

MINISTRY OF HEALTH OF THE REPUBLIC OF BELARUS
EDUCATIONAL INSTITUTION
BELARUSIAN STATE MEDICAL UNIVERSITY

Контрольный
экземпляр



APPROVED

by First Vice-Rector, Professor

I.N.Moroz

12.08. 2023

Reg. # UD-6.11/2324 /edu.

PEDIATRIC INFECTIOUS DISEASES

**Curriculum of educational institution in the educational discipline for the
specialty 1-79 01 01 «General Medicine»**

Sub-Residency «General Clinical Practice»

Minsk 2023

Curriculum is based on the educational program of educational institution in the educational discipline «Pediatric Infectious Diseases» for the Sub-Residency «General Clinical Practice (for foreign citizens)», approved 11.08.2023, registration # УД-Б. 11/2324/уч. суд.

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RECOMMENDED FOR APPROVAL:

by the Pediatric Infectious Diseases Department of the Educational Institution «Belarusian State Medical University»
(protocol # 18 of 31.07.23);

by the Scientific and Methodological Council of the Educational Institution «Belarusian State Medical University»
(protocol # 7 of 10.08.2023)

EXPLANATORY NOTE

«Pediatric Infectious Diseases» is the educational discipline containing systematic scientific knowledge of the etiology, pathogenesis, clinical picture, methods of diagnosis, treatment and prevention of children's diseases caused by microorganisms and their toxins.

The curriculum for the discipline «Pediatric Infectious Diseases» for the sub-residency «General Clinical Practice (for foreign citizens)» is aimed to provide the students' with the academic, social, personal and professional competencies in treatment of children's diseases caused by microorganisms and their toxins, implementation of primary preventive and anti-epidemic measures in the infectious site.

The tasks of teaching the discipline are to develop the students' scientific knowledge about etiology, pathogenesis, clinical picture, methods of laboratory and instrumental diagnostics, principles of etiologic treatment of socially significant and most common infectious diseases in children at the modern stage, skills and abilities necessary for:

- clinical examination of children with infectious pathology;
- interpretation of laboratory and instrumental tests;
- diagnosis and treatment of children's diseases caused by microorganisms and their toxins, taking into account etiology and pathogenesis;
- differential diagnosis of infectious and non-infectious diseases in children;
- carrying out specific and nonspecific prevention of socially significant and most common infectious diseases in children;
- examination and rehabilitation of children with infectious diseases of different localization;
- assume sanitary and anti-epidemic measures for infectious diseases.

Teaching and successful learning of the academic discipline «Pediatric Infectious Diseases» for the sub-residency «General Clinical Practice (for foreign citizens)» is carried out on the basis of the knowledge and skills previously acquired by the students in the following disciplines:

Biological Chemistry. Molecular bases of normal human physiological functions; molecular basis of the development of pathological processes, their prevention and treatment; biochemical methods of diseases diagnostic and monitoring of human health.

Normal Physiology. The vital functions of a healthy body and its components (cells, tissues, organs, functional systems), the regulation mechanisms of these functions.

Pathological Anatomy. Pathological changes that can be found in various infectious diseases and cause their clinical manifestations.

Microbiology, Virology, Immunology. Features of infectious diseases causative agents (morphological, tinctorial, cultural, biochemical; toxigenicity, invasion and aggression factors).

Pathological Physiology. Occurrence, development and outcome of pathological processes; features and nature of physiological functions changes in

pathological conditions of the body, typical for infectious diseases. Pathogenetic treatment of infectious diseases and acute conditions.

Dermatovenereology. Evaluation of rashes on the skin and mucous membranes. Diagnosis of skin diseases, differential diagnosis with childhood infectious diseases with exanthema.

Epidemiology. Mechanisms and ways of transmission, causes of infectious diseases spread. Organization and management of specific and non-specific prevention of infectious diseases. Sanitary and anti-epidemic measures.

Clinical Immunology, Allergology. Differential diagnosis of infectious diseases with allergy components and common allergy. Its manifestations, complications, diagnosis and treatment (tonsillitis, paratonsillar abscesses, sinusitis, laryngitis, lymphadenitis, etc.). Manifestations of infectious diseases on otorhinolaryngological organs, diagnosis and treatment. Differential diagnosis of ear, nose, throat somatic lesions and infectious lesions.

Pediatrics. Differential diagnosis of clinical manifestations of infectious and somatic diseases in children.

Surgical diseases. Differential diagnosis of infectious and surgical clinical manifestations (symptoms of intestinal infections, «acute abdomen», etc.). Differential diagnosis of invasive diarrhea of various etiologies. Diagnosis of purulent lymphadenitis, pancreatitis and sepsis.

Neurology and Neurosurgery. Neurological examination of patients (meningeal signs, cranial nerve damage, physiological and pathological reflexes). Clinical interpretation of cerebrospinal fluid laboratory test. Lumbar puncture. Analysis of instrumental tests of the central nervous system (electroencephalography (EEG), ultrasound of the brain, etc.), indications for them.

As a result of studying the discipline «Pediatric Infectious Diseases» for the sub-residency «General Clinical Practice (for foreign citizens)» the student should

know:

medical ethics and deontology concept of contact with infectious diseases children and their legal representatives;

etiology, pathogenesis, classification of the most common infectious diseases in children and adolescents;

clinical symptoms and causes of socially significant and most common infectious diseases in children;

methods for the diagnosis of infectious diseases in children using the syndrome approach and taking into account the epidemiological and clinical laboratory data;

differential diagnosis of infectious and non-infectious diseases in children by the leading syndrome;

algorithm of actions in case of detection of a child with an infectious disease (warning rules, indications for hospitalization, principles and methods of treatment in outpatient and inpatient cases: preventive, sanitary and anti-epidemic measures in the outbreak);

methods of rational treatment of infectious diseases in children using modern effective medicines and methods;

modern methods of providing emergency medical care to children with severe and / or complicated infectious diseases;

principles and methods of general and specific prevention of infectious diseases in children;

medical rehabilitation principles and clinical examination of children with infectious diseases;

be able to:

determine the leading syndrome and make the diagnosis of the most common and socially significant infectious diseases in children, determine the examination plan and prescribe appropriate treatment;

carry out differential diagnostics of infectious diseases in children with other conditions according to the leading syndrome;

apply anti-epidemic measures to a site of infection;

prescribe treatment for a child with an infectious disease and conduct dynamic monitoring of convalescents;

carry out medical examination of children with chronic infectious diseases;

identify and treat urgent conditions that complicate infectious diseases in children;

master:

history taking methods (including epidemiological one);

physical examination of a child;

interpretation of test results methods (laboratory, functional, radiation (ultrasound, computed tomography, magnetic resonance imaging, etc.);

emergency medical care in acute conditions that can be developed in children with infectious diseases methods;

Total number of hours for the discipline study is 35 academic hours. Classroom hours according to the types of studies: practical classes – 35 hours; student independent work (self-study) is 21 hours.

Intermediate certification is carried out in accordance with the curriculum of the institution of education in the form of a credit (11 semester).

Form of higher education – full-time.

THEMATIC PLAN

Section (topic) name	Number of class hours
	practical
1. Differential diagnosis of diseases with exanthem and enanthem syndroms in children. Immunoprophylaxis of infectious diseases in children	7
2. Respiratory tract infections in children	7
3. Acute intestinal infections and helminthiases in children	7
4. Central nervous system infections in children	7
5. Herpes infection in children. Congenital infections	7
Total hours	35

CONTENT OF THE EDUCATIONAL MATERIAL

1. Differential diagnosis of diseases with exanthem and enanthem syndroms in children. Immunoprophylaxis of infectious diseases in children

Differential diagnosis of infections with exanthems and enanthems in children: scarlet fever, measles, rubella, enterovirus infection, parvovirus infection, pseudotuberculosis, hemorrhagic fever. Features of the clinical course of infections in young children, vaccinations. Differential diagnosis at different periods of a disease.

Epidemiological safety ensuring of medical care. Principles of etiotropic, pathogenetic and symptomatic treatment.

Antiviral drugs. Indications for prescription of antibiotics, drugs of choice, depending on the etiology of an infectious disease. Measures of specific and non-specific prophylaxis.

Examination of children with infectious exanthema and enanthema syndromes (taking of complaints and history of a disease, objective examination); drawing up a survey plan; interpretation of laboratory and instrumental examination tests; making a diagnosis, drawing up a treatment plan, management of medical records, recommendation of medical rehabilitation.

Immunoprophylaxis of infectious diseases in children. Types of immunobiological drugs (vaccines), their advantages and disadvantages. Possible side effects of vaccines (general and local), complications. Immunization schedule in children. Contraindications for immunoprophylaxis.

2. Respiratory tract infections in children

Relevance of acute respiratory infections (ARI) in children. Main infectious diseases with respiratory syndrome, their clinical and differential diagnosis: coronaviral infection, influenza, parainfluenza, adenoviral infection, respiratory syncytial, rhinoviral infection. Acute pneumonia. Pertussis. Differential diagnosis of tonsillitis in children (adenovirus infection, infectious mononucleosis, streptococcal

tonsillitis, pharyngeal diphtheria). Disease features in children up to one year. Complications.

Indications for admission to hospital and principles of treatment of children with ARI and tonsillitis: etiologic, pathogenetic and symptomatic treatment. Epidemiological safety ensuring of medical care. Antiviral drugs. Indications for antibiotic use in patients with ARI. Features of oral detoxication therapy in children. Indications for antipyretic therapy. Specific and nonspecific preventive measures of acute respiratory infections.

Laryngotracheal stenosis (croup syndrome): clinical classification and severity assessment criteria. Differential diagnosis of croup syndrome depending on the etiology (ARI, diphtheria, epiglottitis, foreign body). Respiratory failure signs in children with acute respiratory infections. Degrees of laryngotracheal stenosis and acute respiratory failure (ARF), principles of diagnosis and differential diagnosis. Emergency treatment of laryngotracheal stenosis and acute respiratory failure.

Examination of children with ARI (collection of complaints and anamnesis of the disease, objective examination); drawing up a survey plan; interpretation of laboratory and instrumental examination results; making a diagnosis, drawing up a treatment plan, management of medical records, planning of medical rehabilitation.

3. Acute intestinal infections and helminthiases in children

Etiology, clinical and epidemiological features of acute intestinal infections (AII) in children of different age groups. Pathogenesis of invasive, secretory and osmotic diarrhea. Differential diagnosis of viral (rotavirus, norovirus) infections and bacterial (salmonellosis, shigellosis, E.coli infection, campylobacteriosis) diarrhea. Indications for hospitalization in AII. Diagnostic and treatment methods of acute intestinal infections in children of different age. Indications of antibacterial drugs. Enterocolitis caused by *Clostridium difficile*: clinical and epidemiological features, diagnostic and treatment methods. Differential diagnosis of infectious and non-infectious diarrhea in children. Indications for hospitalization of children with acute intestinal infections. Epidemiological safety ensuring of medical care.

Hemolytic-uremic syndrome: classification, pathogenesis, clinical manifestations in children, criteria for severity assessment. Management and treatment.

The dehydration syndrome in children. Rehydration therapy. Hypovolemic shock, first aid.

Helminthiases (nematodosis, trematodosis) in children: the main biological properties of the causative agents of enterobiosis, ascariasis, toxocarosis. Modern epidemiological aspects, pathogenesis, clinical picture, laboratory diagnosis. Treatment and prevention.

Examination of children with AII (collection of complaints and anamnesis of the disease, objective examination); drawing up a survey plan; interpretation of laboratory and instrumental examination results; making a diagnosis, drawing up a treatment plan, management of medical records, recommendation of medical rehabilitation.

4. Central nervous system infections in children

The etiological structure of the central nervous system (CNS) diseases caused by infections in children. Syndromic diagnosis of various levels of CNS diseases, clinical symptoms. Differential diagnosis of infectious and non-infectious diseases of the central nervous system.

Purulent and aseptic meningitis: main causative agents, early diagnosis, management and treatment, indications for etiotropic therapy. Etiological features, epidemiology, pathogenesis, clinical presentation, diagnosis, treatment of primary and secondary bacterial meningitis (meningoencephalitis), the choice of etiotropic therapy, prevention.

Meningococcal infection: modern epidemiological features, clinical classification, early diagnosis, differential diagnosis of other CNS infections and petechial rashes of other origin, management and treatment. Indications for antibacterial drugs. Emergency medical care.

Encephalitis: main causative agents, diagnosis, treatment, indications for etiotropic treatment.

Management of children with CNS infectious (taking a history of the disease and complaints, physical examination); making a diagnosis and treatment plan, interpretation of laboratory results (assessment of cerebrospinal fluid tests and specific methods for determining of the causative agent in the cerebrospinal fluid), instrumental examination methods (ultrasound, computer tomography, magnetic resonance imaging, etc.); making a diagnosis, treatment plan, medical records management, planning of medical rehabilitation.

5. Herpes infection in children. Congenital infections

Classification of herpes viruses. Their etiology, epidemiology and clinical features of herpesviruses infections (localized and generalized forms of herpes infections caused by type 1 and 2 virus, chicken pox, herpes zoster, glandular fever, acquired and inherent cytomegaloviral infection, exanthem subitum, diseases caused by human herpes of type 7 and 8).

Management and treatment of pediatric patients with herpesviruses infections. Antiviral drugs, indications. Indications for hospitalization.

Organization of sanitary and anti-epidemic measures in chickenpox.

Examination of children with herpes stomatitis, glandular fever, chicken pox (taking patient complaints and history of the disease, physical examination); drawing up a survey plan; interpretation of laboratory and instrumental examination results; making a diagnosis, drawing up a treatment plan, medical records management, planning of medical rehabilitation.

Etiology, pathogenesis and clinical features of congenital infections. Differential diagnostics of different congenital infections. TORCH-syndrom. Congenital parvovirus infection.

Diagnosis of congenital infections. Prevention of congenital infections.

EDUCATIONAL METHODOLOGICAL CARD OF EDUCATIONAL DISCIPLINE «PEDIATRIC INFECTIOUS DISEASES» FOR THE SUB-RESIDENCY «GENERAL CLINICAL PRACTICE (FOR FOREIGN CITIZENS)»

Section, topic #	Section (topic) name	Number of in-class hours		Self-studies	Training aids	Literature	Forms of control
		practical					
1.	Differential diagnosis of diseases with exanthem and enanthem syndroms in children. Immunoprophylaxis of infectious diseases in children	7		5	1, 2, 3, 4, 5	1, 3, 5, 8, 9, 10	1, 2, 3, 4, 5, 7, 8
2.	Respiratory tract infections in children	7		3	1, 2, 3, 5, 6	1, 2, 4, 7, 8, 10	1, 2, 3, 4, 7, 8
3.	Acute intestinal infections and helminthiases in children	7		4	1, 2, 3, 4, 5	1, 8, 9, 10	1, 2, 3, 4, 5, 7, 8
4.	Central nervous system infections in children	7		5	1, 2, 3, 4, 5, 7	1, 6, 8, 9, 10	1, 2, 3, 4, 5, 7, 8
5.	Herpes infection in children. Congenital infections	7		4	1, 2, 3, 4, 5, 7	1, 3, 8, 9, 10	1, 2, 3, 4, 5, 6, 7, 8
Total hours		35		21			

INFORMATION AND INSTRUCTIONAL UNIT**LITERATURE****Basic (relevant):**

1. Principles and practice of pediatric infectious diseases/ ed. by Long S.S.; assoc. ed. Prober C.G., Fischer M. – Philadelphia: Elsevier, 2018. – 1662 p.: ill. – Index: p. 1588-1662. – Принципы и практики детских инфекционных болезней.

Additional:

2. Грипп и другие острые респираторные вирусные инфекции у детей = Influenza and other acute respiratory virus infection in children: учебно-методическое пособие / Е.Н. Сергиенко, И.Н. Ластовка. – Минск.: БГМУ, 2019. - 28 с.
3. Дифференциальная диагностика инфекционных экзантем у детей = Differential diagnosis of exanthems in children: учебно-методическое пособие / Р.Н.Манкевич, О.Ф.Романовская, О.В.Симаченко, А.А.Ластовка, Е.В.Дивакова. – Минск : БГМУ, 2023. – 70 с.
4. Коклюш. Паротитная инфекция = Pertussis. Mumps infection: учебно-методическое пособие / О. Ф. Романовская, И. Н. Ластовка, Р. Н. Манкевич. – Минск: БГМУ, 2021. – 44 с.
5. Корь. Краснуха. Скарлатина = Measles. Rubella. Scarlet fever: учебно-методическое пособие / О. Ф. Романовская [и др.]. – Минск: БГМУ, 2019. – 72 с.
6. Менингококковая инфекция у детей = Meningococcal infection in children: учеб.-метод. пособие: учебно-методическое пособие / И.Н. Ластовка, Е.Н.Сергиенко. – Мн.: БГМУ, 2020. – 28 с.
7. Синдром крупа у детей = Croup syndrome in children: уч.-метод. пособие // О.Ф. Романовская, Р.Н. Манкевич. - Минск: БГМУ, 2022. – 32 с.
8. Book'Atlas of Pediatric Infectious Diseases, 2nd edition. Edited by C.J. Baker. American Academy of Pediatrics, 2016. – 675 p.
9. Mitsura, V.M., Zhavoronok S.V., Astapov A.A. Pediatric Infections / V.M. Mitsura, S.V. Zhavoronok, A.A. Astapov // Minsk, BSMU. 2013. 92 p.
10. Pediatric Infectious Diseases / S.O. Kramarev [et al.]. - Kyiv, AUS Medicine Publishing. – 2015. – 238 p.

CHARACTERISTICS OF THE USED TRAINING METHODS

Organizing the educational process, conventional methods of teaching the discipline are used: practical classes and independent students' work.

It is recommended to organize the educational process using traditional and modern educational technologies (simulation training technologies, «standardized patient» techniques, various communication forms, models of independent work,

modular and rating training systems, test and other competence assessment systems, etc.).

Practical classes are held at infectious diseases departments of hospitals. During practical studies under the supervision of a teacher, students independently collect a patient's complaints and take a history of a disease, learn how to examine a patient, make a diagnostic plan (laboratory and instrumental methods) and correct interpretation of the results, put a diagnosis, make medical records and draw up a treatment plan.

Practical skills are acquired and improved by solving clinical cases, test tasks, practicing examination, diagnosis and differential diagnosis skills, medical interventions using electronic-mechanical simulators, communicative competence skills using a standardized (simulated) patient.

Independent work consists of studying the main and additional literature, guidelines, articles, making reports, preparing abstracts, presentations and essays on the most topical issues of infectious diseases, learning material submitted for independent study, and preparing for practical classes.

Students learn safe working rules, international requirements and ethical standards during practical studies.

LIST OF TRAINING AIDS

1. Multimedia presentations;
2. training videos;
3. medical records of inpatient\outpatient cases;
4. foto collections with main signs of infectious diseases;
5. posters with tables, diagrams, graphs, charts, illustrations;
6. chest X-ray images;
7. computer tomography, magnetic resonance imaging results;
8. interpretation of laboratory test results: general clinical blood tests, general clinical urine tests, biochemical blood tests, molecular biology and immunology blood tests, cerebrospinal fluid tests, bacteriological and virological studies, antibiograms.

LIST OF AVAILABLE DIAGNOSTIC TOOLS

Evaluation of educational results is carried out using the array of development tools and technologies of higher education.

Assessment criteria of the results of students' educational activities consist of:

typical tasks in different forms (oral, written tests, situational tasks, simulation);

topics of reports;

medical records of inpatient/outpatient cases and the results of additional tests (laboratory, functional, X-ray).

The following forms are used for competences assessment:

Oral form:

1. Interview.

Written form:

2. Quizzes.

3. Clinical cases.

4. Abstracts and essays.

Oral-written form:

5. Self-solving cases with discussion.

6. Final assessment.

Technical form:

7. Electronic tests.

LIST OF PRACTICAL SKILLS

1. Describing of exanthema syndrome in examining patient.
2. Describing of catarrhal-respiratory syndrome in examining patient (rhinitis, pharyngitis, tonsillitis, laryngitis, epiglottitis, tracheitis, bronchitis, pneumonia).
3. Determination of laryngotracheal stenosis and acute respiratory failure (ARF) degrees.
4. Describing of diarrheal syndrome in patient.
5. Determination of the degree of dehydration.
6. Determination of meningoencephalitis syndrome in examining patient.
7. Planning of the child examination with an infectious disease.
8. Interpretation of the results of bacteriological tests.
9. Interpretation of the results of serological tests in cases of suspected infectious disease in children.
10. Interpretation of the results of a molecular genetic test of biological material in cases of suspected infectious disease in children.
11. Provision of medical care in emergency conditions that complicate the course of infectious diseases in children.
12. The choice of antibiotic treatment of the infectious disease in a child and its correction taking into account the antibiotic resistant test.
13. Calculation of fluids for rehydration treatment for the correction of dehydration: determination of the composition, volume and doses of administered solutions and drugs, speed and route of administration.
14. Planning of preventive measures in the site of infection (terms of separation of contact persons, terms of isolation of a sick patient, disinfection, non-specific and specific prevention).

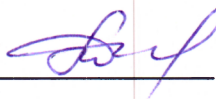
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Curriculum content, composition and accompanying documents comply with the established requirements.

Dean of the Medical Faculty of
International Students

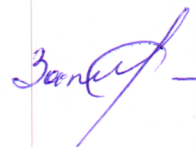
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