

**MINISTRY OF HEALTH OF UKRAINE
ODESSA NATIONAL MEDICAL UNIVERSITY**

Department of Pediatrics No. 1



APPROVE

Acting pro-rector for scientific and educational work

prof.

Svitlana KOTIUZHYNKA

" 01

09

2022

**EDUCATIONAL PROGRAM OF SELECTIVE DISCIPLINE
"Emergencies in pediatric neurology"**

Higher education level: second (master's)

Field of knowledge: 22 "Health Care"

Specialty: 222 "Medicine"

Educational and professional program: Medicine

The working program is compiled on the basis of the educational and professional program "Medicine", the training of specialists of the second (master's) level of higher education in the specialty 222 "Medicine" of the field of knowledge 22 "Health care", approved by the Academic Council of ONMedU, dated Jun 23, 2022, protocol No. 9.

Developers: head of the department, Corresponding Member of NAMS of Ukraine, DSc, Prof. Aryaev M.L., head teacher of the department, PhD, assoc. of professor Kaplina L. E., PhD, assoc. of professor Senkivska L.I., assistant of the department, PhD Usenko D.V.

The working program was approved at the meeting of the Department of Pediatrics No. 1
Protocol No. 21 dated June 29, 2022

Head of the department, Corresponding Member of NAMS of Ukraine,
DSc, Prof.

Mykola ARYAYEV

Agreed with the guarantor of the EPP

(signature)

(Valeria MARICHEREDA)
(Name SURNAME)

The program was approved at the meeting of the subject cycle commission for pediatric disciplines of ONMedU

Protocol No. 6 dated "30" 06 2022 y.

/ Head of the subject cycle methodical commission for pediatric disciplines, professor

(Natalia KOTOVA)

(signature)

(Name SURNAME)

(signature)

(Name SURNAME)

Reviewed and approved at the meeting of the Department of Pediatrics No. 1

Protocol No. dated " " 20 y.

Head of the department

(Mykola ARYAYEV)

(signature)

(Name SURNAME)

Reviewed and approved at the meeting of the Department of Pediatrics No. 1

Protocol No. dated " " 20 y.

Head of the department

(Mykola ARYAYEV)

(signature)

(Name SURNAME)

1. The description of the selective educational discipline:

The name of indicators	Field of knowledge, specialty, specialization, level of higher education	Characteristic of the educational discipline
Total amount: Credits: 1.5 Hours: 45 Content modules: 1	Field of knowledge 22 "Health Care"	Full-time education <i>Selective discipline</i>
	Specialty 222 "Medicine"	<i>Year of education: 6</i>
		<i>Semester XI - XII</i>
		<i>Lectures (0 hours)</i>
		<i>Seminars (16 hours)</i>
	Specialization doctor	<i>Practical (0 hours)</i>
		<i>Laboratory (0 hours)</i>
		<i>Self-make work (29 hours)</i>
	Higher education level second (master's)	<i>including individual tasks (0 hours)</i>
		<i>Form of final control (according to the curriculum) – test.</i>

1. The purpose and tasks of the educational discipline

Purpose: The application's acquisition of the higher education of additional knowledge and mastery of professional competences in providing emergency care to children, based on the competences obtained during the study of previous disciplines.

Tasks:

1. Formation of skills and communication skills with a sick child or her parents.
2. Improving the skills of justifying a clinical diagnosis, making a plan for laboratory and instrumental research.
3. Mastering the ability to determine the tactics of providing emergency care for neurological diseases in children.

The process of studying the discipline is aimed at forming elements of the following competencies:

General (GC):

- GC1 – Ability to abstract thinking, analysis and synthesis.
- GC2 – Ability to learn and master modern knowledge.
- GC3 – Ability to apply knowledge in practical situations.
- GC4 – Knowledge and understanding of the subject area and understanding of professional activity.
- GC5 – Ability to adapt and act in a new situation.
- GC6 – Ability to make reasonable decisions.
- GC7 – Ability to work in a team.
- GC8 – Ability to interpersonal interaction.
- GC10 – Ability to use information and communication technologies.
- GC11 – Ability to search, process and analyze information from various sources.
- GC12 – Determination and perseverance regarding the assigned tasks and assumed responsibilities.
- GC13 – Awareness of equal opportunities and gender issues.
- GC14 – Ability to realize one's rights and responsibilities as a member of society, to realize the values of public (free democratic) society and the need for its sustainable development, the rule of law, the rights and freedoms of a person and a citizen in Ukraine.

- GC15 – Ability to preserve and multiply moral, cultural, scientific values and achievements of society based on understanding the history and patterns of development of the subject area, its place in the general system of knowledge about nature and society and in the development of society, techniques and technologies, use different types and forms motor activity for active recreation and leading a healthy lifestyle.
- GC17 – Desire to preserve the environment.

Special (SC):

- SC1 – Ability to collect medical information about the patient and analyze clinical data.
- SC2 – Ability to determine the necessary list of laboratory and instrumental studies and evaluate their results.
- SC3 – Ability to establish a preliminary and clinical diagnosis of the disease.
- SC4 – Ability to determine the necessary regime of work and rest in the treatment and prevention of diseases.
- SC5 – Ability to determine the nature of nutrition in the treatment and prevention of diseases.
- SC6 – Ability to determine the principles and nature of treatment and prevention of diseases.
- SC7 – Ability to diagnose emergency conditions.
- SC8 – Ability to determine tactics and provide emergency medical care.
- SC11 – Ability to solve medical problems in new or unfamiliar environments in the presence of incomplete or limited information, taking into account aspects of social and ethical responsibility.
- SC13 – Ability to carry out sanitary and hygienic and preventive measures.
- SC16 – Ability to fill medical documentation, including electronic forms.
- SC17 – Ability to assess the impact of the environment, socio-economic and biological determinants on the state of health of an individual, family, population.
- SC21 – Ability to clearly and unambiguously convey one's own knowledge, conclusions and arguments on health care problems and related issues to specialists and non-specialists, in particular to people who are studying.
- SC24 – Adherence to ethical principles when working with patients and laboratory animals.
- SC25 – Adherence to professional and academic integrity, being responsible for the reliability of the obtained scientific results.
- SC26 – Ability to determine the management tactics of persons subject to dispensary supervision.

Expected learning outcomes. As a result of studying, the application's acquisition of the higher education must:

Have:

- PLO1 – Having a thorough knowledge of the structure of professional activity. Being able to carry out professional activities that require updating and integration of knowledge. To be responsible for professional development, the ability for further professional training with a high level of autonomy.
- PLO2 – Understanding and knowledge of basic and clinical biomedical sciences, at a level sufficient for solving professional tasks in the field of health care.
- PLO3 – . Specialized conceptual knowledge that includes scientific achievements in the field of health care and is the basis for conducting research, critical understanding of problems in the field of medicine and related interdisciplinary problems.
- PLO4 – Identifying leading clinical symptoms and syndromes (according to list 1); according to standard methods, using preliminary data of the patient's history, data of the patient's examination, knowledge about the person, his organs and systems, establish a preliminary clinical diagnosis of the disease (according to list 2)..
- PLO5 – Collecting complaints, history of life and diseases, assessing the psychomotor and physical development of the patient, the state of organs and systems of the body, based on the results of laboratory and instrumental studies, evaluation of the information regarding the diagnosis (according to list 4), taking into account the age of the patient..
- PLO6 – Establishing the final clinical diagnosis by making a reasoned decision and analyzing the received subjective and objective data of clinical, additional examination, carrying out differential diagnosis, observing the relevant ethical and legal norms, under the control of the managing physician in the conditions of the health care institution (according to the list 2).

- PLO7 – . Assigning and analyzing additional (mandatory and optional) examination methods (laboratory, functional and/or instrumental) (according to list 4) of patients with diseases of organs and body systems for differential diagnosis of diseases (according to list 2).
- PLO8 – Determination of the main clinical syndrome or symptom that determines the severity of the victim's/victim's condition (according to list 3) by making a reasoned decision about the person's condition under any circumstances (in the conditions of a health care facility, outside its borders), including in conditions of emergency and hostilities, in field conditions, in conditions of lack of information and limited time.
- PLO9 – Determination of the nature and principles of treatment (conservative, operative) of patients with diseases (according to list 2), taking into account the patient's age, in the conditions of a health care institution, outside its borders and at the stages of medical evacuation, including in field conditions, based on a preliminary clinical diagnosis, observing the relevant ethical and legal norms, by making a reasoned decision according to existing algorithms and standard schemes, in case of the need to expand the standard scheme, be able to justify personalized recommendations under the control of the head physician in the conditions of a medical institution.
- PLO10 – Determination of the necessary mode of work, rest and nutrition based on the final clinical diagnosis, observing the relevant ethical and legal norms, by making a reasoned decision according to existing algorithms and standard schemes.
- PLO12 – Assessment of the general condition of a newborn child by making a reasoned decision according to existing algorithms and standard schemes, observing the relevant ethical and legal norms.
- PLO13 – Assessment and monitoring of the child's physical and psychomotor development, provision of recommendations on feeding and nutritional features depending on age, and organization of preventive vaccinations according to the calendar.
- PLO14 – Determination of tactics and providing emergency medical care in emergencies (according to list 3) in limited time conditions according to existing clinical protocols and standards of treatment.
- PLO17 – Performing medical manipulations (according to list 5) in the conditions of a medical institution, at home or work based on a previous clinical diagnosis and/or indicators of the patient's condition by making a reasoned decision, observing the relevant ethical and legal norms.
- PLO21 – Searching for the necessary information in the professional literature and databases of other sources, analysing, evaluating and application of this information.
- PLO25 – Conveying one's knowledge, conclusions and arguments on health care problems and related issues to specialists and non-specialists clearly and unambiguously.
- PLO27 – Communication freely in the state language and English, both orally and in writing to discuss professional activities, research and projects.
- PLO30 – Determination of the management tactics of persons subject to dispensary supervision (children, pregnant women, workers whose professions require mandatory dispensary examination).

Expected learning outcomes. As a result of studying, the applicant of the higher education must:

Know: The sequence of actions in providing emergency medical care for seizures in children. The procedure for emergency medical care for cerebral edema and commas in children. Medicines used to control pain in children.

Be able to:

- Communicate with the child's parents, with complaints of pain of various etiology and pathogenesis.
- Assess the neurological status according to the AVPU scale.
- Conduct a survey of the child's parents according to the algorithm of differential diagnosis of diseases that occur with convulsions in children (febrile convulsions, epileptic syndrome, genetic syndromes, epilepsy).
- Conduct a survey of the child's parents according to the algorithm of differential diagnosis of intracranial hematomas due to trauma.
- Conduct a survey of the child's parents according to the algorithm of examination and medical management of children with meningitis.
- Conduct a survey of the child's parents according to the algorithm of examination and medical management of children with encephalitis.
- Conduct clinical examination of children of different ages according to standard methods.

- Analyze the results of laboratory, functional and instrumental research.
- Carry out differential diagnosis and substantiate the clinical diagnosis.
- Determine tactics and provide emergency medical care to children with febrile convulsions, epileptic syndrome, genetic syndromes, epilepsy.
- Determine tactics and provide emergency medical care to children with cerebral edema.
- Determine tactics and provide emergency medical care to children with hyperglycemic, hypoglycemic, hepatic, cerebral coma.
- Assess the child's condition according to the Glasgow scale.
- Determine the nature and principles of treatment of sick children on the basis of a preliminary clinical diagnosis, observing relevant ethical and legal norms, by making a reasoned decision according to existing algorithms and standard schemes.
- Perform lumbar puncture on simulation equipment for common neurological diseases (meningitis, encephalitis) in children.
- Keep medical records for common neurological diseases in children.

3. The content of the selective educational discipline "Emergencies in pediatric neurology"

The content module 1.

Topic No. 1. Emergency medical care for seizures in children.

Differential diagnosis of diseases with convulsions in children (febrile seizures, epileptic syndrome, genetic syndromes, epilepsy).

Topic No. 2. Emergency medical care for cerebral edema in children.

Brain edema in children, differential diagnosis, emergency care.

Topic No. 3. Emergency medical care for comas in children.

Differential diagnosis of coma (hyperglycemic, hypoglycemic, hepatic, cerebral). Emergency care for comas in children.

Topic No. 4. Differential diagnosis of intracranial hematomas due to trauma. Assessment of the child's condition according to the Glasgow scale.

Topic No. 5. Meningitis in children.

Etiology, pathogenesis, clinic, diagnosis, differential diagnosis. Performing a lumbar puncture on simulation equipment. Treatment..

Topic No. 6. Encephalitis in children.

Etiology, pathogenesis, clinic, diagnosis, differential diagnosis. Performing a lumbar puncture on simulation equipment. Treatment.

Topic No. 7. Pain in children. Assessment of neurological status.

Etiology, pathogenesis, clinic, diagnosis. Pain assessment scales for children of different ages.

Topic No. 8. Pain in children.

Pain control, drugs used to control pain in children. Assessment of neurological status according to the AVPU scale.

4. The structure of the selective educational discipline

Topic	Number of hours					
	Total	including				
		lectures	seminars	practical	laboratory	self-make work
The content module 1. Emergencies in pediatric neurology.						
Topic 1. Emergency medical care for seizures in children.	6	0	2	0	0	4

Differential diagnosis of diseases with convulsions in children (febrile seizures, epileptic syndrome, genetic syndromes, epilepsy).						
Topic 2. Emergency medical care for cerebral edema in children. Brain edema in children, differential diagnosis, emergency care.	6	0	2	0	0	4
Topic 3. Emergency medical care for comas in children. Differential diagnosis of coma (hyperglycemic, hypoglycemic, hepatic, cerebral). Emergency care for comas in children.	6	0	2	0	0	4
Topic 4. Differential diagnosis of intracranial hematomas due to trauma. Assessment of the child's condition according to the Glasgow scale.	6	0	2	0	0	4
Topic 5. Meningitis in children. Etiology, pathogenesis, clinic, diagnosis, differential diagnosis. Performing a lumbar puncture on simulation equipment. Treatment.	6	0	2	0	0	4
Topic 6. Encephalitis in children. Etiology, pathogenesis, clinic, diagnosis, differential diagnosis. Performing a lumbar puncture on simulation equipment. Treatment.	6	0	2	0	0	4
Topic 7. Pain in children. Assessment of neurological status. Etiology, pathogenesis, clinic, diagnosis. Pain	5	0	2	0	0	3

assessment scales for children of different ages.						
Topic 8. Pain in children. Pain control, drugs used to control pain in children. Assessment of neurological status according to the AVPU scale.	4	0	2	0	0	2
<i>Together according to content module 1</i>	45	0	16	0	0	29
<i>Individual tasks</i>	0	0	0	0	0	0
Total hours	45	0	16	0	0	29

5. Topics of lectures / seminars / practical / laboratory classes

5.1. The topics of the lectures are not provided.

5.2. Topics of seminar classes

No.	Topic	The number of hours
1.	1. Emergency medical care for seizures in children. Differential diagnosis of diseases with convulsions in children (febrile seizures, epileptic syndrome, genetic syndromes, epilepsy).	2
2.	2. Emergency medical care for cerebral edema in children. Brain edema in children, differential diagnosis, emergency care.	2
3.	3. Emergency medical care for commas in children. Differential diagnosis of coma (hyperglycemic, hypoglycemic, hepatic, cerebral). Emergency care for commas in children.	2
4.	4. Differential diagnosis of intracranial hematomas due to trauma. Assessment of the child's condition according to the Glasgow scale.	2
5.	5. Meningitis in children. Etiology, pathogenesis, clinic, diagnosis, differential diagnosis. Performing a lumbar puncture on simulation equipment. Treatment.	2
6.	6. Encephalitis in children. Etiology, pathogenesis, clinic, diagnosis, differential diagnosis. Performing a lumbar puncture on simulation equipment. Treatment.	2
7.	7. Pain in children. Assessment of neurological status. Etiology, pathogenesis, clinic, diagnosis. Pain assessment scales for children of different ages.	2
8.	8. Pain in children. Pain control, drugs used to control pain in children. Assessment of neurological status according to the AVPU scale	2
	Total	16

5.3. The topics of practical classes are not provided.

6. Self-make work of the application of the higher education

No.	Types of self-make work	The number of hours
1.	Preparation for the seminar class: Emergency medical care for seizures in children. Differential diagnosis of diseases with convulsions in children (febrile seizures, epileptic syndrome, genetic syndromes, epilepsy).	4
2.	Preparation for the seminar class: Emergency medical care for cerebral edema in children. Brain edema in children, differential diagnosis, emergency care.	4
3.	Preparation for the seminar class: Emergency medical care for comas in children. Differential diagnosis of coma (hyperglycemic, hypoglycemic, hepatic, cerebral). Emergency care for comas in children.	4
4.	Preparation for the seminar class: Differential diagnosis of intracranial hematomas due to trauma. Assessment of the child's condition according to the Glasgow scale.	4
5.	Preparation for the seminar class: Meningitis in children. Etiology, pathogenesis, clinic, diagnosis, differential diagnosis. Performing a lumbar puncture on simulation equipment. Treatment.	4
6.	Preparation for the seminar class: Encephalitis in children. Etiology, pathogenesis, clinic, diagnosis, differential diagnosis. Performing a lumbar puncture on simulation equipment. Treatment.	4
7.	Preparation for the seminar class: Pain in children. Assessment of neurological status. Etiology, pathogenesis, clinic, diagnosis. Pain assessment scales for children of different ages.	3
8.	Preparation for the seminar class: Pain in children. Pain control, drugs used to control pain in children. Assessment of neurological status according to the AVPU scale.	2
	Total	29

7. Methods of studying

Seminar classes: discussion of theoretical issues, frontal survey on basic terminology, testing, role-playing games for mastering the skills of providing emergency care for neurological diseases in children (team work).

Self-make work: mastering the topics of the seminar on emergency care for neurological diseases in children.

8. Forms of control and evaluation methods (including criteria for evaluating learning outcomes)

Current control: assessment of mastery of practical skills of providing emergency medical care in neurological emergency situations in children.

Final control: test.

The structure of the current assessment at the seminar class:

- Assessment of compliance with the communication algorithm during the role-playing game;
- maximum grade – 5, minimum grade – 3, unsatisfactory grade – 2.

- Assessment of the appointment of additional examination methods and their interpretation
 - maximum grade – 5, minimum grade – 3, unsatisfactory grade – 2.
 - Assessment of the justification of the preliminary or clinical diagnosis and determination of patient management tactics and provision of emergency assistance for neurological diseases in children.
 - maximum grade – 5, minimum grade – 3, unsatisfactory grade – 2.
- The grade for the lesson is the arithmetic average of all components and can only have an integer value, namely 5, 4, 3, 2.

Current assessment criteria for the seminar class:

Excellent "5"	The application of higher education is fluent in the material, takes an active part in the role-playing game, confidently demonstrates practical skills during the examination of a sick child and the interpretation of clinical, laboratory and instrumental research data, expresses his opinion on the subject of the lesson, demonstrates clinical thinking.
Good "4"	The application of higher education has a good command of the material, takes part in a role-playing game, demonstrates practical skills during the examination of a sick child and the interpretation of clinical, laboratory and instrumental research data with some errors, expresses his opinion on the topic of the lesson, demonstrates clinical thinking.
Satisfactorily "3"	The application of higher education does not have sufficient knowledge of the material, performs his role in the role-play without confidence, demonstrates practical skills during the examination of a sick child and the interpretation of clinical, laboratory and instrumental research data with significant errors.
Unsatisfactorily "2"	The application of higher education does not master the material, does not take part in a role-playing game, does not demonstrate practical skills during the examination of a sick child and the interpretation of clinical, laboratory and instrumental research data.

9. Distribution of points received by applicants of the higher education

The applicant for higher education is credited with optional discipline, provided there is no academic debt and an average current grade of at least 3.0.

10. Methodological support:

- The working program of a selective educational discipline
- Syllabus of selective educational discipline
- Tutorials: **Nelson textbook** of pediatrics, 2 volume set. **Edition : 21st** , 2019. PDF format.
<http://pediacalls.com/e-books/nelson-textbook-of-pediatrics-21st-edition/>
- Multimedia presentations
- Scenarios of role-playing games
- Test tasks
- Methodical development of seminar classes

11. Recommended literature:

Basic:

1. Nelson textbook of pediatrics, 2 volume set. Edition: 21st, 2019. PDF format.
<http://pediacalls.com/e-books/nelson-textbook-of-pediatrics-21st-edition/>

2. Vinod K Paul, Arvind Bagga. Ghai Essential Pediatrics, 8th edition, 2013. PDF format.

Additionally:

1. Charry JD, Falla JD, Ochoa JD, et al: External validation of the Rotterdam computed tomography score in the prediction of mortality in severe traumatic brain injury. J Neurosci Rural Pract 8(Suppl 1):S23-S26, 2017. doi: 10.4103/jnnp.jnnp_434_16
2. Carney N, Totten AM, O'Reilly C, et al: Guidelines for the management of severe traumatic brain injury, fourth edition. Neurosurgery 80(1):6–15, 2017. doi: 10.1227/NEU.0000000000001432

12. Electronic information resources

1. <https://www.pediatrics.od.ua/>
2. <http://moz.gov.ua> – Ministry of Health of Ukraine
3. www.ama-assn.org - American Medical Association / American Medical Association
4. www.oapn.od.ua - NGO "Odesa Association of Pediatricians and Neonatologists"
5. www.who.int - World Health Organization
6. www.dec.gov.ua/mtd/home/ - State Expert Center of the Ministry of Health of Ukraine
7. <http://bma.org.uk> - British Medical Association
8. www.gmc-uk.org - *General Medical Council* (GMC)
9. www.bundesaerztekammer.de – German Medical Association
10. https://www.who.int/workforcealliance/members_partners/member_list/ipa/en/ - International Pediatric Association (IPA)
11. <http://pediacalls.com/e-books/nelson-textbook-of-pediatrics-21st-edition/>