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MINISTRY OF HEALTH OF UKRAINE  
ODESSA NATIONAL MEDICAL UNIVERSITY



Department of Pediatrics

APPROVE  
Vice-Rector for Scientific and Pedagogical Work  
Prof. *[Signature]* Eduard BURYACHKOVSKY  
" 01 " \_\_\_\_\_ 09 \_\_\_\_\_ 2025

**WORKING PROGRAM OF THE ELECTIVE EDUCATIONAL DISCIPLINE**

**«Vaccination in children and adults»**

**Level of higher education:** second (master's )

**Area of knowledge:** 22 ""Health care""

**Specialty:** 222 "Medicine"

**Educational and professional program :** "Medicine"

The work program is based on the educational and professional program "Medicine" for training 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 (minutes No. 10 of June 27, 2024) and the educational and professional program "Medicine" for training specialists of the second (master's) level of higher education in the specialty I 2 "Medicine" of the field of knowledge I "Healthcare and Social Security", approved by the Academic Council of ONMedU (minutes No. 10 of June 26, 2025).

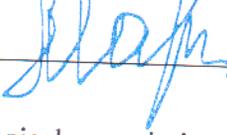
Developers:

Head of department, corresponding member of the National Academy of Medical Sciences of Ukraine, doctor of medical sciences, professor Aryaev M.L. head of educational work; PhD, associate professor Senkovskaya L.I., PhD, associate professor Kaplina L.E., PhD assistant of the department Koropets V.V., Bratkova L.B.

The work program was approved at a meeting of the Department of Pediatrics

Minutes No. 1 dated 29.08.2025

Head of Department  Mykola ARYAEV

Agreed with the guarantor of the EPP  Valeria MARICHEREDA

Approved by the subject cyclic methodological commission on pediatric disciplines of ONMedU  
Minutes No. 1 dated 30.08.2025

Chairman of the subject cyclic methodological commission on pediatric disciplines of ONMedU  
 Marina MELNICHENKO

Reviewed and approved at the department meeting \_\_\_\_\_

Protocol No. \_\_\_ dated "\_\_\_" \_\_\_\_\_ 20\_\_

Head of Department \_\_\_\_\_ Mykola ARYAEV \_\_\_\_\_

(signature) (First name LAST NAME)

Reviewed and approved at the department meeting \_\_\_\_\_

Protocol No. \_\_\_ dated "\_\_\_" \_\_\_\_\_ 20\_\_

Head of Department \_\_\_\_\_ Mykola ARYAEV \_\_\_\_\_

(signature) (First name LAST NAME)

### 1. Description of the elective component:

2. Name of indicators	Field of knowledge, specialty, specialization, level of higher education	Characteristics of the elective component
Total quantity: Credits: 3.0 Hours: 90 Substantial modules: 1	Field of knowledge 22 "Healthcare"	<i>Full-time education</i> <i>Elective component</i>
	Speciality 222 "Medicine"	<i>Year of preparation: 6</i>
		<i>Semester XI-XII</i>
		<i>Lectures (0 hrs.)</i>
		<i>Seminars (0 hrs.)</i>
		<i>Practical (30 hours)</i>
		<i>Laboratory (0 hrs.)</i>
		<i>Independent work (60 hours)</i>
		<i>including individual tasks (0 hours)</i>
		<i>The form of final assessment (according to the curriculum) is a credit.</i>

### 2. The purpose and objectives of the elective component

**Objective :** To provide higher education applicants with additional knowledge and to acquire professional skills in vaccinating children and adults by a family doctor based on the competencies obtained in studying previous disciplines.

**Exercise:**

1. Development of skills and abilities of communication with the child and his parents.
2. Mastering the ability to determine tactics for preventing infectious diseases in children.

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

**General (GC):**

- GC1 – Ability for abstract thinking, analysis and synthesis .
- GC3 – Ability to learn and master modern knowledge .
- GC4 – Knowledge and understanding of the subject area and understanding of professional activities .
- GC5 – Ability to adapt and act in a new situation.
- GC6 – Ability to make informed decisions.
- GC7 – Ability to work in a team.
- GC8 – Ability to interact interpersonally.
- GC11 – Ability to search, process and analyze information from different sources.
- GC12 – Determination and persistence in the tasks set and the responsibilities taken.
- GC13 – Awareness of equal opportunities and problems.

**Special (SC):**

- SC1 – Ability to collect medical information about a patient and analyze clinical data.
- SC 2 – Ability to determine the necessary list of laboratory and instrumental studies and evaluate their results.
- SC 3 – Ability to establish a preliminary and clinical diagnosis of a disease.
- SC 5 – Ability to determine the nature of nutrition in the treatment and prevention of diseases.

- SC 6 – Ability to determine the principles and nature of treatment and prevention of diseases.
- SC 7 – Ability to diagnose emergency conditions.
- SC 8 – Ability to determine tactics and provide emergency medical care.
- SC 10 – Ability to perform medical manipulations.
- SC11 – Ability to solve medical problems in new or unfamiliar environments with incomplete or limited information, taking into account aspects of social and moral responsibility, including the early intervention system.
- SC 13 – Ability to carry out sanitary, hygienic and preventive measures.
- SC 16 – Ability to maintain medical records, including electronic forms.
- SC 24 – Compliance with ethical principles when working with patients and laboratory animals.
- SC 26 – Ability to determine the tactics of managing individuals subject to dispensary supervision.

**Program learning outcomes (PLO):**

- PLO1 – Have a thorough knowledge of the structure of professional activity. Be able to carry out professional activity that requires updating and integrating knowledge. Be responsible for professional development, and be able to undertake further professional training with a high level of autonomy.
- PLO2 – understanding and knowledge of fundamental and clinical biomedical sciences at a level sufficient to solve professional problems in the field of healthcare.
- PLO3 - Specialized conceptual knowledge including scientific advances in health care and the basis for conducting research, critical understanding of problems in the field of medicine and related interdisciplinary problems, including the early intervention system.
- PLO4 – to identify and distinguish the leading clinical symptoms and syndromes (according to list 1); according to standard methods, using preliminary data from the patient’s anamnesis, data from the patient’s examination, knowledge about the person, his organs and systems, to establish a preliminary clinical diagnosis of the disease (according to list 2).
- PLO5 - Collect complaints, life and disease history, assess the patient's psychomotor and physical development, the state of the body's organs and systems, and, based on the results of laboratory and instrumental studies, assess information about the diagnosis (according to list 4), taking into account the patient's age.
- PLO6 - establish a final clinical diagnosis by making an informed decision and analyzing the obtained subjective and objective data from clinical, additional examination, conducting differential diagnostics, observing the relevant ethical and legal standards, under the supervision of the head physician in a healthcare facility (according to list 2).
- PLO7 – to prescribe and analyze additional (mandatory and optional) examination methods (laboratory, functional and/or instrumental) (according to list 4) for patients with diseases of organs and body systems to conduct differential diagnostics of diseases (according to list 2).
- PLO8 – Determine the main clinical syndrome or symptom that determines the severity of the condition of the victim/injured person (according to list 3) by making an informed decision about the person’s condition under any circumstances (in a healthcare facility, outside of it), including in emergency situations and combat operations, in the field, in conditions of laSC of information and limited time.
- PLO9 – Determine the nature and principles of treatment of patients (conservative, surgical) with diseases (according to list 2), taking into account the patient's age, in a healthcare facility, outside of it and at the stages of medical evacuation, including in the field, based on a preliminary clinical diagnosis, observing the relevant ethical and legal standards, by making an informed decision on existing algorithms and standard schemes, if necessary to expand the standard scheme, be able to justify personalized recommendations under the supervision of the head physician in a healthcare facility.
- PLO10 – Determine the necessary work, rest and nutrition regimen based on the final clinical diagnosis, observing relevant ethical and legal standards, by making an informed decision according to existing algorithms and standard schemes.

PLO12 - Conduct an assessment of the general condition of a newborn child by making an informed decision according to existing algorithms and standard schemes, observing relevant ethical and legal standards.

PLO13 - to assess and monitor the physical and psychomotor development of the child, provide recommendations on feeding and nutritional characteristics depending on age, organize preventive vaccinations according to the calendar.

PLO14 – Determine tactics and provide emergency medical care in emergency conditions (according to list 3) under time-limited conditions in accordance with existing clinical protocols and treatment standards.

PLO17 – Perform medical procedures (list 5) in a healthcare facility, at home or at work based on a preliminary clinical diagnosis and/or patient condition indicators by making an informed decision, in compliance with relevant ethical and legal standards.

PLO21 - Find necessary information in professional literature and databases in other sources, analyze, evaluate and apply this information.

PLO29. Plan, organize and implement measures for specific prevention of infectious diseases, including in accordance with the National Calendar of Preventive Immunizations, both mandatory and recommended. Manage vaccine stocks, organize additional vaccination campaigns, including immunoprophylaxis measures.

PLO30 – Determine the tactics for managing individuals subject to dispensary supervision (children).

**Expected learning outcomes. As a result of studying the elective component, the applicant must:**

**Know:** work on organizing and conducting preventive vaccinations for children, adverse events during vaccination, emergency care for anaphylactic shock and allergic reactions

**Be able to:**

- Plan and carry out preventive vaccinations for children
- Analyze the vaccination schedule.
- Create a vaccination schedule for children with violations of the vaccination calendar.
- Communicate with the child's parents about the need for vaccinations and create an individual vaccination schedule for the child
- Organize a vaccination room.
- Comply with requirements for storage, transportation and use of vaccines.
- Complete an informed consent form for vaccination.
- Perform medical manipulations using different vaccine administration techniques.
- Communicate with anti-vaccinationists.
- Analysis of the causes of adverse events during vaccination.
- Prevent adverse effects from immunization.
- Provide reporting and monitoring recommendations for adverse events associated with vaccination.
- Determine tactics and provide emergency medical care in case of anaphylactic shock.
- Provide emergency care for allergic reactions during vaccination: acute urticaria, angioedema
- Maintain medical records of vaccinations in children

### **3. Contents of the sample elective component Vaccination in children and adults**

#### **Content module 1.**

#### **Topic 1. Work on organizing and conducting preventive vaccinations for children .**

Carrying out vaccination according to the calendar. Classification of vaccines. Mandatory and recommended vaccines. Informed consent for vaccination.

#### **Topic 2. Methodology and technique of implementation preventive vaccinations .**

Organization of the vaccination room. Technique of vaccine administration. Combination of preparations for vaccination. Vaccination of children with violation of the calendar.

**Topic 3. Adverse reactions to vaccination.**

Complicated course of the post-vaccination period. Post-vaccination reactions. Post-vaccination complications. Reports and recommendations for monitoring adverse events during vaccination.

**Topic 4. Allergic reactions during vaccinations**

Criteria for the occurrence of anaphylactic shoSC. Clinic of anaphylactic shoSC. Algorithm for providing first emergency aid.

Allergic reactions not associated with anaphylaxis (urticaria, angioedema): clinical presentation, diagnostics, treatment. Emergency care for allergic reactions.

**Topic 5. Mastering communication skills during child vaccination.**

Communicating with parents about the need for vaccination and creating an individual vaccination schedule for the child. Working with anti-vaccinationists.

**4. Structure of the sample component**

Name it	Number of hours					
	Total	including				
		lectures	Seminars	practical	laboratory	SRZ
<b>Content module 1. Vaccination in children and adults</b>						
Topic 1. Work on organizing and conducting preventive vaccinations for children.	18	0	0	6	0	12
Topic 2. Methods and techniques for carrying out preventive vaccinations.	18	0	0	6	0	12
Topic 3. Adverse events with vaccination	18	0	0	6	0	12
Topic 4. Allergic reactions during vaccinations.	18	0	0	6	0	12
Topic 5. Communication skills in childhood vaccination	18	0	0	6	0	12
<i>Total for content module 1</i>	90	0	0	30	0	60
<i>Individual tasks</i>	0	0	0	0	0	0
<b>Total hours</b>	90	0	0	30	0	60

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

**5.1. Lecture topics** – not provided

**Seminar topics** – not provided

**5.3. Topics of practical classes**

No.	Topic	Quantity. hours
1.	Practical lesson №1. Topic 1. Work on organizing and conducting preventive vaccinations for children. Conducting vaccinations according to the calendar.	2
2.	Practical lesson №2. Topic 1. Work on organizing and conducting preventive vaccinations for children. Classification of vaccines. Mandatory and recommended	2

	vaccines.	
3.	Practical lesson №3. Topic 1. Work on organizing and conducting preventive vaccinations for children. Vaccination calendar of recommended vaccines	2
4.	Practical lesson No. 4. Topic 2. Methodology and technique of carrying out preventive vaccinations. Organization of the vaccination room. Technique of vaccine administration.	2
5.	Practical lesson No. 5. Topic 2. Combination of preparations for vaccination.	2
6.	Practical lesson №6. Topic 2. Vaccination of children with a violation of the calendar. Emergency vaccination.	2
7.	Practical lesson №7. Topic 3. Adverse effects during vaccination. Complicated course of the post-vaccination period. Post-vaccination reactions.	2
8.	Practical lesson No. 8. Topic 3. Post-vaccination complications.	2
9.	Practical session №9 Topic 3. Reporting and recommendations for monitoring adverse events during vaccination.	2
10.	Practical lesson №10 Topic 4. Allergic reactions during vaccinations. Anaphylactic shoSC. Criteria for the occurrence of anaphylactic shoSC. Clinic. Algorithm for providing emergency care in simulation equipment.	2
11.	Practical lesson №11 Topic 4. Allergic reactions during vaccinations. Allergic reactions not associated with anaphylaxis (urticaria, angioedema): clinical presentation, diagnostics, treatment.	2
12.	Practical lesson №12 Topic 4. Allergic reactions during vaccinations. Allergic reactions not associated with anaphylaxis, Lyell's syndrome, Stevens-Johnson, clinical features, diagnostics, treatment.	2
13.	Practical lesson №13. Topic 5. Communication skills in childhood vaccination. Communicating with parents about the need for vaccination and creating an individual vaccination schedule for the child.	2
14.	Practical lesson №14. Topic 5. Communication skills when vaccinating children. Communication with anti-vaccinationists.	2
15.	Practical lesson №15. Topic 5. Communication skills in childhood vaccination. Informed consent for vaccination	2
	Total	30

### **6. Self-make work of a higher education applicant**

No.	Types of SRZ	Quantity. hours
1.	Preparation for practical lesson №1. Topic 1. Work on organizing and conducting preventive vaccinations for children. Conducting vaccinations according to the calendar.	4
2.	Preparation for practical lesson №2. Topic 1. Work on organizing and conducting preventive vaccinations for children. Classification of vaccines. Mandatory and recommended vaccines.	4
3.	Preparation for practical lesson №3. Topic 1. Work on organizing and conducting preventive vaccinations for children. Vaccination calendar of recommended vaccines	4
4.	Preparation for practical lesson №4. Topic 2. Methodology and technique of carrying out preventive vaccinations. Organization of the vaccination room. Technique of vaccine administration.	4
5.	Preparation for practical lesson №5. Topic 2. Combination of preparations for vaccination.	4
6.	Preparation for practical lesson №6. Topic 2. Vaccination of children with a violation of the calendar. Emergency vaccination.	4

7.	Preparation for practical lesson №7. Topic 3. Adverse effects during vaccination . Complicated course of the post-vaccination period. Post-vaccination reactions.	4
8.	Preparation for practical lesson №8. Topic 3. Post-vaccination complications.	4
9.	Preparation for Practical Session №9 Topic 3. Reporting and recommendations for monitoring adverse events during vaccination.	4
10.	Preparation for practical lesson №10 Topic 4. Allergic reactions during vaccinations. Anaphylactic shoSC. Criteria for the occurrence of anaphylactic shoSC. Clinic. Algorithm for providing emergency care in simulation equipment.	4
11.	Preparation for practical lesson №11 Topic 4. Allergic reactions during vaccinations. Allergic reactions not associated with anaphylaxis (urticaria, angioedema): clinical presentation, diagnostics, treatment.	4
12.	Preparation for practical lesson №12 Topic 4. Allergic reactions during vaccinations. Allergic reactions not associated with anaphylaxis, Lyell's syndrome, Stevens-Johnson, clinical features, diagnostics, treatment.	4
13.	Preparation for practical lesson №13. Topic 5. Communication skills in childhood vaccination. Communicating with parents about the need for vaccination and creating an individual vaccination schedule for the child.	4
14.	Preparation for practical lesson №14. Topic 5. Communication skills when vaccinating children. Communication with anti-vaccinationists.	4
15.	Preparation for practical lesson №15. Topic 5. Communication skills in childhood vaccination. Informed consent for vaccination	4
	Total	60

## 7. Teaching methods

**Practical classes:** discussion of theoretical issues, frontal survey on basic terminology, testing, role-playing games to master communication skills with a child or his parents, planning and conducting preventive vaccinations for children and adults (teamwork), work on simulation equipment.

**Self-make work:** preparation for the topics of the practical lesson.

## 8. Forms of control and evaluation methods (including assessment of learning outcomes )

### Current control:

1. Assessment of theoretical knowledge on the topic of the lesson:

methods: survey, solution of a situational clinical problem;

maximum score – 5, minimum score – 3, unsatisfactory score – 2.

2. Assessment of practical skills and manipulations on the topic of the lesson:

methods: assessment of the correctness of the performance of practical skills, business game.

maximum score – 5, minimum score – 3, unsatisfactory score – 2.

The grade for one practical lesson is the arithmetic mean of all components and can only have an integer value (5, 4, 3, 2), which is rounded off statistical method

### Criteria for current assessment during practical training::

"5"	The applicant for higher education is fluent in the material, actively participates in the discussion and solution of a situational clinical problem, test tasks, confidently demonstrates practical skills when examining a siSC child and interpreting clinical, laboratory and instrumental research data, expresses his opinion on the topic of the lesson,
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	demonstrates clinical thinking.
"4"	The applicant for higher education has a good command of the material, takes part in the discussion and solution of a situational clinical problem, test problems, demonstrates practical skills in performing the algorithm of practical action and interpreting the data of clinical, laboratory and instrumental studies with some errors, expresses his opinion on the topic of the lesson, demonstrates clinical thinking.
"3"	The applicant for higher education does not have sufficient knowledge of the material, is uncertain in participating in the discussion and solution of a situational clinical problem, demonstrates practical skills in performing the algorithm of practical action and interpreting the data of clinical, laboratory and instrumental studies with significant errors .
"2"	The applicant for higher education does not have a command of the material, does not participate in the discussion and solution of a situational clinical problem, does not demonstrate practical skills in performing the algorithm of practical action and interpreting data from clinical, laboratory and instrumental studies with significant errors .

### **Final control: credit.**

The credit is given to the applicant who has completed all the tasks of the academic discipline's work program, took an active part in practical classes, completed and defended an individual assignment and has an average current grade of at least 3.0 and has no academic debt.

The credit is given: at the last lesson before the start of the examination session – with the tape teaching system, at the last lesson – with the cyclic teaching system.

### **9. Distribution of points received by applicants for higher education**

The score is the arithmetic mean of all components on a traditional four-point scale and has a value that is rounded off using the statistical method with two decimal places after the decimal point.

### **10. Methodological support:**

- Work program of an elective academic discipline
- Syllabus of an elective academic discipline
- Textbooks:

Pediatrics A textbook in two volumes edited by M.L.Aryaev, N.V.Kotova. – V.1. Neonatology. Hematology. Endocrinology. – Odessa.: ONMedU. – 2014. – 155 p.

Pediatrics in two volumes, edited by Aryaev M.L., Kotova N.V. T2, diseases of young children. Pulmonology. Allergology. Cardiology. Gastroenterology. Nephrology. HIV infection. Primary health care textbook 2014. – 312 p.

Pediatrics. Differential diagnostics. Emergency conditions ; edited by Aryaev M.L., Kotova N.V. Odessa: ONMedU. – 2017. – 280 p.

Pediatrics. Differential diagnostics. Emergency conditions edited by Aryaev M.L., Kotova N.V., electronic edition on compact disc. ONMedu. – 2017

- Multimedia presentations
- Test tasks
- Methodological developments for seminar classes

### **11. Questions for the final assessment**

1. Work on organizing and conducting preventive vaccinations for children. Conducting vaccinations according to the calendar .
2. Classification of vaccines. Mandatory and recommended vaccines.
3. Vaccination schedule for essential and recommended vaccines .
4. Organization of the vaccination room. Combination of preparations for vaccination. Technique of vaccine administration .
5. Vaccination of children with violation of the calendar. Emergency vaccination.
6. Adverse events during vaccination . Complicated course of the post-vaccination period. Post-vaccination reactions .
7. Reporting and monitoring recommendations for adverse events associated with vaccination.
8. Allergic reactions during vaccinations. Anaphylactic shock , emergency care .
9. Allergic reactions during vaccinations. Allergic reactions not associated with anaphylaxis, Lyell's syndrome, Stevens-Johnson, clinical features, diagnostics, treatment.
10. Communicating with parents about the need for vaccination and creating an individual vaccination schedule for the child.
11. Communication skills in vaccinating children. Communication with anti-vaccinationists .
12. Communication skills in childhood vaccination Informed consent for vaccination

## **12.Recommended literature**

### **Main:**

1. Neonatology: textbook: in 3 volumes / [T. K. Znamenskaya, Yu. G. Antipkin, M. L. Aryaev, et al.]; edited by T. K. Znamenskaya. – Lviv: Marchenko TV Publisher. 2020, T1. 407 p.; T2. 455 p.; T3. 379 p.
2. Pediatrics Textbook in two volumes. M.L.Aryaev, N.V.Kotova, N.Yu.Gornostaeva [and others]; edited by M.L.Aryaeva, N.V.Kotova. Odessa: ONMedU, 2014 Vol.1. Neonatology. Hematology. Endocrinology. 155 pp.
3. Pediatrics A textbook in two volumes edited by M.L.Aryaev, N.V.Kotova. – V.1. Neonatology. Hematology. Endocrinology. – Odessa.: ONMedU. – 2014. – 155 p.
4. Pediatrics. Differential diagnostics. Emergency conditions edited by Aryaev M.L., Kotova N.V., electronic edition on compact disc. ONMed. 2017.
5. Pediatrics. Differential diagnostics. Emergency conditions. M.L.Aryaev, N.V.Kotova, A.A. Zelinsky [et al.]; edited by M.L.Aryaev, N.V.Kotova. Odessa: ONMedU. 2017. 280 p.

### **Additional**

1. Order of the Ministry of Health of Ukraine "On the procedure for conducting preventive vaccinations in Ukraine and quality control and circulation of medical immunobiological preparations" dated 16.09.2011 No. 595, in force
2. Order of the Ministry of Health No. 280 of 01.02.2019 "Regulations on the organization and implementation of preventive vaccinations"
3. Order of the Ministry of Health No. 916 of 12/30/2015 "Drug allergy, including anaphylaxis, is in effect
4. Order of the Ministry of Health No. 1269 of 05.06.2019 "Emergency medical care: pre-hospital stage. New clinical protocol"
5. Order of the Ministry of Health of Ukraine On the procedure for conducting preventive vaccinations in Ukraine and quality control and circulation of medical immunobiological preparations No. 958 dated 04/23/2019.

6. Order of the Ministry of Health of Ukraine No. 898 of 27.12.2006 (as amended by the order of the Ministry of Health of Ukraine of 26.09.2016 No. 996) "On approval of the Procedure for the implementation of pharmacovigilance" is in effect.

### **13. Electronic information resources**

1. E-learning course on Vaccine Safety Basics. E-learning course on Vaccine Safety Basics <http://vaccine-safety-training.org/>
2. WHO Global Vaccine Safety Page. [https://www.who.int/vaccine\\_safety/publications/en/](https://www.who.int/vaccine_safety/publications/en/)