V.P. Intensive therapy / V.P. Malyshev. - M.: MIA, 2009. - 712 c.

4. Resuscitation and intensive therapy. Collection of tests and situational tasks. - Moscow: Phoenix, 2007. - 128 c.

5. Radushkevich, V.L. Resuscitation and intensive therapy for the practicing doctor. / V.L. Radushkevich, B.I. Bartakevich. - M.: MIA, 2011. - 576 c.

6. Sumin, S.A. Anesthesiology, resuscitation, intensive care: Textbook / S.A. Sumin. - Yerevan: MIA, 2015. - 496 c. 7. Sue, D.I. Intensive therapy: modern aspects / D.I. Sue. - Moscow: MEDpress-
Inform, 2008. - 336 c.

Additional:

1. Brown D.L. "Atlas of regional anesthesia", Moscow, Medpress-
Inform, 2009.

2. Emergency pulmonology: [guide] / E.K. Zilber. - Moscow: GEOTARMedia, 2009. - 264 c.

3. Neal M.J. Clear pharmacology: Per. with English // Edited by M.A. Demidova. - M.: GEOTARM., 2009. - 104 c. - (Exam on excellent).

4. K. Marcucci, N.A. Cohen, D.J. Metro. Anesthesiology how to avoid mistakes / V.A. Koryachkin. -SPb, 2011.

5. Smith G., Rowbutham D.J., Aitkenhead A.R. Anesthesiology 2010.

1. Department of neurology, psychiatry, rehabilitation and neurosurgery

2. Residency

3. Educational program: «Neurosurgery for adults, children»

4. 2 course

5. Discipline: «Neurology in the hospital»

6. Number of credits: 4 credits

7. Purpose of the discipline: formation of residents' systemic and theoretical knowledge on the sections of general and private neurology and neurosurgery, mastering practical skills of primary diagnosis of neurological disorders, methodology of formulating topical and clinical neurological diagnoses and principles of conservative and neurosurgical treatment of patients with diseases of the central and peripheral nervous system.

8. Content of the discipline: The subject and history of clinical neurology. Aims and objectives of the study of clinical neurology. Principles of structure and function of the nervous system. General and private neurology. Cerebrovascular diseases. Ischemic, hemorrhagic stroke. Infectious

diseases of the nervous system. Meningitis. Encephalitis. Myelitis. Nervous system damage in HIV infection, AIDS, syphilis, brucellosis, toxoplasmosis. Demyelinating diseases of the nervous system. Multiple sclerosis. Acute disseminated encephalomyelitis. Vertebrogenic lesions of the nervous system. Reflex muscle-tonic and compression syndromes. Diseases of the peripheral nervous system. Mononeuropathies, polyneuropathies, neuralgia. Paroxysmal disorders of consciousness. Epilepsy and neurogenic fainting. Degenerative diseases of the nervous system. Parkinson's disease. Huntington's chorea. Torsion dystonia. Wilson-Conovalov hepato-cerebral degeneration. Syringomyelia. Motor neuron disease. Myasthenia gravis. Alzheimer's disease.

9. Objectives:

- To train a neurosurgeon who possesses modern theoretical and practical knowledge of diagnosis, prevention, prognostic assessment, and provision of qualified, effective care to patients with nervous system disorders.
- To train residents in the knowledge, skills, and practical abilities to perform intensive care manipulations necessary for patients with nervous system disorders.
- To train residents to provide rehabilitation therapy to patients with nervous system disorders in the early phase of rehabilitation in inpatient and outpatient settings.

10. Rationale for the choice of discipline:

Studying the discipline: «Neurology in hospital», the resident gets an idea of etiology, pathogenesis and clinical manifestations of diseases with predominant lesions of the nervous system and diagnosis, principles of rehabilitation therapy. Much attention is paid to methods of prevention, primary and secondary prevention of extrapyramidal lesions, rehabilitation of patients with nervous disorders, as well as tactical and therapeutic errors made in inpatient, outpatient settings.

Teachers provide an opportunity to study the provision of effective therapy and management tactics, both at the hospital stage in hospitals and outpatient settings for patients with disorders due to lesions of the nervous system.

11. Learning Outcomes

Knowledge (cognitive domain)	Skills (psychomotor domain)	Personal and professional competencies (attitudes)
<p>Knows the issues of organization of neurological care for patients with nervous disorders.</p> <p>Knows the anatomy and topographic anatomy of the central, peripheral, vegetative nervous system.</p> <p>Knows the basic issues of normal and pathologic physiology of the nervous system.</p> <p>Knows:</p> <ul style="list-style-type: none"> -classification, -etiology of lesions of the nervous system, -mechanisms of development of lesions of the nervous system, - general and additional methods of examination used in the neurological clinic, 	<p>Able to identify:</p> <ul style="list-style-type: none"> -symptoms and syndromes of nervous system lesions. <p>Knows:</p> <ul style="list-style-type: none"> - methods of diagnosis and treatment, prevention,; - differential diagnosis of nervous disorders; - rehabilitation of patients with nervous disorders. - outcomes and prognosis of nervous disorders; ; - basics of pharmacotherapy, physiotherapy, therapeutic massage, and LFK, acupuncture and other methods of treatment used in the rehabilitation of patients with nervous disorders-self-performance and evaluation of diagnostic procedures (diet, non-traditional methods of treatment and prevention). 	<p>Is able to establish maximum trust with the patient, relatives, colleagues and other employees.</p> <p>Applies knowledge in establishing professional, personal and corporate contacts.</p> <p>Strives to improve professional skills in communicating with students, faculty, and patients, observing the rules of dentistry and subordination.</p>

- modern principles of treatment of nervous disorders.		
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12. Prerequisites: normal anatomy, path.anatomy, normal physiology, path.physiology, histology.

13. Post requisites: Nervous diseases, neurosurgery, rehabilitation.

14. Literature: basic and additional

Basic:

1. Nikiforov A. S. General neurology [Electronic textbook]: textbook / A. S. Nikiforov, E. I. Gusev. - Moscow: GEOTAR-Media, 2015. Access mode: <http://www.studmedlib.ru/book/ISBN9785970433850.html>
2. Gusev, E. I. Neurology and neurosurgery. T. 1: Neurology [Electronic resource] : textbook / E. I. Gusev, A. N. Konovalov, V. I. Skvortsova. - Moscow : GEOTAR-Media, 2015. Access mode: <http://www.studmedlib.ru/book/ISBN9785970429013.html>.

Additional:

1. Katunina E. A., Titova N .V. Diagnosis and treatment of early stages of Parkinson's disease. - M.: 2015. - 40 c.
2. Epifanov V. A. Rehabilitation in neurology [Electronic textbook] : textbook / V. A. Epifanov, A. V. Epifanov. - Moscow: GEOTAR-Media, 2015. Access mode: <http://www.studmedlib.ru/book/ISBN9785970434420.html>