

FEDERAL STATE BUDGET EDUCATIONAL INSTITUTION
OF HIGHER EDUCATION
"ROSTOV STATE MEDICAL UNIVERSITY"
MINISTRY OF HEALTH OF THE RUSSIAN FEDERATION

Faculty of Education of foreign students, residents and postgraduates

CONFIRM
Supervisor
educational program
_____/ E.S. Belousova /
(signature) (FULL NAME.)
" 30 " *abryca* 20_23

DISCIPLINE WORKING PROGRAM
NEUROLOGY, MEDICAL GENETICS, NEUROSURGERY

Speciality 31.05.01 General medicine

Form of education full-time

Rostov-on-Don
2023

I.GOALS AND OBJECTIVES OF MASTERING THE DISCIPLINE

Goalsmastering the discipline:

1. Teach the ability to conduct a neurological examination and identify symptoms of damage to the nervous system, the ability to combine symptoms into syndromes and make a topical diagnosis.
2. To provide modern knowledge about the etiology, pathogenesis, clinical picture, diagnosis, treatment and prevention of major diseases of the nervous system.
3. To develop in the student clinical neurological thinking, the ability to independently diagnose the most common neurological diseases, treat emergency neurological conditions and prevent diseases of the nervous system.
4. To lay down the concept of the main differences in human hereditary pathology (monogenic diseases, chromosomal syndromes, multifactorial diseases), give the concept of genealogy and reveal the main tasks of the clinical-genealogical method, study modern diagnostic methods, reveal the cytological and biochemical basis of heredity, determine the role of the genotype and external environment, study the clinical picture, diagnosis and prevention of major chromosomal syndromes and monogenic diseases.

Tasks:

- 1) Studying the methodology for studying the neurological status of the patient.
- 2) Studying the basics of topical diagnosis of diseases of the nervous system.
- 3) Familiarization with methods of laboratory and instrumental diagnosis of diseases of the nervous system (static perimetry, lumbar puncture, radiography of the skull and spine, electroencephalography, evoked potentials of the brain, rheoencephalography, electromyography, electroneuromyography, echoencephalography, ultrasound Dopplerography of the carotid and vertebral arteries, transcranial Dopplerography, pneumoencephalography, angiography, myelography, X-ray computed tomography of the brain and spinal cord, magnetic resonance imaging of the brain and spinal cord, single-photon emission computed tomography).
- 4) Teach the diagnosis, treatment and prevention of the most common diseases of the nervous system and introduce the basics of neurosurgical treatment.
- 5) Provide the necessary level of knowledge about the role of genetics and its impact on human society (from biological and social positions).
- 6) Study the various stigmas of disembryogenesis, which facilitate the description of the patient's phenotype during his examination.
- 7) Study the clinic, diagnosis of chromosomal syndromes, monogenic and polygenic diseases.
- 8) Study the main sections of the prevention of human hereditary pathology: medical and genetic counseling, prenatal diagnosis, screening of biochemical hereditary defects.

II. REQUIREMENTS FOR THE RESULTS OF MASTERING THE DISCIPLINE

The process of studying the discipline is aimed at developing the following competencies in accordance with the Federal State Educational Standard of Higher Education and the EP of Higher Education in this specialty:

a) general cultural (OK)-;

b) general professional (OPK):

the ability to use medical devices provided for in the procedure for providing medical care, as well as to conduct an examination of the patient in order to establish a diagnosis (GPC-4);

the ability to prescribe treatment and monitor its effectiveness and safety (GPC-7).

c) professional (PC):

readiness 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 for the provision of medical care, taking into account the standards of medical care (PC-3);

the ability to implement and monitor the effectiveness of the patient's medical rehabilitation, including the implementation of individual programs for rehabilitation or habilitation of the disabled, assessing the patient's ability to carry out labor activities (PC-4).

III. THE PLACE OF DISCIPLINE IN THE STRUCTURE OF EP VO

2.1. The academic discipline is the basic discipline

2.2. The formation of the above competencies is facilitated by the study of the following previous disciplines:

-Biology

Knowledge: Laws of genetics, its significance for medicine.

Skills: use biological equipment.

Skills: mastery of medical-genetic conceptual apparatus.

- Anatomy

Knowledge: Anatomical, physiological, age-sex and individual characteristics of the body of a healthy and sick person.

Skills: analyze the state of organ structures in humans.

Skills: medical-anatomical conceptual apparatus.

- Normal physiology

Knowledge: human functional systems.

Skills: use physical equipment.

Skills: mastery of simple medical instruments (neurological hammer).

- Latin language

Knowledge: basic medical and pharmaceutical terminology in Latin.

Skills: use at least 900 terms and term elements.

Skills: Reading and writing Latin.

- Pharmacology

Knowledge: Classification, mechanisms of action and side effects of drugs.

Skills: analyze the effect of drugs based on the totality of their properties and evaluate the possibilities of their use.

Skills: prescribing medications for various pathological processes.

- Pathophysiology, clinical pathophysiology

Knowledge: etiology, pathogenesis of human diseases, basic concepts of general nosology.

Skills: substantiate the nature of the pathological process and its clinical manifestations.

Skills: making a diagnosis based on the main manifestations.

- Propaedeutics of internal diseases, radiation diagnostics

Knowledge: modern methods of clinical, laboratory, instrumental examination of patients.

Skills: conduct an examination of the patient, formulate a syndromic diagnosis, evaluate additional research methods.

Skills: general clinical methods, additional research methods.

- Microbiology, virology

Knowledge: Classification, morphology, physiology of microorganisms and viruses. The use of antibacterial and antiviral drugs.

Skills: use biological equipment.

Skills: principles of sterilization of equipment to avoid infection of the doctor and patient.

2.3. The discipline Neurology, medical genetics creates the prerequisites for the formation of these competencies by the disciplines:

- Therapy, occupational diseases

Knowledge of: etiology, pathogenesis, clinical manifestations, preventive measures for the most common diseases, modern classification of diseases, as well as the clinical picture, features of the course and possible complications of the nervous system in the most common diseases.

Skills: determine status, collect anamnesis, conduct a survey, physical examination; conduct an initial examination of systems and organs, including the nervous system; outline the scope of additional research, formulate a clinical diagnosis, and develop a treatment plan.

Skills: proper maintenance of medical records; knowledge of general clinical examination methods; interpretation of the results of laboratory and instrumental diagnostic methods; mastery of an algorithm for making a preliminary diagnosis with subsequent referral of the patient to a specialist, an algorithm for a detailed clinical diagnosis.

- Traumatology, orthopedics

Knowledge: etiology, pathogenesis, clinical picture, diagnosis and principles of treatment of injuries and diseases of the musculoskeletal system, terms of restoration of working capacity for typical injuries and orthopedic diseases.

Skills: perform a clinical examination of a patient with injuries or diseases of the musculoskeletal system, formulate a diagnosis, evaluate additional research methods.

Skills: diagnosis and treatment of injuries and diseases of the musculoskeletal system.

- Psychiatry, narcology

Knowledge: pathogenesis, methodology of diagnosis and treatment of mental and behavioral disorders.

Skills: conduct and interpret a survey, examination and results of additional studies of a patient with a mental or drug addiction disease, interpret the results of a clinical examination, carry out therapeutic measures.

Skills: interviewing and examining the patient, substantiating and conducting the necessary instrumental studies, making a diagnosis, carrying out rehabilitation measures.

- Ophthalmology

Knowledge: etiology, pathogenesis, classification, diagnosis, treatment and prevention of the most common diseases of the organ of vision.

Skills: collect anamnesis, assess the condition, conduct an initial examination of the visual organ, outline the scope of additional studies to clarify the diagnosis, formulate a clinical diagnosis, develop a treatment plan, the ability to fill out a medical history, write a prescription.

Skills: correct maintenance of medical records, ophthalmological examination methods, interpretation of laboratory results, instrumental diagnostic methods, diagnostic algorithm.

- Infectious diseases

Knowledge of: methods of clinical, laboratory, instrumental examination of patients, etiology, pathogenesis, clinical picture, features of the course and possible complications of the most common infectious diseases.

Skills: take and prepare material for sending to the laboratory, formulate a clinical diagnosis; justify methods of diagnosis, treatment, rehabilitation and prevention.

Skills: methods of general clinical examination; interpretation of the results of laboratory, instrumental diagnostic methods, algorithm of a detailed clinical diagnosis; proper maintenance of medical records.

- Otorhinolaryngology

Knowledge: etiology, pathogenesis, clinical picture, diagnostic methods and diagnostic capabilities of radiation studies (CT, MRI) for ENT pathology, treatment and prevention of major diseases of the ENT organs.

Skills: conduct an examination of the patient, formulate a diagnosis, prescribe treatment and prevention of diseases of the ENT organs.

Skills: proficiency in methods of examination, diagnosis and treatment of ENT pathologies.

- Anesthesiology, resuscitation, intensive care

Knowledge of: etiology, pathogenesis, clinical picture, features of the course and possible complications, methods of clinical, laboratory, instrumental examination, tactics of patient management and preventive measures for the most common diseases, features of the provision of medical and surgical care for life-threatening disorders and methods for their immediate elimination.

Skills: determine the patient's status, collect anamnesis, conduct a survey, physical examination, assess the condition, conduct an examination, formulate a clinical diagnosis, outline the scope of additional research, provide first aid in emergency conditions, first aid in lesions in emergency situations.

Skills: proficiency in diagnostic methods, diagnostic capabilities of direct examination of a medical and surgical patient, methods of carrying out emergency measures, methods of carrying out resuscitation and anti-shock measures, skills in interpreting the results of laboratory and instrumental diagnostic methods.

- Oncology

Knowledge of: factors contributing to the occurrence of malignant tumors and cancer prevention measures, the most common symptoms of malignant neoplasms, pathogenesis, diagnostic methods, modern principles and results of radical and palliative treatment of malignant neoplasms.

Skills: collect anamnesis, analyze the nature of complaints, conduct a physical examination, formulate and substantiate a clinical diagnosis, form a group of people at increased risk of developing a malignant tumor.

Skills: knowledge of diagnostic methods, interpretation of examination results, methods of carrying out emergency measures, performing surgical procedures and surgical interventions.

- Residency in Neurology/Neurosurgery

Knowledge of: general issues of organizing neurological services in the Russian Federation, organizing medical and preventive institutions and centers; anatomy and clinical physiology of the nervous system, the fundamentals of pathological physiology, neurophysiology, etiology, pathogenesis and clinic of major neurological diseases, the use of objective methods of examining the patient, identifying general and specific signs of the disease; determining which functional methods of examining the patient are necessary to clarify the diagnosis; determination of indications for additional consultations with specialists or for hospitalization, as well as indications and contraindications for the choice of diagnostic method and treatment tactics; preparation of medical documentation

Skills: obtain information about the disease, apply objective research methods, identify general and specific signs of a neurological disease, establish a topical diagnosis and neurological syndrome; assess the severity of the patient's condition, take the necessary measures to remove him from this condition, including determining the need for resuscitation measures; determine the need for special research methods, interpret the data obtained, determine indications for hospitalization; conduct a differential diagnosis of major neurological diseases, substantiate the clinical diagnosis, plan and tactics of patient management; determine a program of rehabilitation measures; resolve the issue of the patient's

ability to work; prepare medical documentation; draw up an urgent treatment program for acute neuroinfectious diseases, acute cerebrovascular accidents, and neurotrauma; relieve myasthenic crisis, acute pain syndrome; provide emergency assistance in case of an epileptic seizure; stop status epilepticus.

Skills: master the technique of performing lumbar puncture and liquorodynamic tests, performing therapeutic paravertebral blockade, performing the proserine test when diagnosing myasthenia gravis; performing echo-encephalography; carrying out therapeutic blockade of myofascial trigger points; assessment of data from neuro-ophthalmological and otoneurological examinations; deciphering and clinical interpretation of the results of neuroimaging (CT, MRI), neurophysiological (EEG, ENMG) and ultrasonographic (USDG, TCD) studies, proficiency in emergency and emergency care; proficiency in working with medical literature.

IV. CONTENT AND STRUCTURE OF DISCIPLINE

Labor intensity of the discipline in 3 6 hours 216

4.1. Sections of the discipline studied in the 8th semester (semesters)

No. section	Section name	Number of hours					SRS
		Total	Contact Job				
			L	WIT H	ET C	LR	
1	Anatomy of the nervous system Neurological status and its interpretation Topical diagnosis of nervous system diseases	52	14	-	24	-	14
2	Specialty neurology: infectious diseases of the nervous system, demyelinating diseases, vascular diseases, epilepsy, somatoneurology	68	14	-	28	-	26
3	Medical genetics	thirty	6	-	12	-	12
4	Neurosurgery: tumors of the nervous system, traumatic lesions of the nervous system, the problem of pain in neurology	thirty	6	-	16	-	8
	Interim certification exam form	36					

	<i>Total:</i>	216	40	-	80	-	60
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SRS- independent work of students

L- lectures

WITH- seminars(in accordance with the RUP)

LR –laboratory work (in accordance with the RUP)

ETC- practical exercises (in accordance with the RUP, they include clinical practical exercises)

4.2. Contact work

Lectures

No. section	No. lectures	Lecture topics	Number of hours
1.	1.	Introduction to Neuroscience. Sensitivity in normal and pathological conditions. Skin-muscle analyzer in normal and pathological conditions.	2
1	2	Sense organs.	2
1.	3.	Pyramidal nervous system.	2
1.	4.	Extrapyramidal nervous system. Coordination of movements and its disorders.	2
1.	5.	Higher brain functions. Lesion syndromes.	2
1.	6.	Autonomic nervous system. Cerebrospinal fluid.	2
2.	7.	Meningitis, arachnoiditis.	2
2.	8.	Encephalitis and encephalomyelitis	2
2.	9.	Demyelinating diseases of the nervous system. Multiple sclerosis.	2
2.	10.	Vascular diseases of the brain and spinal cord. Acute cerebrovascular accidents.	2
2.	elev	Epilepsy.	2
2.	12.	Somatoneurology.	2
3.	13.	General questions of genetics. Classification of hereditary diseases. Chromosomal diseases.	2
3.	14.	Neuromuscular diseases. Phakomatoses	2
3.	15.	Hereditary degenerative diseases.	2
4.	16.	Tumors of the nervous system.	2
4.	17.	Traumatic brain injury. Injury to the spine and spinal cord.	2
4.	18.	Osteocondritis of the spine. The problem of pain in neurology.	2

Laboratory work (not provided)

No. section	No. LR	Laboratory topics	Number of hours	Forms of current control

Seminars, practical work

No. section	No. seminar, PR	Topics with seminars, practical work	Number of hours	Forms of current control
1.	1.	Concept of neurology. Acquaintance with the department and clinic of nervous diseases and neurosurgery. Study of patients with disorders of various types of general sensitivity.	4	starting rating, survey
1.	2.	Study of patients with motor disorders caused by damage to the main path of voluntary movement.	4	survey
1.	3.	Study of patients with motor disorders caused by damage to the extrapyramidal and corrective systems of the cerebellum.	4	survey
1.	4.	Syndromes of damage to the brain stem and cranial nerves.	4	survey
1.	5.	Study of patients with disorders of higher brain functions.	4	survey
1.	6.	Study of patients with disorders of the autonomic nervous system and cerebrospinal fluid.	4	survey, milestone rating
2.	7.	Clinic, diagnosis and treatment of meningitis, arachnoiditis. Tuberculosis of the nervous system. Scheme of the medical history of a patient in the neurology clinic.	4	survey
2.	8.	Encephalitis, myelitis, poliomyelitis. Clinic, diagnosis, treatment.	4	survey
2.	9.	Clinic, diagnosis and treatment of demyelinating diseases of the nervous system.	4	survey
2.	10.	Clinic and treatment of vascular diseases of the brain. Cerebral crises and strokes.	4	survey

No. section	No. seminar , PR	Topics with seminars, practical work	Number of hours	Forms of current control
2.	eleven.	Epilepsy and convulsive syndromes. Diagnostics, clinic, treatment. Status epilepticus. Fainting. Submission of medical history	4	survey, interview
2.	12.	Damage to the nervous system in AIDS. Neurosyphilis. Neurobrucellosis.	4	survey
2.	13.	Somatoneurology. Occupational diseases of the nervous system. Neuroses.	4	survey
3.	14.	General questions of genetics. Chromosomal diseases.	4	survey
3.	15.	Degenerative diseases of the nervous system. Phakomatoses.	4	survey
3.	16.	Neuromuscular diseases.	4	survey
4.	17.	Tumors of the brain and spinal cord. Brain abscesses	4	survey
4.	18.	Traumatic brain injury. Traumatic injuries of the spine.	4	survey
4.	19.	Osteocondritis of the spine. Conservative and surgical treatment. Pain and its surgical treatment.	4	survey
	20.	Final lesson: tests, practical skills	4	interview, test control, practical skills test

4.3. Independent work of students

No. section	Type of independent work of students	Number of hours	Forms of current control
1.	preparation for class	8	Survey
1.	preparation for current control	2	Paperwork
1.	preparation for intermediate control	4	Milestone rating
2.	preparation for class	12	Survey
2.	preparation for current control	3	Survey, interview

No. section	Type of independent work of students	Number of hours	Forms of current control
2.	writing a medical history	eleven	Paperwork
3.	preparation for class	9	Survey
3.	preparation for current control	3	Interview
4.	preparation for class	2	Survey
4.	preparation for current control	3	Interview
	preparation for the final lesson	3	Interview, test control, practical skills test

V. ASSESSMENT FUND FOR CURRENT CONTROL AND INTERMEDIATE CERTIFICATION

The fund of assessment tools for determining the level of development of competencies as a result of mastering the discipline is an appendix to the work program.

VI. EDUCATIONAL AND METHODOLOGICAL SUPPORT OF DISCIPLINE

6.1. Main literature.

1. Gusev E.I. Neurology and neurosurgery. T.1: textbook: in 2 volumes E.I. Gusev, A.N. Konovalov, V.I. Skvortsova. – M.: GEOTAR-MEDIA, 2013. – 612 p.
2. Gusev E.I. Neurology and neurosurgery. T.2: textbook: in 2 volumes E.I. Gusev, A.N. Konovalov, V.I. Skvortsova. – T. 2. – M.: GEOTAR-MEDIA, 2013. – 419 p.

6.2. Additional literature.

1. Skoromets A.A. Nervous diseases: textbook. aid for students medical universities / A.A. Skoromets, A.P. Skoromets, T.A. Skoromets. – M.: MEDpress-inform, 2007. – 552 p.
2. Skoromets A.A. Nervous diseases: textbook. aid for students medical universities / A.A. Skoromets, A.P. Skoromets, T.A. Skoromets. – M.: MEDpress-inform, 2008. – 552 p.
3. Propaedeutics of nervous diseases: situational tasks and tests: textbook. manual for medical universities / ed. N.N. Yakhno, V.A. Parfenova. – M.: MIA, 2009. – 176 p.
4. Private neurology: situational tasks and tests: textbook. manual for medical universities / ed. N.N. Yakhno, V.A. Parfenova. – M.: MIA, 2009. – 176 p.

p.

5. Gusev E.I. Neurology and neurosurgery: textbook: 2 volumes + CD / E.I. Gusev, A.N. Konovalov, V.I. Skvortsova. – M.: GEOTAR-MEDIA, 2007. – 608 p.
6. Mikhailenko, A. A. Clinical neurology: semiotics and topical diagnostics: textbook. aid for students universities / A.A. Mikhailenko. – SPb.: FOLIANT, 2012. – 430 p.
7. Balyazin, V. A. Traumatic brain injury (modern approaches to diagnosis and treatment): textbook. allowance / V.A. Balyazin, E.V. Balyazina. – Rostov n/d: publishing house RostGMU, 2013. – 46 p.
8. Balyazina, E. V. Algorithm for a neurological examination of a patient - the path to a topical diagnosis: textbook. allowance / E.V. Balyazina. – Rostov n/d: publishing house RostGMU, 2013. – 39 p.
9. Goncharova Z.A. Paraneoplastic neurological syndromes (clinic, diagnosis, treatment): method. rec. / BEHIND. Goncharova, I.A. Safonova. – Rostov n/d: publishing house RostGMU, 2013. – 28 p.
10. Stroke. Modern approaches to diagnosis, treatment and prevention: method. rec. [rec. GBOU DPO "Russian Medical Academy of Postgraduate Education"]: for doctors / ed. D.R. Khasanova, V.I. Danilova. – M.: GEOTAR-Media, 2014. - 246 p.
11. Podchufarova E.V. Back pain / E.V. Podchufarova, N.N. Yakhno. – M.: GEOTAR-Media, 2015. – 356 p.
12. Popelyansky Ya.Yu. Diseases of the peripheral nervous system: a guide for doctors / Ya.Yu. Popelyansky. - 3rd ed. – M.: MEDpress-inform, 2015. - 351 p.
13. Poppa. J. Guide to neurology = A guide to the primary care of neurological disorders / A. J. Popp, E. M. Deshaye; lane from English; edited by N.N. Yakhno. – M.: GEOTAR-Media, 2014. - 681 p.
14. Early clinical forms of vascular diseases of the brain: a guide for doctors / ed. L.S. Manvelova, A.S. Kadykova. – M.: GEOTAR-Media, 2014. - 337 p.
15. Shaginyan G.G. Traumatic brain injury / G.G. Shaginyan, O.N. Dreval, O.S. Zaitsev; edited by HE. Drevalya. – M.: GEOTAR-Media, 2010. - 278 p.
16. Standard of specialized medical care for damage to individual nerves, nerve roots and plexuses (order of the Ministry of Health of the Russian Federation of November 7, 2012 No. 616n).
17. Standard of specialized medical care for intracranial trauma (order of the Ministry of Health of the Russian Federation dated November 7, 2012 No. 635n)
18. Standard of specialized medical care for degenerative diseases of the spine and spinal cord (order of the Ministry of Health of the Russian Federation dated November 7, 2012 No. 653n)
19. Standard of specialized medical care for neoplasms of the brain and meninges (Order of the Ministry of Health of the Russian Federation dated November 9, 2012 No. 715n)
20. Standard of specialized medical care for injuries of the spine, spinal cord and spinal cord nerves (Order of the Ministry of Health of the Russian Federation dated December 20, 2012 No. 639n)

21. Standard of specialized medical care for Alzheimer’s disease (order of the Ministry of Health of the Russian Federation dated December 20, 2012 No. 1228n)
22. Standard of specialized medical care for the first clinical manifestation of multiple sclerosis (clinically isolated syndrome) (Order of the Ministry of Health of the Russian Federation dated December 20, 2012 No. 1085n)
23. Standard of specialized medical care for intracranial and intravertebral abscesses (order of the Ministry of Health of the Russian Federation dated December 24, 2012 No. 1535n)
25. Standard of specialized medical care for viral encephalitis, myelitis (order of the Ministry of Health of the Russian Federation dated December 24, 2012 No. 1536n)
26. Standard of specialized medical care for acute disseminated encephalomyelitis (order of the Ministry of Health of the Russian Federation dated December 24, 2012 No. 1409n)
27. Standard of specialized medical care for dystonia (order of the Ministry of Health of the Russian Federation dated December 24, 2012 No. 1540n)
28. Standard of specialized medical care for epilepsy (order of the Ministry of Health of the Russian Federation dated December 24, 2012 No. 1541n)
29. Standard of specialized medical care for intracerebral hemorrhage (conservative treatment) (order of the Ministry of Health of the Russian Federation dated December 29, 2012 No. 1692n)
30. Standard of specialized medical care for cerebral infarction (order of the Ministry of Health of the Russian Federation dated December 29, 2012 No. 1740n)
31. Standard of specialized medical care for subarachnoid hemorrhage (conservative treatment) (order of the Ministry of Health of the Russian Federation dated December 29, 2012 No. 1749n)
32. Standard of specialized medical care for transient ischemic attack (order of the Ministry of Health of the Russian Federation dated December 29, 2012 No. 1693n)

6.3. Internet resources

	ELECTRONIC EDUCATIONAL RESOURCES	Access to the resource
1.	Digital library RostSMU. – URL: http://109.195.230.156:9080/opac/	Access is not limited
2.	Student Advisor: EBS. – Moscow: LLC “IPUZ”. - URL: http://www.studmedlib.ru	Access is not limited
3.	Doctor’s consultant. Electronic medical library: EBS. – Moscow: LLC GC “GEOTAR”. - URL: http://www.rosmedlib.ru	Access is not limited
4.	UpToDate: DB / Wolters Kluwer Health. – URL: www.uptodate.com	Access is not limited
5.	Consultant Plus: Withcorrect legal system. -URL: http://www.consultant.ru	Access from university computers
6.	Scientific electronic library eLIBRARY. - URL: http://elibrary.ru	Open access

7.	National Electronic Library. - URL: http://neb.rf/	Access from computers libraries
8.	Scopus/ Elsevier Inc., Reed Elsevier. – Philadelphia: Elsevier BV, PA. – URL: http://www.scopus.com/ (<i>National project</i>)	Access is not limited
9.	Web of Science/ Clarivate Analytics. - URL: http://apps.webofknowledge.com (<i>National project</i>)	Access is not limited
10.	ScienceDirect. Freedom Collection [journals] / Elsevier. – URL: www.sciencedirect.com by IP addresses of RostSMU.(<i>National project</i>)	Access is not limited
elev en.	Springer Nature database. - URL: http://link.springer.com/ by IP addresses of RostSMU.(<i>National project</i>)	Access is not limited
12.	Wiley Online Library /John Wiley & Sons. - URL: http://onlinelibrary.wiley.com by IP addresses of RostSMU.(<i>National project</i>)	Access from university computers
13.	Single window of access to information resources. - URL: http://window.edu.ru/	Open access
14.	Russian education. Federal educational portal. - URL: http://www.edu.ru/index.php	Open access
15.	ENVOC.RU English vocabulary]: educational site for English learners. language -URL: http://envoc.ru	Open access
17.	WordReference.com :online language dictionaries. - URL: http://www.wordreference.com/enru/	Open access
21.	Federal Electronic Medical Library of the Russian Ministry of Health. - URL: http://www.femb.ru/feml/ , http://feml.scsm1.rssi.ru	Open access
22.	Medline (PubMed, USA). – URL: https://www.ncbi.nlm.nih.gov/pubmed/	Open access
23.	Free Medical Journals. -URL: http://freemedicaljournals.com	Open access
24.	Free Medical Books. -URL: http://www.freebooks4doctors.com/	Open access
25.	International Scientific Publications. –URL: https://www.scientific-publications.net/ru/	Open access
26.	CyberLeninka : scientific electron. beep. - URL: http://cyberleninka.ru/	Open access
27.	Archive of scientific journals / NEIKON. - URL: https://archive.neicon.ru/xmlui/	Open access
28.	Open access journals in Russian /ElPub NEICON platform. – URL: https://elpub.ru/	Open access
29.	Medical Bulletin of the South of Russia. - URL: https://www.medicalherald.ru/jour or from the RostSMU website	Open access
thirt y.	World Health Organization. - URL: http://who.int/ru/	Open access
31.	Evrika.ru information and educational portal for doctors. – URL: https://www.evrika.ru/	Open access
32.	Med-Edu.ru : medical video portal. - URL: http://www.med-edu.ru/	Open access
33.	Univadis.ru : international honey. portal. - URL: http://www.univadis.ru/	Open access
34.	DoctorSPB.ru : information-reference portal about medicine. - URL: http://doctorspb.ru/	Open access
35.	Modern problems of science and education : electron. magazine. - URL: http://www.science-education.ru/ru/issue/index	Open access
	Rubricator of clinical recommendations Ministry of Health of Russia. -	Open access

VII. MATERIAL AND TECHNICAL SUPPORT OF DISCIPLINE

7.1. Educational and laboratory equipment.

1. Nakhichevansky lane, 38/57-59/212-214, department and clinic of neurosurgery, therapy clinic, Liter A, 1st floor, classroom No. 1, 2 classroom tables, 1 teacher's table, 22 chairs, teaching board.
2. Nakhichevansky lane, 38/57-59/212-214, department and clinic of neurosurgery, therapy clinic, Liter A, 1st floor, study room No. 2, 2 study tables, 1 teacher's table, 22 chairs, teaching board, couch .
3. Nakhichevansky lane, 38/57-59/212-214, department and clinic of neurosurgery, therapy clinic, Liter A, 1st floor, classroom No. 3, 2 classroom tables, 1 teacher's table, 22 chairs, teaching board.
4. Nakhichevansky lane, 38/57-59/212-214, department and clinic of neurosurgery, therapy clinic, Liter A, 1st floor, classroom No. 4, 2 classroom tables, 1 teacher's table, 22 chairs, teaching board.
5. Nakhichevansky lane, 38/57-59/212-214, department and clinic of neurosurgery, therapy clinic, Liter A, 1st floor, classroom No. 5, 2 classroom tables, 1 teacher's table, 22 chairs.
6. Nakhichevansky lane, 38/57-59/212-214, department and clinic of neurosurgery, therapy clinic, Liter A, 1st floor, head's office. department, 1 teacher's table, 4 chairs, 2 computers, 1 MFP.

Practical skills and patient supervision are developed on the basis of the clinical department of neurology, designed for 60 beds, and the department of neurosurgery, designed for 40 beds.

7.2. Technical and electronic means.

Multimedia equipment for demonstrating lectures

Lecture presentations:

- "Introduction to Neuroscience".
- "Sensitivity in normal and pathological conditions. Skin-muscle analyzer in normal and pathological conditions."
- "Sensitivity in normal and pathological conditions. Sense organs."
- "Pyramidal nervous system."
- "Extrapyramidal nervous system. Coordination of movements and its disorders."
- "Higher brain functions. Defeat syndromes."
- "Autonomic nervous system. Cerebrospinal fluid."
- "Meningitis, arachnoiditis."
- "Encephalitis andencephalomyelitis."
- "Demyelinating diseases of the nervous system. Multiple sclerosis".
- "Vascular diseases of the brain and spinal cord. Acute cerebrovascular accidents."
- "Vascular diseases of the brain and spinal cord. Encephalopathy".

"Epilepsy".

"Somatoneurology".

"General questions of genetics. Classification of hereditary diseases. Chromosomal diseases".

"Neuromuscular diseases. Phakomatoses."

"Hereditary degenerative diseases."

"Tumors of the nervous system."

"Traumatic brain injury. Injury to the spine and spinal cord."

"Osteocondritis of the spine. The problem of pain in neurology."

Film: "Conducting Paths."

Sets of posters, tables.

Stand "Cerebral cortex" - 2 pcs.

