№ ЛД-16 ИН

Federal State Budgetary Educational Institution of Higher Education
"NORTH OSSETIAN STATE MEDICAL ACADEMY"
of the Ministry of Health of the Russian Federation

ДОКУМЕНТ ПОДПИСАН
ЭЛЕКТРОННОЙ ПОДПИСЬЮ

Сертификат:
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Владелец: Ремизов Олег Валерьевич
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APPROVED
Rector of FSBEI HE NOSMA
MOH Russia
O.V. Remizov
«24» May 2023

EDUCATIONAL TRAINING PROGRAM OF DISCIPLINE

«Neurology, neurosurgery»

the main professional educational program of higher education – specialty program in the specialty 31.05.01 General Medicine, approved on May 24, 2023

Form of education: Full-time

The period of development: 6 years

Department of Psychiatry with Neurology, Neurosurgery and Medical Rehabilitation

Vladikavkaz, 2023

When developing the main professional educational program of higher education (MPEP HE) - specialty programs in the specialty 31.05.01 General Medicine are based on:

1) Federal State Educational Standard No. 95 on specialty 31.05.01 General Medicine, approved by the Ministry of Education and Science of the Russian Federation on February 9, 2016

2) educational plans of the MPEP HE in NOSMA in the specialty 31.05.01 General Medicine (№ ЛД-16):
ЛД-16-04-18
ЛД-16-05-19
ЛД-16-06-20, approved by the Academic Council of the Federal State Budgetary Educational Institution of Higher Education NOSMA of the Ministry of Health of Russia dated May 24, 2023, protocol No. 8

The work program of the discipline was approved at a meeting of the Department of Psychiatry with Neurology, Neurosurgery and Medical Rehabilitation on May 19, 2023, Protocol No. 9

The work program of the discipline was approved at the meeting of the Central Committee for Medical Education of the Federal State Budgetary Educational Institution of Higher Education of the NOSMA of the Ministry of Health of Russia dated May 23, 2023, protocol No. 5

The work program of the discipline was approved by the Academic Council of the Federal State Budgetary Educational Institution of Higher Education NOSMA of the Ministry of Health of Russia dated May 24, 2023, protocol No. 8.

Program developers: Professor d.m.s. I. A. Torchinov

Reviewers:

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Content of the work program

1. name of the discipline;
2. the list of planned results of training in the discipline, correlated with the planned results of the development of the educational program;
3. indication of the place of the discipline in the structure of the educational program;
4. the volume of the discipline in credit units, indicating the number of academic or astronomical hours allocated for contact work of students with the teacher (by type of training sessions) and for independent work of students;
5. the content of the discipline, structured by topics (sections) with an indication of the number of academic or astronomical hours allocated to them and the types of training sessions;
6. list of educational and methodological support for independent work of students in the discipline;
7. Evaluation materials for intermediate evaluation of students in the discipline;
8. list of basic and additional educational literature required for the development of the discipline;
9. list of resources of the information and telecommunications network " Internet "(hereinafter - the network "Internet"), necessary for the development of the discipline;
10. guidelines for students on the development of the discipline;
11. list of information technologies used in the implementation of the educational process in the discipline, including a list of software and information reference systems (if necessary); 12. description of the material and technical base necessary for the implementation of the educational process in the discipline.

13. Conducting educational activities using e-learning and distance learning technology

2. The list of planned learning outcomes and the results of mastering the educational program

№ п/п	Number/ index of competence	Content of the competence (or part of it)	Topic of the lesson (section)	Development results		
				know	Be able	To own
1	2	3	4	5	6	7
1.	OPC-4	Ability and willingness to implement ethical and deontological principles in professional activities	1. Subject and history of clinical neurology. The principles of the structure and function of the nervous system. Research methods of the nervous system. Construction of a topical diagnosis in neurology. 2. Voluntary movements and their disorders. Symptoms of the lesion of the cortical-muscular pathway at different levels. Central and peripheral paresis. 3. Extrapyramidal system and symptoms of its defeat. 4. Coordination of movements and its disorders. 5. Sensitivity and its disorders. Central and peripheral mechanisms of pain. 6. Symptoms and syndromes of damage to the spinal cord, its roots and peripheral nerves. 7. Symptoms and syndromes of damage to the brain stem and cranial nerves. 8. Autonomic (autonomic) nervous system and autonomic disorders. Neurogenic dysfunctions of the pelvic organs. 9.Crains of the brain, cerebrospinal fluid. Meningeal and hypertensive syndromes. Hydrocephalus. 10. Disturbances of consciousness, wakefulness and sleep. Higher brain functions and their disorders: aphasia, apraxia, agnosia, amnesia, dementia. Syndromes of damage to individual lobes of the brain and hemispheres. 11. Acute disorders of the cerebral circulation Dyscirculatory encephalopathy. Vascular	Moral and ethical norms, rules and principles of professional medical behavior, ethical foundations of a modern doctor and patient. The need to maintain secrecy and confidentiality.	Apply basic legal regulations. Communicate with patients, medical personnel, observing the rules of medical ethics and medical deontology.	Moral and ethical argumentation

			dementia. 12. Vertebrogenic neurological disorders and other musculoskeletal diseases. 13. Movement disorders (parkinsonism, muscular dystonia, chorea, tics). Multiple sclerosis. 14.Infectious diseases of the nervous system. 15. Tumors of the nervous system. Tumors of the brain and spinal cord, peripheral nerves. 16. Cranial and spinal injuries. 17. Paroxysmal disorders of consciousness. Epilepsy, coma, fainting.			
2	OPC-7	Readiness to use basic physical, chemical, mathematical and other natural concepts and methods in solving professional problems	1. Subject and history of clinical neurology. The principles of the structure and function of the nervous system. Research methods of the nervous system. Construction of a topical diagnosis in neurology. 2. Voluntary movements and their disorders. Symptoms of the lesion of the cortical-muscular pathway at different levels. Central and peripheral paresis. 3. Extrapyramidal system and symptoms of its defeat. 4. Coordination of movements and its disorders. 5. Sensitivity and its disorders. Central and peripheral mechanisms of pain. 6. Symptoms and syndromes of damage to the spinal cord, its roots and peripheral nerves. 7. Symptoms and syndromes of damage to the brain stem and cranial nerves. 8. Autonomic (autonomic) nervous system and autonomic disorders. Neurogenic dysfunctions of the pelvic organs. 9.Crains of the brain, cerebrospinal fluid. Meningeal and hypertensive syndromes. Hydrocephalus. 10. Disturbances of consciousness, wakefulness and sleep. Higher brain functions and their disorders: aphasia, apraxia, agnosia,	Basic physical, chemical and mathematical natural science concepts and methods for solving professional problems. The chemical and biological essence of the processes occurring in a living organism at the molecular and cellular levels;	Use physical, chemical and biological equipment to classify chemical compounds based on their structural formulas; - to predict the direction and result of physicochemical processes and chemical transformations of biologically important substances; - use the IUPAC nomenclature to compile names according to the formulas of typical representati	chemical and medical terminology; - skills of independent work with educational, scientific and reference literature, skills of generalization of the studied literature;

			amnesia, dementia. Syndromes of damage to individual lobes of the brain and hemispheres. 11. Acute disorders of the cerebral circulation Dyscirculatory encephalopathy. Vascular dementia. 12. Vertebrogenic neurological disorders and other musculoskeletal diseases. 13. Movement disorders (parkinsonism, muscular dystonia, chorea, tics). Multiple sclerosis. 14.Infectious diseases of the nervous system. 15. Tumors of the nervous system. Tumors of the brain and spinal cord, peripheral nerves. 16. Cranial and spinal injuries. 17. Paroxysmal disorders of consciousness. Epilepsy, coma, fainting.		ves of biologically important substances and drugs	
3	OPC-9	The ability to assess morphofunctional, physiological conditions and pathological processes in the human body for solving professional problems	1. Subject and history of clinical neurology. The principles of the structure and function of the nervous system. Research methods of the nervous system. Construction of a topical diagnosis in neurology. 2. Voluntary movements and their disorders. Symptoms of the lesion of the cortical-muscular pathway at different levels. Central and peripheral paresis. 3. Extrapyramidal system and symptoms of its defeat. 4. Coordination of movements and its disorders. 5. Sensitivity and its disorders. Central and peripheral mechanisms of pain. 6. Symptoms and syndromes of damage to the spinal cord, its roots and peripheral nerves. 7. Symptoms and syndromes of damage to the brain stem and cranial nerves. 8. Autonomic (autonomic) nervous system and autonomic disorders. Neurogenic dysfunctions of the pelvic organs. 9.Crains of the brain, cerebrospinal fluid. Meningeal	The main morphofuncti onal, physiological and pathological conditions And processes In organism human on individual, group and population levels	Apply knowledge about the morpho-functional structure of organs and systems the human body for solving professiona l problems	Medical and functional conceptual apparatus; methods of assessing morphofun ctional, physiologic al and pathologica l states and processes in the human body on an individual, group and population levels for solving professiona l problems

			and hypertensive syndromes. Hydrocephalus. 10. Disturbances of consciousness, wakefulness and sleep. Higher brain functions and their disorders: aphasia, apraxia, agnosia, amnesia, dementia. Syndromes of damage to individual lobes of the brain and hemispheres. 11. Acute disorders of the cerebral circulation Dyscirculatory encephalopathy. Vascular dementia. 12. Vertebrogenic neurological disorders and other musculoskeletal diseases. 13. Movement disorders (parkinsonism, muscular dystonia, chorea, tics). Multiple sclerosis. 14.Infectious diseases of the nervous system. 15. Tumors of the nervous system. Tumors of the brain and spinal cord, peripheral nerves. 16. Cranial and spinal injuries. 17. Paroxysmal disorders of consciousness. Epilepsy, coma, fainting.			
4	PK-5	Willingness to collect and analyze patient complaints, data from his anamnesis, examination results, laboratory, instrumental, pathological research data in order to recognize a condition or establish the presence or absence of a disease.	1. Subject and history of clinical neurology. The principles of the structure and function of the nervous system. Research methods of the nervous system. Construction of a topical diagnosis in neurology. 2. Voluntary movements and their disorders. Symptoms of the lesion of the cortical-muscular pathway at different levels. Central and peripheral paresis. 3. Extrapyramidal system and symptoms of its defeat. 4. Coordination of movements and its disorders. 5. Sensitivity and its disorders. Central and peripheral mechanisms of pain. 6. Symptoms and syndromes of damage to the spinal cord, its roots and peripheral nerves. 7. Symptoms and syndromes of damage to the brain stem	Etiology, pathogenesis of neurological disorders, modern classifications of neurological pathologies, their clinical manifestations and symptoms, methods of laboratory and clinical diagnostics, treatment, prevention of the disease itself and its complications, including conditions requiring urgent care.	Interact with the patient, be able to collect complaints, anamnesis, conduct an examination, and also interpret the correctly obtained data. To be able to interpret the data of instrumental and laboratory studies in Neurology. Carry out differential	The ability to collect patient data, communicate with him. Correctly conduct a neurological examination.

			and cranial nerves. 8. Autonomic (autonomic) nervous system and autonomic disorders. Neurogenic dysfunctions of the pelvic organs. 9.Crains of the brain, cerebrospinal fluid. Meningeal and hypertensive syndromes. Hydrocephalus. 10. Disturbances of consciousness, wakefulness and sleep. Higher brain functions and their disorders: aphasia, apraxia, agnosia, amnesia, dementia. Syndromes of damage to individual lobes of the brain and hemispheres. 11. Acute disorders of the cerebral circulation Dyscirculatory encephalopathy. Vascular dementia. 12. Vertebrogenic neurological disorders and other musculoskeletal diseases. 13. Movement disorders (parkinsonism, muscular dystonia, chorea, tics). Multiple sclerosis. 14.Infectious diseases of the nervous system. 15. Tumors of the nervous system. Tumors of the brain and spinal cord, peripheral nerves. 16. Cranial and spinal injuries. 17. Paroxysmal disorders of consciousness. Epilepsy, coma, fainting.		diagnosis of diseases Formulate indications for treatment, substantiate therapy for patients, determining doses, routes of administration of drugs. Evaluate the effectiveness of the treatment.	
5	PC-6	The ability to determine the patient's main pathological conditions, symptoms, disease syndromes, nosological forms in accordance with ICD-10	1. Subject and history of clinical neurology. The principles of the structure and function of the nervous system. Research methods of the nervous system. Construction of a topical diagnosis in neurology. 2. Voluntary movements and their disorders. Symptoms of the lesion of the cortical-muscular pathway at different levels. Central and peripheral paresis. 3. Extrapyramidal system and symptoms of its defeat. 4. Coordination of movements and its disorders. 5. Sensitivity and its disorders.	The main pathomorphological processes in the most common neurological diseases. Clinical picture, course features and possible complications of the most common neurological diseases. Principles of	Assess the medical history, carry out differential diagnostics, draw up an examination plan and prescribe treatment	Interpretation of the results of laboratory, instrumental methods for diagnosing neurological diseases of the system

			Central and peripheral mechanisms of pain. 6. Symptoms and syndromes of damage to the spinal cord, its roots and peripheral nerves. 7. Symptoms and syndromes of damage to the brain stem and cranial nerves. 8. Autonomic (autonomic) nervous system and autonomic disorders. Neurogenic dysfunctions of the pelvic organs. 9.Crains of the brain, cerebrospinal fluid. Meningeal and hypertensive syndromes. Hydrocephalus. 10. Disturbances of consciousness, wakefulness and sleep. Higher brain functions and their disorders: aphasia, apraxia, agnosia, amnesia, dementia. Syndromes of damage to individual lobes of the brain and hemispheres. 11. Acute disorders of the cerebral circulation Dyscirculatory encephalopathy. Vascular dementia. 12. Vertebrogenic neurological disorders and other musculoskeletal diseases. 13. Movement disorders (parkinsonism, muscular dystonia, chorea, tics). Multiple sclerosis. 14.Infectious diseases of the nervous system. 15. Tumors of the nervous system. Tumors of the brain and spinal cord, peripheral nerves. 16. Cranial and spinal injuries. 17. Paroxysmal disorders of consciousness. Epilepsy, coma, fainting.	diagnosis according to the International Classification of Diseases and Related Health Problems (ICD-10)		

3. Place of discipline in the structure of the educational program

The academic discipline "Neurology" belongs to the basic part of Block 1 of the Federal State Educational Standard of Higher Education in the specialty 31.05.01 "General Medicine"

4. Scope of the discipline

№ п/п	Type of work		Total credits	Total hours	Semesters
					VII
					hours
1	2		3	4	5
1	**Contact work of students with teacher (total), including:**		-	78	78
2	Lectures (L)		-	18	18
3	Clinical Practices (CP)		-	60	60
4	Seminars (S)		-	-	-
5	Laboratory work (LW)		-	-	-
6	**Student independent work (SIW)**		-	30	30
7	**Type of intermediate certification**	credit (C)			
		exam (E)	1	36	36
8	**TOTAL: General labor intensity**	hours		144	144
		credit units	4		4

5. Content of the discipline

L - lectures; PE - practical exercises; SIW - student's independent work; OQ - oral questioning; TC - test control; ST - situational tasks; WR - written works

№/ П	Semester No.	The name of the topic (section) of the discipline	Learning activities in hours				Forms of monitoring of progress
			L	PE	SIW	Total	
1	2	3	4	5	6	7	8
1	VII	**Subject and history of clinical neurology. The principles of the structure and function of the nervous system. Research methods of the nervous system. Construction of a topical diagnosis in neurology. Goals and objectives of the study of clinical neurology. Clinical neurology is part of the neurosciences. General and private neurology. Anatomical and physiological characteristics of the central and peripheral nervous system. Age characteristics of the nervous system. Neuron, neuroglia, synapse: structure, functional significance, role in health and disease. The mechanism of conduction of excitation along the axon, axoplasmic current. Blood-brain barrier. Methodology for constructing a neurological diagnosis: topical and nosological diagnoses.**	0,5	3	1	4,5	**OQ, TC, ST, WR, supervision of patients**

2	**VII**	**Arbitrary movements and their disorders. Symptoms of the lesion of the cortical-muscular pathway at different levels. Central and peripheral paresis. Modern ideas about the organization of free movement. The cortical-muscular pathway: structure, functional significance. Central (upper) and peripheral (lower) motor neurons. Corticospinal tract: its functional significance for the organization of voluntary movements. Reflex arc: structure and function. Levels of reflex closure in the spinal cord and brainstem, importance in topical diagnosis. Superficial and deep reflexes, basic pathological reflexes, protective spinal reflexes. Regulation of muscle tone: spinal reflex arch, gammasystem. Suprasegmental levels of muscle tone regulation. Study of muscle tone. Neuropathophysiological bases of changes in physiological reflexes, pathological pyramidal reflexes, spasticity. Central and peripheral paresis: changes in muscle tone and reflexes, muscle trophism. Clinical features of lesions of the cortical-muscular pathway at different levels: the brain (precentral gyrus, radiant crown, inner capsule, brain stem), spinal cord (lateral cord, anterior horn), anterior root, plexus, peripheral nerve, neuromuscular synapse, muscle.**	**1**	**6**	**2**	**9**	**OQ, TC, ST, WR, supervision of patients**
3	**VII**	**Extrapyramidal system and symptoms of its defeat. The structure and main connections of the extrapyramidal system, the role in the organization of movements; participation in the organization of movements by providing posture, muscle tone and stereotyped automated movements. Neurophysiological and neurochemical mechanisms of regulation of the extrapyramidal system, the main neurotransmitters: dopamine, acetylcholine, gamma-aminobutyric acid. Hypokinesia (oligo- and bradykinesia), rigidity and muscle hypotonia. Hyperkinesis: tremor, muscular dystonia, chorea, tics, hemiballism, athetosis, myoclonus. G hypotonic-hyperkinetic and hypertonohypokinetic syndromes. Neuropathophysiology of extrapyramidal movement disorders, methods of pharmacological correction**	**0,5**	**2**	**1**	**3,5**	**OQ, TC, ST, WR, supervision of patients**
4	**VII**	**Coordination of movements and its disorders. Anatomical and physiological data: cerebellum and vestibular system: anatomy and physiology, afferent and efferent connections, role in the organization of movements. Clinical research methods of coordination of movements. Symptoms and syndromes of cerebellar lesion: ataxia, dyssynergia, nystagmus, dysarthria, muscle hypotension. Ataxias: cerebellar, vestibular, frontal, sensitive. Pathophysiology and pharmacological methods of correction**	**0,5**	**2**	**1**	**3,5**	**OQ, TC, ST, WR, supervision of patients**

5	**VII**	**Sensitivity and its disorders. Central and peripheral mechanisms of pain. Sensitivity: exteroceptive, proprioceptive, interoceptive, complex species. Afferent systems of somatic sensitivity and their structure: receptors, pathways. Anatomy and physiology of superficial and deep sensation conductors. Epicritic and protopathic sensitivity. Types of sensitivity disorders: hypo- and hyperesthesia, paresthesia and pain, dysesthesia, hyperpathy, allodynia, causalgia. Types of sensitivity disorders: peripheral, segmental, conductive, cortical. Dissociated sensitivity disorder. Neuropathophysiological, neurochemical and psychological aspects of pain. Antinociceptive system. Acute and chronic pain. Central pain. Reflected pain.**	**1**	**6**	**1**	**8**	**OQ, TC, ST, WR, supervision of patients**
6	**VII**	**Symptoms and syndromes of damage to the spinal cord, its roots and peripheral nerves. Sensory and movement disorders with damage to the cervical, thoracic, lumbar and sacral segments of the spinal cord, anterior and posterior roots, plexuses, peripheral nerves. Brown-Sequard syndrome. Syringomyelitis syndrome. Paraclinical research methods - MRI and CG of the spine, electroneuromyography (study of conduction velocity along motor and sensory fibers of peripheral nerves, study of EI reflex and P-waves, magnetic stimulation with conduction of motor potentials).**	**1**	**2**	**2**	**5**	**OQ, TC, ST, WR, supervision of patients**
7	**VII**	**Symptoms and syndromes of the brain stem and cranial nerves. The structure of the brain stem (medulla oblongata, pons and midbrain). Cranial nerves: anatomical and physiological data, clinical research methods and symptoms of lesion. Inapa - olfactory nerve and olfactory system; symptoms and syndromes of damage. Para - the optic nerve and the visual system, signs of damage to the visual system at different levels (retina, optic nerve, chiasm, optic tract, optic tubercle, visual radiance, cortex). Neuro-ophthalmological and paraclinical methods of studying the visual system (examination of the fundus, visual evoked potentials). III, IV, VI pairs - oculomotor, block, abducens nerves and oculomotor system; symptoms of defeat; medial longitudinal fasciculus and internuclear ophthalmoplegia; gaze regulation, cortical and stem gaze paresis; oculocephalic reflex; pupillary reflex and signs of its defeat; types and causes of anisocoria; Argyll Robertson syndrome, Adie syndrome. V pair - trigeminal nerve, sensory disorder syndromes (peripheral, nuclear, brainstem and hemispheric); chewing disorders. VII pair - facial nerve, central and peripheral paresis of mimic muscles, clinic of facial nerve damage at different levels. Taste and its disorders. VUInapa - vestibular cochlear nerve, auditory and vestibular systems; the role of the vestibular apparatus in the regulation of movement coordination, balance and posture; signs of damage at different levels; nystagmus, vestibular dizziness, vestibular ataxia, Meniere's syndrome. Otoneurological methods for**	**2**	**6**	**1**	**9**	**OQ, TC, ST, WR, supervision of patients**

		the study of vestibular function. 1Xi X pairs - glossopharyngeal and vagus nerves, autonomic functions of the vagus nerve; signs of damage at different levels, bulbar and pseudobulbar syndromes. XI pair - accessory nerve, signs of damage. XII pair - hypoglossal nerve, signs of damage; central and peripheral paresis of the muscles of the tongue. Brain stem lesion syndromes at various levels, alternating syndromes.					
8	**VII**	**Autonomic (autonomic) nervous system and autonomic disorders. Neurogenic dysfunctions of the pelvic organs. The structure and functions of the autonomic (autonomic) nervous system, sympathetic and parasympathetic systems; peripheral (segmental) and central parts of the autonomic nervous system. Limbicohypothalamo-reticular complex. Symptoms and syndromes of damage to the peripheral autonomic nervous system: peripheral autonomic insufficiency, Raynaud's syndrome. Physiology of voluntary control of the functions of the bladder. Neurogenic bladder, urinary retention and incontinence, urge to urinate. Signs of central and peripheral bladder dysfunction. Instrumental and drug correction of peripheral autonomic disorders and neurogenic bladder.**	**0,5**	**2**	**1**	**3,5**	**OQ, TC, ST, WR, supervision of patients**
9	**VII**	**The meninges, cerebrospinal fluid. Meningeal and hypertensive syndromes. Hydrocephalus. The structure and function of the membranes of the spinal cord and brain. Cerebrospinal fluid: functional significance, formation, circulation, reabsorption. Meningeal syndrome: manifestations, diagnosis. Investigation of cerebrospinal fluid: lumbar puncture, pressure measurement, Kvekenstedt's test, composition of cerebrospinal fluid in normal conditions and in basic pathological conditions, protein-cellular and cellular-protein dissociation. Hypertensive syndrome: main clinical and paraclinical signs. Dislocation syndrome. Hydrocephalus, congenital and acquired, open and occlusive, medical tactics. Medicinal correction of intracranial hypertension.**	**1**	**2**	**2**	**5**	**OQ, TC, ST, WR, supervision of patients**
10	**VII**	**Disturbances of consciousness, wakefulness and sleep. Anatomical and physiological foundations of the regulation of consciousness, wakefulness, sleep; the reticular formation of the brainstem and its connection with the cerebral cortex. Forms of impaired consciousness: stunnedness, stupor, coma, akinetic mutism. Destructive and metabolic coma. Chronic vegetative state, brain death. Electrophysiological research methods - EEG, evoked potentials of the brain. Principles of management of patients in coma. Physiology of wakefulness and sleep. Sleep and wakefulness disorders: insomnias, parasomnias, sleep-speaking, bruxism, sleepwalking, nocturnal enuresis, night fears, hypersomnia (narcolepsy), sleep apnea syndrome, restless legs syndrome; principles of therapy.**	**0,5**	**2**	**1**	**3,5**	**OQ, TC, ST, WR, supervision of patients**

11	**VII**	**Higher cerebral functions and their disorders: aphasia, apraxia, agnosia, control, amnesia, dementia. Syndromes of lesions of individual lobes of the brain and a survey, hemispheres. The cerebral cortex: basic principles of structure and function, the problem of localization of functions in the brain. Functional asymmetry of the cerebral hemispheres. Concept of the systemic organization of mental functions. Higher cerebral (mental) functions: gnosis, praxis, speech, reading, writing, counting, memory, attention, intelligence and their disorders; aphasia (motor, sensory, amnestic, semantic); apraxia (constructive, spatial, ideomotor); agnosias (visual, auditory, olfactory); astereognosis, anosognosia, autotopagnosia; dysmnestic syndrome, Korsakov's syndrome; dementia, mental retardation. The importance of neuropsychological research in the neurological clinic. Syndromes of lesions of the frontal, parietal, temporal and occipital lobes of the brain.**	**1**	**2**	**2**	**5**	**OQ, TC, ST, WR, supervision of patients**
12	**VII**	**Acute disorders of cerebral circulation. Encephalopathy. Vascular dementia. Blood supply to the brain: anatomy and physiology. Classification of vascular diseases of the brain. Etiology of vascular diseases of the brain. Pathophysiology of cerebral circulation in occlusion of cerebral arteries and in arterial hypertension. Transient cerebrovascular accident (transient ischemic attack) and ischemic stroke: etiology, pathogenesis, clinical picture, diagnosis, treatment. Cerebral hemorrhage: etiology, pathogenesis, clinical picture, diagnosis, therapy and indications for surgical treatment. Subarachnoid nontraumatic hemorrhage: etiology, pathogenesis, clinical picture, diagnosis, therapy and indications for surgical treatment. Paraclinical methods for diagnosing acute disorders of cerebral circulation - CT and MRI, ultrasound Doppler ultrasound, ultrasound duplex and triplex scanning, transcranial Doppler, angiography. Rehabilitation of stroke patients. Primary and secondary prevention of stroke. Dyscirculatory encephalopathy: etiology, pathogenesis, clinical forms, diagnosis, treatment and prevention. Hypertensive crisis and hypertensive encephalopathy. Vascular dementia: pathogenesis, clinical picture, diagnostics (neuropsychological research, neuroimaging research methods), prevention; differential diagnosis with Alzheimer's disease. Spinal cord blood supply. Spinal circulation disorders.**	**1**	**2**	**2**	**5**	**OQ, TC, ST, WR, supervision of patients**
13	**VII**	**Vertebral neurological disorders and other musculoskeletal pathologies. Biomechanics of the spine, the function of intervertebral discs and facet joints. Spinal osteochondrosis: discopathy, compression and reflex syndromes. Lumboischialgia and cervicobrachialgia. Myofascial syndrome. Fibromyalgia Clinic and pathogenetic treatment. Indications for surgical treatment. Differential diagnosis for pain in the back and extremities: epidural abscess, primary and metastatic tumors of the spine, dyshormonal**	**0,5**	**2**	**1**	**3, 5**	**OQ, TC, ST, WR, supervision of patients**

		spondylopathy, reflected pain in diseases of internal organs, ankylosing spondylitis. Paraclinical methods in the diagnosis of back pain: spondylography, CT and MRI of the spine.					
14	**VII**	**Movement disorders (parkinsonism, muscular dystonia, chorea, tics). Muscular dystopia: clinical picture, diagnosis, treatment. Tourette's syndrome: clinical picture, diagnosis, treatment. Minor chorea and Huntington's chorea: clinic, diagnosis, treatment. Parkinson's disease: clinical picture, diagnosis, treatment.**	**0,5**	**2**	**1**	**3, 5**	**OQ, TC, ST, WR, supervision of patients**
15	**VII**	**Multiple sclerosis. Multiple sclerosis: pathogenesis, clinical picture, diagnosis, course types. Paraclinical research methods in the diagnosis of multiple sclerosis: MRI of the brain and spinal cord, study of the evoked potentials of the brain, liquorological studies. Treatment.**	**0,5**	**1**	**1**	**2, 5**	**OQ, TC, ST, WR, supervision of patients**
16	**VII**	**Infectious diseases of the nervous system. Encephalitis: classification, etiology, clinical picture, diagnosis, treatment. epetic encephalitis. Tick-borne encephalitis. Parainfectious encephalitis with measles, chickenpox, rubella. Rheumatic lesions of the nervous system, chorea minor. Meningitis: classification, etiology, clinical picture, diagnosis, treatment. Primary and secondary purulent meningitis: meningococcal, pneumococcal, caused by Haemophilus influenzae. Serous meningitis: tuberculous and viral meningitis. Poliomyelitis, features of the modern course of poliomyelitis, poliomyelitis-like diseases. Brain abscess, spinal epidural abscess. Shingles (herpes). Diphtheria polyneuropathy. Botulism. Neurosyphilis. Damage to the nervous system in AIDS. Paraclinical methods in the diagnosis of infectious diseases of the nervous system: liquorological and serological studies, CT and MRI of the head.**	**1**	**5**	**2**	**8**	**OQ, TC, ST, WR, supervision of patients**
17	**VII**	**Tumors of the nervous system. Brain tumors: classification, clinical presentation, diagnosis; sub- and supratentorial tumors, features of the course. Spinal cord tumors: clinical picture, diagnosis; extra- and intramedullary tumors of the spinal cord. Paraclinical methods. Indications and principles of surgical interventions for tumors of the brain and spinal cord.**	**1**	**2**	**2**	**5**	**OQ, TC, ST, WR, supervision of patients**

18	**VII**	**Cranial and spinal injuries. Classification of closed craniocerebral injury. Light, medium and severe traumatic brain injury. Brain concussion. Brain contusion. Intracranial traumatic hematomas. Medical tactics. Consequences of traumatic brain injury. Post-concussion syndrome. Spinal cord injury: pathogenesis, clinical picture, diagnostics, medical tactics. Rehabilitation of patients with spinal trauma.**	**1**	**2**	**1**	**4**	**OQ, TC, ST, WR, supervision of patients**
19	**VII**	**Paroxysmal disorders of consciousness - epilepsy and fainting. Classification of epilepsy and epileptic seizures. Etiology and pathogenesis of epilepsy and epileptic syndrome. Epilepsy treatment. Status epilepticus: clinical picture, pathogenesis, treatment. Neurogenic syncope - classification, pathogenesis, diagnosis, treatment, prevention.**	**0,5**	**2**	**1**	**3,5**	**OQ, TC, ST, WR, supervision of patients**
20	**VII**	**Neuroses. Vegetative dystonia. Neuroses: etiology, pathogenesis, classification, clinical picture, diagnosis, treatment. Vegetative dystonia, vegetative crisis (panic attack): etiology, pathogenesis, clinical picture, diagnosis**	**0,5**	**1**	**1**	**2,5**	**OQ, TC, ST, WR, supervision of patients**
21	**VII**	**Headaches and facial pains. Classification of headaches. Headache pathogenesis. Evaluation of patients with headache. Migraine: classification, pathogenesis, clinical forms, course, diagnosis. Treatment of a migraine attack. Prevention of migraine attacks. Sheaf head disease: clinical picture, diagnosis, treatment. Tension headache: pathogenesis, diagnosis, treatment. Trigeminal neuralgia: clinical picture, treatment. - Facial sympathetic. Facial myofascial syndromes.**	**2**	**6**	**3**	**11**	**OQ, TC, ST, WR, supervision of patients**
Total			**18**	**60**	**30**	**108**	

6. The list of educational and methodological support for independent work of students in the discipline

№/п	Semester No.	Name of educational and methodological development
1	**VII**	Methodical development for self-training of students in Neurology
2	**VII**	Methodical development for independent extracurricular work in private neurology
3	**VII**	Lecture material for self-preparation
4	**VII**	Situational tasks and tests in Neurology for independent work

7. Evaluation materials for intermediate certification of students in practice

№/ п	List of competenci	Semeste r	Indicator (s)	Evaluation criterion (s)	Grading scale	Evaluation materials

	es		Evaluations			
1	**2**	**3**	**4**	**5**	**6**	**7**
1	OPC-4 OPC-7 OPC-9 PC-5 PC-6	VII	See the standard for assessing the quality of education, approved. By order of the Federal State Budgetary Educational Institution of Higher Education of the SOGMA of the Ministry of Health of Russia dated July 10, 2018, No. 264 / o	See the standard for assessing the quality of education, approved. By order of the Federal State Budgetary Educational Institution of Higher Education of the SOGMA of the Ministry of Health of Russia dated July 10, 2018, No. 264 / o	See the standard for assessing the quality of education, approved. By order of the Federal State Budgetary Educational Institution of Higher Education of the SOGMA of the Ministry of Health of Russia dated July 10, 2018, No. 264 / o	Exam tickets for the exam, test assignments, control tasks

8. The list of basic and additional educational literature necessary for mastering the discipline

№ №	Name	Author(s)	Year, place of publication	Number of copies		Site name
				in library	At the department	Site Link
1	2	3	4	5	6	7
Main literature						
1.	Neurology and neurosurgery : textbook: in 2 vol. Vol.1. Neurology	Gusev E. I.	Moscow : GEOTAR-Media, 2023	5		«Консультант студента» https://www.studentlibrary.ru./book/ISB

						N97859704 73719.html
2.	Неврология и нейрохирургия в 2 т.: учебник. Т.2. Нейрохирургия	Гусев Е.И., Коновалов А.Н., Скворцова В.И.	М. : ГЭОТАР-Медиа, 2010, 2015	100		«Консультант студента» http://www.studmedlib.ru/book/ISBN9785970429020.html
3.	Топическая диагностика заболеваний нервной системы: руководство для врачей	Скоромец А.А., Скоромец Т. А.	СПб. : Политехника, 2002, 2007, 2012	3 1		«Консультант студента» http://www.studmedlib.ru/book/ISBN9785732510096.html
4.	Топическая диагностика заболеваний нервной системы : краткое руководство	Триумфов А. В.	М. : МЕДпресс-информ, 2000, 2009, 2015	85 4 50		
5.	Детская неврология : учебник в 2 т. Т.1	Петрухин А. С.	М. : ГЭОТАР-Медиа, 2012	45		
6.	Детская неврология : учебник в 2 т. Т.2	Петрухин А. С.	М. : ГЭОТАР-Медиа, 2012	45		
7.	Руководство по детской неврологии	ред. В.И. Гузеева	СПб. : Фолиант, 2004	30		
additional literature						
1.	Неврология: национальное руководство	ред. Е. И. Гусев	М. : ГЭОТАР-Медиа, 2010	2		
2.	Неврология и	ред. Е. И.	М. :	16		

	нейрохирургия. Клинические рекомендации	Гусев	ГЭОТАР-Медиа, 2007			
3.	Неврология: руководство для врачей	Карлов В.А.	М. : МИА, 1999	2		
4.	Неврологические симптомы, синдромы и болезни: энциклопедический справочник	Гусев Е.И., Никифоров А.С	М. : ГЭОТАР-Медиа, 2006	3		
5.	Немедикаментозные методы лечения и образ жизни при рассеянном склерозе	Бойко А.Н. Гусева М.Е. Сиверцева С. А.	М. : ГЭОТАР-Медиа, 2015	3		
6.	Церебральный инсульт: нейровизуализация в диагностике и оценке эффективности различных методов лечения. Атлас исследований	Новикова Л.Б., Сайфуллина Э.И., Скоромец А.А.	М. : ГЭОТАР-Медиа, 2012			«Консультант студента» http://www.studmedlib.ru/book/ISBN9785970421871.html
7.	Рассеянный склероз	Т. Е. Шмидт, Н. Н. Яхно	М. : Медицина, 2003, 2016	2		
8.	Нейрореаниматология : практическое руководство	В. В. Крылов и др.	М. : ГЭОТАР-Медиа, 2016	1		
9.	Нейрореанимация. Практическое руководство	Крылов В.В., Петриков С.С.	М. : ГЭОТАР-Медиа, 2010			«Консультант студента» http://www.studmedlib.ru/book/ISBN9785970416655.html
10.	Сосудистый	Левин О.С.	М. :	1		

	паркинсонизм		МЕДпресс-информ, 2015			
11.	Общая неврология : учеб. пособие	Никифоров А. С., Гусев Е. И.	М. : ГЭОТАР-Медиа, 2007, 2013	7		«Консультант студента» http://www.studmedlib.ru/book/ISBN9785970426616.html
12.	Частная неврология : учеб. пособие	Никифоров А. С., Гусев Е. И.	М. : ГЭОТАР-Медиа, 2007	7		
13.	Нервные болезни : учеб. пособие	Скоромец А.А., Скоромец А.П., Скоромец Т.А.	М. : МЕДпресс-информ, 2010	3		
14.	Магнитно-резонансная томография: руководство для врачей	ред. Г. Е. Труфанов	СПб. : Фолиант, 2007	1		
15.	Жизнь после инсульта : руководство для врачей	ред. В. И. Скворцова	М. : ГЭОТАР-Медиа, 2008	1		
16.	Ситуационные задачи и тесты по пропедевтике нервных болезней	Ф. К. Дзугаева и др.	Владикавказ, 2010	18		
17.	Практическая неврология : руководство для врачей	ред. А. С. Кадыков	М. : ГЭОТАР-Медиа, 2011	1		«Консультант студента» http://www.studmedlib.ru/book/ISBN9785970417119.html
18.	Неврологические осложнения остеохондроза	Никифоров А.С., Авакян Г.Н.,	М. : ГЭОТАР-Медиа,			«Консультант студента» http://www.st

	позвоночника	Мендель О.И.	2015			udmedlib.ru/book/ISBN9785970433331.html
19.	Боковой амиотрофический склероз	ред. И.А. Завалишин	М. : ГЭОТАР-Медиа, 2009			«Консультант студента» http://www.studmedlib.ru/book/ISBN9785970412572.html
20.	Рациональная фармакотерапия в неврологии	ред. Е. И. Гусев	М. : Литтерра, 2014			«Консультант студента» http://www.studmedlib.ru/book/ISBN9785423501150.html
21.	Реабилитация в неврологии	Епифанов В.А., Епифанов А.В.	М. : ГЭОТАР-Медиа, 2015	1		«Консультант студента» http://www.studmedlib.ru/book/ISBN9785970434420.html
22.	Миастения и миастенические синдромы	Санадзе А.Г.	М. : Литтерра, 2012			«Консультант студента» http://www.studmedlib.ru/book/ISBN9785423500542.html
23.	Эпилепсия и ее лечение	Гусев Е.И., Авакян Г.Н., Никифоров А.С.	М. : ГЭОТАР-Медиа, 2014			«Консультант студента» http://www.studmedlib.ru/book/ISBN9785970431276.html
24.	Туннельные компрессионно-ишемические моно- и	А. А. Скоромец	М. : ГЭОТАР-Медиа,			«Консультант студента»

	мультиневропатии	и др.	2013			http://www.studmedlib.ru/book/ISBN9785970423660.html
25.	Руководство к практическим занятиям по топической диагностике заболеваний нервной системы: учеб.-метод. пособие	ред. В.И. Скворцова	М. : Литтерра, 2012			«Консультант студента» http://www.studmedlib.ru/book/ISBN9785423500948.html
26.	Хронические нейроинфекции	ред. И.А. Завалишин	М. : ГЭОТАР-Медиа, 2011			«Консультант студента» http://www.studmedlib.ru/book/ISBN9785970418987.html
27.	Учебно-методическое пособие по написанию учебной истории болезни по курсу неврологии и нейрохирургии		Владикавказ, 2008	28		
28.	Ситуационные задачи и тесты по пропедевтике нервных болезней	Ф.К. Дзугаева и др.	Владикавказ, 2010	18		

9. The list of resources of the information and telecommunication network "Internet" necessary for mastering the discipline

1. http://www.elibrary.ru – scientific electronic library, search is carried out by the thematic section, the name of the journal, the author. Contains a catalog of Russian-language and foreign publications.

2. http://www.studmedlib.ru – electronic library of the medical university "Student Consultant".

3. ru.wikipedia.org – search in articles of the free universal encyclopedia, written in Russian. Selected articles, interesting facts, the current day in history, links to thematic portals and related projects.

4. https://pubmed.ncbi.nlm.nih.gov- An English-language textual database of medical and biological publications created by the National Center for Biotechnology Information (NCBI). You can get acquainted with the latest scientific works of famous authors, find new useful information for self-development, not only in the neurological direction, but also in other specialties.

5. Cyberleninka.ru- Scientific articles, new information, monographs on all topics, useful data for students.

10. Methodical instructions for students on mastering the discipline

Training consists of classroom studies, including a lecture course and practical exercises, and independent work. When studying disciplines, use the basic and additional literature and master practical skills. In accordance with the requirements of FGOSVO, active and interactive forms of conducting classes are widely used in the educational process - business and role-playing games. The proportion of classes conducted in interactive forms is at least 5-10% of classroom lessons.

Independent work of students implies preparation for practical classes and includes the study of basic and additional literature, the implementation of assignments for extracurricular independent work, writing essays, drawing up monothematic folders, tables.

Work with educational literature is considered as a type of educational work and is carried out within the hours allotted for its study (in the CDS section). Each student is provided with access to the library funds of the Academy and departments. For each section of the discipline, guidelines for students and guidelines for teachers have been developed. During the study of the discipline, students independently examine the patient and draw up medical documentation and submit an essay on the topic, which contributes to the formation of clinical thinking and practical skills (abilities).

The student's work in a group forms a sense of collectivism and sociability. Teaching students helps them develop the skills of communicating with the patient, taking into account the ethical and deontological characteristics of pathology and patients. Independent work with patients contributes to the formation of professional behavior, accuracy, and discipline.

The initial level of students' knowledge is determined by testing, the current control of mastering the subject is determined by oral questioning during classes, during clinical analyzes, when solving typical situational tasks. In the process of studying the academic discipline, intermediate control of knowledge is carried out using test control, testing of practical skills, solving situational problems, interviews on questions, and at the end an exam in neurology is held in the VII semester.

11. The list of information technologies used in the implementation of the educational process in the discipline

Semester	Type of occupation L, PL, IW	Educational technologies used (active, interactive)	% classes in interactive form	Scroll software

VII	Lecture	Multimedia lectures and videos, discussions	5 %	Microsoft Office, Power Point; Windows Media Player, Acrobat Reader; Internet Explorer
VII	Practical lesson	A set of questions and tasks for a practical lesson, a set of situational tasks, a set of case histories for the analysis of clinical cases. Videos of operations.	5 %-10%	Microsoft Office, Power Point; Windows Media Player, Acrobat Reader; Internet Explorer
VII	Independent work	Online resources, questions and assignments for self-study	-	Microsoft Office, Internet Explorer Mozilla Firefox

12. Description of the material and technical base necessary for the implementation of the educational process in the discipline

№/п	**Equipment identification**	**Quantity**	**Technical condition**
1	**2**	**3**	**4**
Special equipment			
1.	Thematic set of illustrations for sections of the discipline	1 copy	satisfactory
2.	Sets of multimedia visual materials for various sections subject	1 set	satisfactory
3.	Posters, slides	13	satisfactory
4.	Audio lectures	1 disk	satisfactory
Dummies			
5.	Cervical and lumbosacral spine	3	satisfactory
6.	Brain and nerves of the extremities	2	satisfactory
7.	A computer	1	satisfactory
8.	a printer	1	satisfactory

13. Conducting educational activities using e-learning and distance learning technologies

In the context of the introduction of restrictive measures (quarantine) associated with an unfavorable epidemiological situation, the threat of the spread of a new coronavirus infection

and other force majeure events that do not allow full-time training, it is possible to study this discipline or part of it using e-learning and distance educational technologies. Teaching the discipline in the above situations will be carried out through the development of an electronic course with access to video lectures and interactive course materials: presentations, articles, additional materials, tests and various tasks. When conducting training sessions, monitoring progress, as well as intermediate certification of students, platforms of the electronic information and educational environment of the academy and / or other e-learning systems recommended for use in the academy, such as Moodle, Zoom, Webinar and others, can be used. Lectures can be presented in the form of audio, video files, "live lectures". Conducting seminars and practical classes is possible in on-line mode both in synchronous and asynchronous modes. Seminars can be held in the form of web conferences.