JSC "SOUTH KAZAKHSTAN MEDICAL ACADEMY"

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"31" 12 2024

SOUTH KAZAKHSTAN
MEDICAL
ACADEMY

EDUCATIONAL RESIDENCY PROGRAM
7R01137
"NEUROLOGY (ADULT, CHILDREN)»

2024, Shymkent

The educational residency program "Neurology (adult, children)" was developed on the basis of the order of the Minister of Health of the Republic of Kazakhstan dated January 25, 2024 No. 46 "On approval of professional standards in the field of healthcare."

Post	Full name	Signature
Developed by		
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Minutes of the department meeting № 6 from «15» 05 2024y.		
Discussed at the meeting of the Residency educational programs committee Chairman of the educational programs committee Protocol № 5 from "26" " 01 " 2024 y.	Kauyzbai Zh.A.	
Approved at the Clinical Council Chairman of the Clinical Council Protocol № 8 from "29" " 01 " 2024 y.	Kauyzbai Zh.A.	
Agreed by the First Vice-Rector of JSC SKMA, First Vice-Rector of JSC SKMA Protocol № ___ from "30" " 01 " 2024 y.	Esirkepov M.M.	
Approved by the Academic Council Protocol № 14 from "31" " 01 " 2024 y.		

Educational program passport

1. The mission of the educational program is to be recognized as a leader in the field of training competitive personnel, meeting the needs of a resident doctor in achieving learning outcomes, providing the healthcare system and society with highly qualified neurologists.

2. The purpose of the educational program is to train doctors who have the professional abilities of a neurologist and independently provide specialized highly qualified neurological care to the population regardless of age and gender.

Objectives of the educational program:

- in-depth mastering of theoretical issues of neurology;
- improvement of practical skills according to modern principles of diagnosis, treatment, interpretation of the results of the examination from the standpoint of evidence-based medicine.
- independent implementation of qualified medical care for various conditions and diseases.

3. Justification of the educational program:

Nervous diseases are one of the most complex branches of medicine, in which the fact that the clinical picture of many diseases has changed over time, the emergence of more advanced diagnostic methods and, of course, the treatment of neurological diseases, which in some cases have become diametrically opposed to traditional schemes, is especially obvious.

The large group of clinical neurologists in our country is constantly being replenished with young doctors who need to master the logic of clinical thinking of a neurologist, based on anatomical and physiological data about the nervous system. With a clear understanding of the anatomy and physiology of the nervous system, you can become a qualified clinician - a neurologist.

Residency in neurology involves a more in-depth study on the systemic-functional principle of illuminating anatomical and physiological information about the nervous system, training in techniques for identifying individual symptoms (reflexes, tests, tests), in the light of new neurophysiological data, consideration of the organizations of brain function on a systemic principle, the values of neurotransmitters and neuropeptides, introducing modern methods for additional research of neurological patients, including radionuclide methods, computed tomography nuclear magnetic resonance, as well as studying the problems most often encountered in the practice of a neurologist - vascular diseases of the nervous system, infectious and inflammatory diseases, epilepsy and other convulsive syndromes, diseases of the peripheral nervous system.

Pediatric neurology is a branch of medicine that studies the mechanisms of normal and pathological development of the nervous system from birth to 18 years. A pediatric neurologist deals with the prevention, diagnosis and treatment of neurological diseases that occur in childhood.

This is a fairly "young" specialty, which originated at the intersection of several sciences - neurology, pediatrics, neonatology, genetics, psychology and neurosurgery. It is the neurologist who evaluates psychomotor development at different age periods, evaluates the state of the brain and other parts of the nervous system.

4. Professional standard on the basis of which the educational program is developed: Professional standard "Neurology (adults, children)".
According to the Order of the Minister of Health dated January 25, 2024 No. 46 "On approval of professional standards in the field of healthcare."

5. Area of professional activity. Healthcare.

6. Objects of professional activity. Medical organizations providing inpatient and outpatient care, healthcare systems of the Republic of Kazakhstan.

Information about the educational program

№	Field name	Note
1	Registration number	7R09100107
2	Code and classification of the field of education	7R01 Healthcare (medicine)
3	Code and classification of training areas	7R011 Healthcare
4	Group of educational programs	R037 Neurology (adult, children)
5	Name of the educational program	7R01137 Neurology (adult, children) (residency)
6	Type of EP	Updated EP
7	Level according to the international standard classification of education	7
8	Level according to the national qualifications framework	7
9	Level according to the industry qualifications framework	7
10	Distinctive features of the EP	No
	Partner higher education institution(СОП) Partner higher education institution (ДДОП)	
11	list of competencies	**FC1** Patient supervision: able to formulate a clinical diagnosis, prescribe a treatment plan and evaluate its effectiveness based on evidence-based practice at all levels of medical care for patients with diseases of the nervous system. **FC2** Communication and Collaboration: able to effectively interact with the neurological patient, his environment, healthcare professionals in order to achieve the best results for the patient **FC3** Safety and Quality: able to assess risks and use the most effective methods to ensure a high level of safety and quality of medical neurological care. **FC4** Public health: He is able to act within the legal and organizational framework of the healthcare system of the Republic of Kazakhstan in the specialty "Neurology, including children's", provide basic assistance in emergency situations, work as part of interprofessional teams to implement the policy of strengthening the health of the nation **FC5** Research: able to formulate adequate research questions, critically evaluate professional literature, effectively use international databases in their daily activities, participate in the work of the research team

		FC6 Training and development: he is able to study independently and train other members of a professional team, actively participate in discussions, conferences and other forms of continuous professional development in the field of neurology.
12	Learning outcomes	**LO1.** Diagnoses a clinical neurological diagnosis, differentiates the diagnosis, prescribes a treatment plan and evaluates its effectiveness based on evidence-based practice at the level of inpatient care for adult patients with neurological diseases. **LO2.** Effectively interacts with the patient, his environment - relatives, healthcare professionals, participates in consultations, and advises patients with intercurrent diseases. **LO3.** Assess risks and uses the most effective methods (MRI, CT, EEG, ENMG, evoked potential studies, PET, ultrasound) to ensure a high level of safety and quality of medical care for patients with disorders of the basic functions of the nervous system. **LO4.** Operates within the legal and organizational framework of the healthcare system of the Republic of Kazakhstan in the specialty "Neurology (adult, pediatric)", provides basic assistance in emergency situations, works as part of interprofessional teams to implement policies to improve the health of the nation. **LO5.** Formulates adequate research questions, critically evaluates professional neurology literature, effectively uses international databases (SCOPUS, PubMed, Medlin) in his daily activities, and participates in the work of the research team. **LO6.** Learns independently and trains other members of the professional team, actively participates in discussions, international, domestic conferences and other forms of continuous professional development in the field of neurology.
13	Form of training	Full - time If necessary with the use of digital technologies
14	Language of instruction	Kazakh and Russian
15	Volume of credits	Total 140 credits Of these: 1. Theoretical training – 138 credits; 2. Intermediate certification 3. Final certification – 2 credits.
16	Duration of training	2 years
17	Assigned qualification	Doctor- neurologist (adults, children)
18	Availability of an appendix to the license for the direction of training	KZ 22BFA00167288

19	Availability of EP accreditation Yes	Yes
	Name of accreditation institution	HAAP
	Validity period of accreditation	Certificate № AB 3512, 05/27/2021 - 05/26/2026
20	Information about disciplines	Appendix 1.2

Appendix 1.1

Matrix of correlation of learning outcomes according to the educational program as a whole with the competencies being formed

	LO1	LO2	LO3	LO4	LO5	LO6
К1	+	+	+			
К2				+		
К3			+		+	
К4				+		
К5					+	
К6						+

Appendix 1.2

Matrix of achievability of competencies/learning outcomes

№	Matrix of achievability of competencies/ learning outcomes Name of the discipline	Short description	Cycle (DB, PD)	Component (UC, RC, OC)	Number of credits	Formed learning outcomes
1	Neurology in the hospital, adult	Topical diagnostics of diseases of the nervous system in adults. Neuroinfectious diseases of the brain and spinal cord. Hereditary diseases with damage to the nervous system. Prion diseases. Diseases of the peripheral nervous system in adults. Vertebrogenic diseases of the nervous system. Degenerative diseases. Demyelinating diseases of the nervous system. Vascular diseases of the brain and spinal cord in adults. Neurological disorders in somatic diseases.	PD	UC	54	LO1 LO2 LO3 LO4
2	Neurology in the hospital, children's	Delayed psychomotor development in children. Minimal brain dysfunction in children. Diseases	PD			

		of the nervous system that occur with impaired breathing and swallowing. Congenital anomalies of the development of the brain and spinal cord. Perinatal lesions of the nervous system and its consequences. Epilepsy in children. Orphan diseases of the nervous system.		UC	30	LO1 LO2 LO3 LO4
3	Instrumental research methods in neurology	Methods of studying brain biopotentials – electroencephalography, echo-encephalography and interpretation of the results of the study. The technique of electroneuromyographic research and interpretation of the results. Ultrasound Dopplerography of extracranial and brachiocephalic vessels is a method of investigation and interpretation of the results. Genodiagnostics in neurology.	PD	UC	8	LO1 LO2 LO3
4	Emergency conditions in neurology and neuro-resuscitation	Comatose states in adults and children. Epileptic status. Acute neurological pathology in poisoning. Syndrome of increased intracranial pressure, brain edema. Brain death. Intensive therapy for neuroinfectious diseases. Cerebral and spinal strokes. Myasthenic crisis. Cholinergic crisis. Medical tactics in acute respiratory failure. Emergency dehydration in pediatric neurology. Craniocerebral hypothermia. Sympathotonic collapse.	PD	UC	12	LO1 LO2 LO3 LO4
5	Outpatient neurology, adult	Features of medical examination of patients with inflammatory diseases of the nervous system, diseases of the peripheral nervous system, vascular diseases of the brain, traumatic lesions of the central nervous system, degenerative and hereditary diseases of the nervous system. Neuroses. Syndrome of vegetative dystonia. Vegetative paroxysms.	PD	UC	10	LO1 LO2 LO3 LO5
6	Outpatient neurology, children	Features of medical examination of sick children with the consequences of antenatal, neonatal, perinatal pathology. Headaches in children. Vegetative crises. Neurotic	PD	UC	6	LO1 LO2 LO3

		manifestations in children: stuttering, tics, sleep disorders. Neurotic appetite disorders, neurotic enuresis, encopresis.				LO5
7	Neurorehabilitation	The main regulatory documents of the Ministry of Health of the Republic of Kazakhstan on rehabilitation in adults and children. Assessment of the functional state and vital activity. Kinesiotherapy. Therapeutic gymnastics. Manual therapy. Vibration stimulation. Position treatment, breathing exercises. Physical therapy. Therapeutic magnetic and electroneurostimulation. Interstitial electrical stimulation. Drug blockades and pharmaco–acupuncture. Speech rehabilitation after stroke in various types of aphasia. Psychological and social rehabilitation.	PD	UC	6	LO1 LO2 LO3 LO5
8	Visualization research methods in neurology	The importance of visual research methods in the diagnosis of nervous diseases. Visual diagnostics of neurological diseases in children and adolescents. Radiation diagnostics of vascular and hereditary diseases. Visualization of the musculoskeletal system. Magnetic resonance imaging, brain and spinal cord, cerebral angiography – interpretation of the results of the study. Computed tomography of the brain, spinal cord – interpretation of the results of the study.	PD	UC	8	LO3 LO4 LO5 LO6
9	The problem of acute disorders of cerebral circulation: diagnosis, treatment	Classification of vascular diseases of the brain. Current etiological factors, pathogenesis and clinical manifestations of acute disorders of cerebral circulation. Modern diagnostic criteria, principles of its emergency therapy. Primary and secondary prevention of strokes, early and late rehabilitation of stroke patients. Tactical and therapeutic mistakes made in inpatient and outpatient settings.	PD	OC	4	LO1 LO2 LO3 LO4 LO5 LO6
10	Current aspects of	Etiology, pathomorphology, pathogenesis, research methods.				

	differential diagnosis, treatment and issues of social rehabilitation in epilepsy	Classification of epilepsy and epileptic seizures. Clinic, diagnostics, differential diagnostics. Types of epilepsy and epileptic syndromes. Epilepsy in pregnant women. Non-epileptic seizures. Modern aspects of therapy of patients with epilepsy.	PD	OC	4	LO1 LO2 LO3 LO4 LO5 LO6
11	Geriatric aspects of diseases of the nervous system	Morphophysiological characteristics of aging of the nervous system. Features of examination of elderly and senile patients. Features of the course of neurological diseases in the elderly and senile age. Features of pharmacotherapy of elderly and senile patients. Falls. Vegetative disorders. Syncopal states. Pain syndromes. Sleep and wakefulness disorders in elderly and senile patients. Vitamin B12 deficiency.	PD	OC	4	LO1 LO2 LO3 LO4 LO5 LO6
12	Diseases with a predominant lesion of the extrapyramidal system	Modern aspects of etiology, pathogenesis, clinical manifestations, therapeutic approaches of Parkinson's disease, progressive supranuclear paralysis, multisystem atrophy, coritic-basal degeneration, temora, dystonia, chorea, myoclonus, stratl syndrome, tics, Tourette syndrome, hepatolenticular degeneration, Gallervorden-Spatz disease, calcification of basal ganglia.	PD	OC	4	LO1 LO2 LO3 LO4 LO5 LO6

The matrix of achievement of LO by various methods of training and assessment methods

The final results of the EP training	Assessment methods	Teaching and learning methods used
LO1. Patient supervision: able to formulate a clinical diagnosis, prescribe a treatment plan and evaluate its effectiveness based on evidence-based practice at all levels of medical care for patients with neurological diseases.	Oral questioning, analysis of problems. Mini clinical exam. Checklist "Score 3600" for residents. Presentations.	Literature review. Supervision of neurological patients, work with medical documentation.
LO 2. Communication and collaboration: able to effectively interact with the patient, his environment, healthcare professionals in	Oral questioning, analysis of problems. Mini clinical exam.	Literature review. Supervision of neurological patients,

order to achieve the best results for the patient.	Checklist "Score 3600" for residents. Presentations.	work with medical documentation.
LO3. Safety and quality: he is able to assess risks and use the most effective methods to ensure a high level of safety and quality of medical care for patients with disorders of the basic functions of the nervous system.	Oral questioning, analysis of problems. Mini clinical exam. Checklist "Score 3600" for residents. Presentations.	Literature review. Supervision of neurological patients, work with medical documentation.
LO 4.Public health: He is able to act within the legal and organizational framework of the healthcare system of the Republic of Kazakhstan in the specialty "Neurology, including children's ", provide basic assistance in emergency situations, work as part of interprofessional teams to implement the policy of strengthening the health of the nation.	Oral questioning, analysis of problems. Mini clinical exam. Checklist "Score 3600" for residents. Presentations.	Literature review. Supervision of neurological patients, work with medical documentation.
LO5. Researches: he is able to formulate adequate research questions, critically evaluate professional literature on neurology, effectively use international databases in his daily activities, participate in the work of the research team.	Oral questioning, analysis of problems. Mini clinical exam. Checklist "Score 3600" for residents. Presentations. Portfolio .	Literature review. Supervision of neurological patients, work with medical documentation.
LO6. Training and development: he is able to study independently and train other members of a professional team, actively participate in discussions, conferences and other forms of continuous professional development in the field of neurology.	Oral questioning, analysis of problems. Mini clinical exam. Checklist "Score 3600" for residents. Presentations. Portfolio.	Literature review. Supervision of neurological patients, work with medical documentation.

Work plan for the entire training period

Cycle lisciplin s/		Discipline code	Name of the discipline/ modules/	Amount of credits	General hours/	classr om	RIC RTICM	RIC /RTIC/	1 year of study	2 year of study	The form control/	FT
PD		**CYCLE OF PROFILING DISCIPLINES**		**138**	**4140**							
		Mandatory component		**134**	**4020**							
PD/	UC/	R-NHA	Neurology in the hospital, adult	54	1620	324	1134	162	30	24	Exam	
		R-NHC	Neurology in the hospital,children	30	900	180	630	90	18	12	Exam	
		R-IRMN	Instrumental research methods in neurology	8	240	48	168	24	8		Exam	
		R-ECNN	Emergency conditions in neurology and neuroresuscitation	12	360	72	252	36		12	Exam	
		R-ACNA	Ambulatory-clinic neurology, adult	10	300	60	210	30		10	Exam	
		R-ACNC	Ambulatory-clinic neurology, children	6	180	36	126	18		6	Exam	
		R-NR	Neurorehabilitation	6	180	36	126	18	6		Exam	

		R-VRMN	Visualization research methods in neurology	8	240	48	168	24	8		Exam	
		Optional component		**4**	**120**	**24**	**84**	**12**		**4**		
	OC	R-CADDTSRE	Current aspects of differential diagnosis, treatment and social rehabilitation in epilepsy/	4	120	24	84	12		4	Exam	
		R-PADCCDT	The problem of acute disorders of cerebral circulation: diagnosis, treatment/									
		R-ZPPES	Geriatric aspects of diseases of the nervous system/									
		R-DPLES	Diseases with a predominant lesion of the extrapyramidal system									
		TOTAL		**138**	**4140**	**828**	**289**	**414**				
IC		**INTERMEDIATE CERTIFICATION**										
FE		**FINAL EXAMINATION**		**2**	**60**					**2**		60
		TOTAL		**140**	**4200**	**828**	**289**	**414**	70	70		60