

MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE

Petro Mohyla Black Sea National University

Medical Institute

Department of Therapeutic and Surgical Disciplines



"APPROVE"

vice-rector

Grishchenko NM

2019

COURSE DESCRIPTION

Pediatrics with pediatric infectious diseases with in-depth study of pediatric gastroenterology and pulmonology "

Specialty 222 "Medicine"

Developer

Head of the Department of Developer

Guarantor of the educational program

Director of the institute

Head of NMV

Chernyshov O.V.

Zak M. Yu.

Klimenko M. O.

Grishchenko G.V.

Shkirchak S.I.

## 1. Description of the discipline

| Characteristic   | Characteristics of the discipline   |                     |
|--|---|---------------------|
| Name of discipline   | Pediatrics with pediatric infectious diseases with in-depth study of pediatric gastroenterology and pulmonology |                     |
| Branch of knowledge  | 22 "Health care"  |                     |
| Specialty  | 222 "Medicine"  |                     |
| Specialization (if any)  |   |                     |
| Educational program  | Medicine  |                     |
| Level of higher education  | Master  |                     |
| Discipline status  | Selective   |                     |
| Curriculum   | 5th   |                     |
| Academic year  | 2020 - 2021   |                     |
| Semester numbers:  | Full-time   | Correspondence form |
|  | 9th, 10th   |                     |
| Total number of ECTS credits / hours   | 5 credits (2.5 / 2.5) / 150 hours   |                     |
| Course structure:<br>- lectures<br>- practical training<br>- hours of independent work of students | Full-time   | Correspondence form |
|  | 10 years (6/4)  |                     |
|  | 70 years (50/20)<br>70 years (40/30)  |                     |
| Percentage of classroom load   | 53%   |                     |
| Language of instruction  | Ukrainian   |                     |
| Form of intermediate control (if any)  | Certification for the 9th semester  |                     |
| Form of final control  | Exam - 10th semester  |                     |

## 2. Purpose, tasks and planned learning outcomes

**The purpose of** teaching the discipline "Pediatrics with pediatric infectious diseases with in-depth study of pediatric gastroenterology and pulmonology" is to provide students with knowledge and professional skills in neonatology, pediatric endocrinology, pediatric hematology and pediatric infectious diseases, based on knowledge of age, medical anatomical and physiological biology, normal anatomy, normal physiology, histology and embryology, biochemistry, microbiology and virology, pathomorphology, pathophysiology, pharmacology and skills of clinical, laboratory and instrumental examination of the child in compliance with the principles of medical ethics and deontology.

**The subject** of the discipline "Pediatrics with pediatric infectious diseases with in-depth study of pediatric gastroenterology and pulmonology" are the most common diseases of newborns, non-communicable diseases of childhood (endocrine diseases and diseases of the blood system in children) and the most common infectious diseases of children.

**Interdisciplinary connections** : according to the curriculum, the study of the discipline "Pediatrics with pediatric infectious diseases with in-depth study of pediatric gastroenterology and pulmonology" is provided in the IX - X semesters. Prior to that, the student acquired relevant knowledge in the basic disciplines: medical biology, normal anatomy, normal physiology, histology and embryology, bioorganic and biological chemistry, microbiology and virology and immunology, pathomorphology, pathophysiology, pharmacology, and clinical disciplines: propaedeutic, pediatric therapy, surgery, obstetrics with which the program of the discipline "Pediatrics with pediatric infectious diseases with in-depth study of pediatric gastroenterology and pulmonology" is integrated. In turn, the discipline "Pediatrics with pediatric infectious diseases with in-depth study of pediatric gastroenterology and pulmonology" forms the basis for further study by students of 6th year disciplines: "Pediatrics with pediatric infectious diseases", "Pediatrics with pediatric infectious diseases and pediatric infectious diseases" nephrology ", " General practice (family medicine) ", which provides integration with these disciplines" vertically "and the formation of skills for further study and application in professional activities.

**Expected learning outcomes. As a result of studying the discipline, students have:**

1. To determine the etiological and pathogenetic factors of the most common somatic diseases of childhood.
2. Classify and analyze the typical clinical picture of the most common somatic diseases of childhood.
3. Make a plan of examination and analyze the data of laboratory and instrumental examinations in the typical course of the most common to demonstrate mastery of the principles of treatment, rehabilitation and prevention of the most common somatic diseases of childhood.
4. Diagnose and provide emergency care for the most common somatic diseases of childhood.
5. Assess the prognosis of the most common somatic diseases of childhood.
6. Demonstrate mastery of moral and deontological principles of a medical specialist and the principles of professional subordination in pediatrics.

According to the method of organization, practical classes are clinical, aimed at controlling the assimilation of theoretical material and the formation of practical skills, as well as the ability to analyze and apply the acquired knowledge to solve practical problems; they provide:

- collecting history;
- examination of a sick child;
- planning the examination of a sick child;
- interpretation of laboratory and instrumental research data;
- conducting differential diagnosis of the most common diseases of childhood with a typical course;
- determination of the preliminary clinical diagnosis;
- determination of therapeutic tactics;
- appointment of medical nutrition;
- providing emergency medical care;
- situational solutions
- on models and at the bedside of a sick child;
- keeping medical records.

According to the requirements of the educational-professional program, students must

**know:**

- identification, prevalence, classification, etiology and pathogenesis of the most common diseases of infants, children with endocrine, hematological diseases and childhood infectious diseases;

- clinical manifestations in the uncomplicated and complicated course of the most common diseases of infants, children with endocrine, hematological diseases and childhood infectious diseases;
- criteria for establishing a preliminary clinical diagnosis in the most common diseases of infants, children with endocrine, hematological diseases and childhood infectious diseases;
- plan of laboratory and instrumental examination of children with the most common diseases of infants, children with endocrine, hematological diseases and children's infectious diseases;
- differential diagnosis of the most common diseases of infants, children with endocrine, hematological diseases and childhood infectious diseases;
- criteria for establishing a final clinical diagnosis in the most common diseases of infants, children with endocrine, hematological diseases and childhood infectious diseases;
- treatment of the most common diseases of infants, children with endocrine, hematological diseases and childhood infectious diseases;
- protocol of first aid for the most common diseases of infants, children with endocrine, hematological diseases and childhood infectious diseases;
- prevention of the most common diseases of newborns, children with endocrine, hematological diseases and childhood infectious diseases. Organization of anti-epidemic measures in the center of the most common infectious diseases in children. Calendar of preventive vaccinations;
- prognosis for the most common diseases of infants, children with endocrine, hematological diseases and childhood infectious diseases;
- basic principles of medical ethics and deontology in professional communication with a sick child and persons caring for a child.

***be able:***

- determine the etiology and pathogenetic factors of neonatal diseases and the most common childhood non-communicable diseases;
- to determine the features of diseases of newborns and to make a preliminary clinical diagnosis;
- to identify various clinical variants and complications of the most common diseases of childhood;
- determine the tactics of the patient with the most common diseases of childhood;
- demonstrate mastery of the principles of treatment, rehabilitation and prevention of diseases of newborns and the most common childhood non-communicable diseases;
- demonstrate the ability to maintain medical records in the pediatric clinic;
- plan examinations and interpret laboratory data in the typical course of diseases of newborns and the most common childhood non-communicable diseases;
- demonstrate mastery of moral and deontological principles of a medical specialist and the principles of professional subordination in a pediatric clinic;
- to carry out differential diagnostics and to make the preliminary diagnosis of diseases of newborns and the most widespread children's non-communicable diseases;
- diagnose and provide emergency care for major emergencies in newborns and children with the most common non-communicable diseases;
- to make a life forecast for the most common somatic diseases of childhood;
- to determine the etiological and pathogenetic factors of the most common infectious diseases of children;
- distinguish the features of the clinical course of the most common infectious diseases of children;
- make a preliminary diagnosis of the most common infectious diseases of children;
- determine the tactics of managing a child with the most common infectious diseases;
- identify the main areas of treatment of the most common infectious diseases in children;
- identify preventive and anti-epidemic measures for the most common infectious diseases of children.

The developed program corresponds to the *educational-professional program (OPP)* and is focused on the formation of *competencies*:

**general (ZK) - ZK1-ZK3 OPP:**

ZK1. Ability to abstract thinking, analysis and synthesis, the ability to learn and master modern knowledge.

ZK2. Ability to apply knowledge in practical situations.

ZK3. Knowledge and understanding of the subject area and understanding of professional activity.

**professional (FC) - FC1- FC 9, FC11, FC16, FC18 OPP:**

- Patient interviewing skills.
- Ability to determine the required list of laboratory and instrumental studies and evaluate their results.
- Ability to establish a preliminary and clinical diagnosis of the disease.
- Ability to determine the required mode of work and rest in the treatment of diseases.
- Ability to determine the nature of nutrition in the treatment of diseases.
- Ability to determine the principles and nature of disease treatment.
- Ability to diagnose emergencies.
- Ability to determine the tactics of emergency medical care.
- Emergency care skills.
- Skills to perform medical manipulations.
- Ability to determine the tactics of management of persons subject to dispensary supervision.
- Ability to keep medical records.

According to the educational-professional program, the expected *program learning outcomes (PRN)* include the skills of *PRN11, PRN13-18, PRN22, PRN25, PRN28, PRN30, PRN32, PRN33, PRN35, PRN41 OPP* :

- Collect data on patient complaints, medical history, life history ( including professional history), in a health care facility, its unit or at the patient's home, using the results of the interview with the patient, according to the standard scheme of the patient. Under any circumstances (in a health care facility, its unit, at the patient's home , etc.), using knowledge about the person, his organs and systems, according to certain algorithms:

- collect information about the general condition of the patient (consciousness, constitution) and appearance (examination of the skin, subcutaneous fat layer, palpation of lymph nodes, thyroid and mammary glands);

- assess the psychomotor and physical development of the child;

- examine the condition of the cardiovascular system (examination and palpation of the heart and superficial vessels, determination of percussion boundaries of the heart and blood vessels, auscultation of the heart and blood vessels);

- examine the condition of the respiratory organs (examination of the chest and upper respiratory tract, palpation of the chest, percussion and auscultation of the lungs);

- examine the condition of the abdominal cavity (examination of the abdomen, palpation and percussion of the intestines, stomach, liver, spleen, palpation of the pancreas, kidneys, pelvic organs, finger examination of the rectum);

- examine the condition of the musculoskeletal system (examination and palpation);

- examine the state of the nervous system;

- examine the condition of the genitourinary system;

- to assess the state of fetal development according to the calculation of fetal weight and auscultation of his heartbeat.

In the conditions of the health care institution, its subdivision and among the attached population:

- Be able to identify and record the leading clinical symptom or syndrome (according to list 1) by making an informed decision, using preliminary data of the patient's history, physical examination of

the patient, knowledge of the person, his organs and systems, adhering to relevant ethical and legal norms.

- Be able to establish the most probable or syndromic diagnosis of the disease (according to list 2) by making an informed decision, by comparing with standards, using previous history and examination of the patient, based on the leading clinical symptom or syndrome, using knowledge about the person, his organs and system, adhering to the relevant ethical and legal norms.

In the conditions of a health care institution, its subdivision:

- Assign a laboratory and / or instrumental examination of the patient (according to list 4) by making an informed decision, based on the most probable or syndromic diagnosis, according to standard schemes, using knowledge about the person, his organs and systems, adhering to relevant ethical and legal norms.

- Carry out differential diagnosis of diseases (according to list 2) by making an informed decision, according to a certain algorithm, using the most probable or syndrome diagnosis, laboratory and instrumental examination of the patient, knowledge of the person, his organs and systems, adhering to ethical and legal norms.

- Establish a preliminary clinical diagnosis (according to list 2) by making an informed decision and logical analysis, using the most probable or syndromic diagnosis, laboratory and instrumental examination of the patient, conclusions of differential diagnosis, knowledge of man, his organs and systems, adhering to relevant ethical and legal norms .

- Determine the desired mode of work and rest in the treatment of disease (2 on the list), in terms of health care facility, home of the patient and during medical evacuation in t. H. In field conditions, based on previous clinical diagnosis using knowledge of man, his organs and systems, adhering to the relevant ethical and legal norms, by making an informed decision according to existing algorithms and standard schemes.

- Determine the necessary medical nutrition in the treatment of the disease (according to list 2), in a health care facility, at the patient's home and at the stages of medical evacuation, including in the field on the basis of a preliminary clinical diagnosis, using knowledge about the person, his bodies and systems, adhering to the relevant ethical and legal norms, by making an informed decision according to existing algorithms and standard schemes.

- To determine the nature of the treatment (conservative, surgical) disease (2 on the list), in terms of health care facility, home of the patient and the stages of medical evacuation in t. H. In field conditions on the basis of previous clinical diagnosis using knowledge of human , its bodies and systems, adhering to the relevant ethical and legal norms, by making an informed decision according to existing algorithms and standard schemes.

- To determine the principles of treatment of the disease (2 on the list), in terms of establishment health care, home of the patient and on the stages of medical evacuation in t. H. The field, based on previous clinical diagnosis using knowledge of a person of organs and systems , adhering to the relevant ethical and legal norms, by making an informed decision according to existing algorithms and standard schemes.

- Establish a diagnosis (according to list 3) by making an informed decision and assessing the human condition, under any circumstances (at home, on the street, health care facility, its units), including in an emergency, in the field , in conditions of lack of information and limited time, using standard methods of physical examination and possible anamnesis, knowledge about the person, his organs and systems, adhering to the relevant ethical and legal norms.

- Perform medical manipulations (according to list 5) in a medical institution, at home or at work on the basis of previous clinical diagnosis and / or indicators of the patient's condition, using knowledge about the person, his organs and systems, adhering to relevant ethical and legal norms, by making informed decisions and using standard techniques.

- To form, in the conditions of a health care institution, its division on production, using the generalized procedure of an estimation of a state of human health, knowledge of the person, its bodies and systems, adhering to the corresponding ethical and legal norms, by acceptance of the reasonable decision, among the fixed contingent of the population. : dispensary groups of patients;

- groups of healthy people subject to dispensary supervision (newborns, children, adolescents, pregnant women, representatives of professions that must undergo a mandatory dispensary examination).

- Organize secondary and tertiary prevention measures among the assigned population, using a generalized procedure for assessing human health (screening, preventive medical examination, seeking medical care), knowledge about the person, his organs and systems, adhering to the relevant ethical and legal norms, by making an informed decision, in a health care facility, in particular:

to form groups of dispensary supervision;

- to organize medical and health-improving measures differentiated from the group of medical examination.

- Carry out in the conditions of a health care institution, its subdivision:

- • detection and early diagnosis of infectious diseases (according to list 2);

- \* primary anti-epidemic measures in the center of an infectious disease.

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- In the health care facility, or at the patient's home on the basis of the obtained data on the patient's health, using standard schemes, using knowledge about the person, his organs and systems, adhering to relevant ethical and legal norms, by making an informed decision:

- • to determine the tactics of examination and secondary prevention of patients subject to dispensary supervision;

- • to determine the tactics of examination and primary prevention of healthy persons subject to dispensary supervision;

- • calculate and prescribe the necessary food for children in the first year of life.

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- Determine the presence and degree of restrictions on life, type, degree and duration of disability with the issuance of relevant documents in a health care institution on the basis of data on the disease and its course, features of professional activity.

- On the territory of service according to standard methods of descriptive, analytical epidemiological and medical-statistical researches:

- • to conduct screening for the detection of major non-communicable diseases;

- • evaluate the dynamics and in comparison with the average static data of morbidity, including chronic non-communicable diseases, disability, mortality, integrated health indicators;

- identify risk factors for the occurrence and course of diseases;

to form risk groups of the population. In the conditions of the health care institution, its subdivision and among the attached population:

• Be able to identify and record the leading clinical symptom or syndrome (according to list 1) by making an informed decision, using preliminary data of the patient's history, physical examination of the patient, knowledge of the person, his organs and systems, adhering to relevant ethical and legal norms.

• Be able to establish the most probable or syndromic diagnosis of the disease (according to list 2) by making an informed decision, by comparing with standards, using previous history and examination of the patient, based on the leading clinical symptom or syndrome, using knowledge about the person, his organs and system, adhering to the relevant ethical and legal norms.

In the conditions of a health care institution, its subdivision:

• Assign a laboratory and / or instrumental examination of the patient (according to list 4) by making an informed decision, based on the most probable or syndromic diagnosis, according to standard

schemes, using knowledge about the person, his organs and systems, adhering to relevant ethical and legal norms.

- Carry out differential diagnosis of diseases (according to list 2) by making an informed decision, according to a certain algorithm, using the most probable or syndromic diagnosis, laboratory and instrumental examination of the patient, knowledge about the person, his organs and systems, adhering to ethical and legal norms.

- Establish a preliminary clinical diagnosis (according to list 2) by making an informed decision and critical analysis, using the most probable or syndromic diagnosis, laboratory and instrumental examination of the patient, the conclusions of differential diagnosis, knowledge of man, his organs and systems, adhering to relevant ethical and legal norms

Determine the required mode of work and rest in the treatment of disease (2 on the list), in terms of health care facility, home of the patient and during medical evacuation in t. H. In field conditions, based on previous clinical diagnosis using knowledge of man, his organs and systems, adhering to the relevant ethical and legal norms, by making an informed decision according to existing algorithms and standard schemes.

Determine the necessary medical nutrition in the treatment of the disease (according to list 2), in a health care facility, at the patient's home and at the stages of medical evacuation, including in the field on the basis of a preliminary clinical diagnosis, using knowledge about the person, his bodies and systems, adhering to the relevant ethical and legal norms, by making an informed decision according to existing algorithms and standard schemes.

To determine the nature of the treatment (conservative, surgical) disease (2 on the list), in terms of health care facility, home of the patient and the stages of medical evacuation in t. H. In field conditions based on previous clinical diagnosis using knowledge of human , its bodies and systems, adhering to the relevant ethical and legal norms, by making an informed decision according to existing algorithms and standard schemes.

To determine the principles of treatment of the disease (2 on the list), in terms of establishment of health, home of the patient and during medical evacuation in t. H. The field, based on previous clinical diagnosis using knowledge of a person of organs and systems , adhering to the relevant ethical and legal norms, by making an informed decision according to existing algorithms and standard schemes.

- Establish a diagnosis (according to list 3) by making an informed decision and assessing the human condition, under any circumstances (at home, on the street, health care facility, its units), including in an emergency, in the field , in conditions of lack of information and limited time, using standard methods of physical examination and possible anamnesis, knowledge about the person, his organs and systems, adhering to the relevant ethical and legal norms.

- In the conditions of a health care institution or its subdivision according to standard methods:
  - • to select and use unified clinical protocols for the provision of medical care, developed on the basis of evidence-based medicine;
  - • take part in the development of local protocols for medical care;
  - • to control the quality of medical care on the basis of statistical data, expert evaluation and sociological research data using indicators of structure, process and results of activities;
  - • identify factors that hinder the improvement of the quality and safety of medical care.

### 3. The program of the discipline

The educational process is organized according to the European Credit Transfer and Accumulation System (ECTS).

The curriculum of the discipline "Pediatrics with pediatric infectious diseases with in-depth study of pediatric gastroenterology and pulmonology" consists of the following blocks:

**Block 1.** Neonatology, diseases of the respiratory, digestive and endocrine systems in children;

**Block 2.** Children's infectious diseases.



## **Block 1. Neonatology, diseases of the respiratory, digestive and endocrine systems in children**

### **Section 1. Neonatology**

#### **Topic 1. Organization of neonatal care in Ukraine. Medical care for a healthy newborn baby.**

Organization of neonatal care in Ukraine. Medical care for a healthy newborn baby. Issues of bioethics in modern neonatology.

#### **Topic 2. Premature babies. Children with intrauterine growth retardation.**

Criteria for determining prematurity. Features of adaptation of premature babies. Etiological factors of prematurity. Anatomical and physiological features. Classification of premature infants by birth weight and the ratio of physical development and gestational age. Assessment of morphological and neuro-functional maturity of premature infants (Ballard scale). Principles of you - ho - - d - chewing premature children in the hospital and on the second - th stage of nursing. Features feeding preterm CI - - dren. Emergency care for major emergencies in premature infants: hypothermia, respiratory failure, hypoglycemia. Intrauterine growth: when - or - us, postnatal diagnosis, treatment, prevention.

#### **3. Subject Asfiksiya novonarod - same - tion. Childbirth trauma.**

Asfiksiya novonarod - same - tion: etiology, pathogenesis, classification, clinic, diagnosis, differential diagnosis, treatment, prevention, prognosis. Primary resuscitation of newborns.

Childbirth trauma: etiology, pathogenesis, classification, clinic, diagnosis, differential diagnosis, treatment, prevention, prognosis.

#### **Topic 4. Respiratory distress syndrome of newborns (RDS). Neonatal pneumonia.**

Respiratory distress syndrome of newborns: etiology, pathogenesis, classification, clinic, diagnosis, differential diagnosis, treatment, prevention, prognosis.

Neonatal pneumonia: etiology, pathogenesis, classification, clinic, diagnosis, differential diagnosis, treatment, prevention, prognosis.

#### **Topic 5. Hemolytic disease of the newborn (GHN). Hemorrhagic disease of newborns.**

Hemolytic disease of newborns: etiology, pathogenesis, classification, clinic, diagnosis, differential diagnosis, treatment, prevention, prognosis.

Hemorrhagic disease of newborns: etiology, pathogenesis, classification, clinic, diagnosis, differential diagnosis, treatment, prevention, prognosis.

#### **Topic 6. Intrauterine infections of newborns (TORCH-infections).**

TORCH-infections of newborns: etiology, pathogenesis, clinic, diagnosis, differential diagnosis, treatment, prevention, prognosis.

**Topic 7. Bacterial infections of newborns.** Inflammatory diseases of the skin and subcutaneous fat newborns for - HVO - Ryu - tion umbilical cord, umbilical and umbilical vascular lesions: classification, etiology, pathogenesis, clinical manifestations, diagnosis, differential diagnosis, treatment, prevention, prognosis. Neonatal sepsis: definition, classification, etiology, pathogenesis, clinic, diagnosis, differential diagnosis, treatment, prevention, prognosis.

### **Section 2. Differential diagnosis of the most common diseases of the respiratory and digestive organs in children. Emergency care for major emergencies.**

**Topic 8. Differential diagnosis of pneumonia in children. Complications of pneumonia. Emergency care for acute respiratory failure in children.**

Leading clinical symptoms and syndromes in different clinical variants and complications of pneumonia in children. Data from laboratory and instrumental studies in different clinical variants of pneumonia and its complications. Differential diagnosis of pneumonia in children. Establishing a preliminary diagnosis. Tactics of patient management in different clinical variants of pneumonia and its complications. Emergency care for acute respiratory failure depending on the cause and severity. Prevention of pneumonia and its complications in children.

**Topic 9. Differential diagnosis of bronchial obstruction syndrome in children. Emergency care for severe asthma attacks in children.**

Leading clinical symptoms and syndromes in bronchial asthma, bronchiolitis, acute obstructive bronchitis in children. Features of bronchial asthma in children depending on the severity and level of control. Data of laboratory and instrumental research methods for bronchial asthma, bronchiolitis, acute obstructive bronchitis and their complications. Differential diagnosis of bronchial obstruction syndrome in children of different ages. Establishing a preliminary diagnosis. Tactics of patient management in different clinical variants of bronchoobstructive syndrome and its complications in children. Providing emergency care for asthmatic conditions. Prevention of bronchial asthma and bronchial obstruction syndrome in children of different ages. Dispensary observation.

**Topic 10. Differential diagnosis of hereditary, congenital and chronic diseases of the bronchopulmonary system in children.**

Leading clinical symptoms and syndromes in chronic bronchitis, bronchiectasis, hereditary and congenital diseases of bronchopulmonary system (cystic fibrosis, idiopathic hemosiderosis pulmonary primary ciliary dyskinesia, a syndrome Wilms Campbell, bronhomalyatsiyi, aplasia and hypoplasia of lung deficiency  $\alpha$  1 - antitrypsin, bronchopulmonary dysplasia, lung sequestration) in children. Data of laboratory and instrumental research methods in chronic bronchitis, bronchiectasis, hereditary and congenital diseases of the bronchopulmonary system and their complications. Differential diagnosis of chronic, hereditary and congenital diseases of the bronchopulmonary system in children. Tactics of patient management in hereditary, congenital and chronic diseases of the bronchopulmonary system and their complications in children. Prevention of hereditary, congenital and chronic diseases of the bronchopulmonary system in children. Dispensary observation.

**Topic 11. Differential diagnosis of functional and organic diseases of the stomach and intestines in children.**

Leading clinical symptoms and syndromes in functional and organic diseases of the stomach and intestines in children (functional dyspepsia, irritable bowel syndrome, functional constipation, functional diarrhea, gastroesophageal reflux disease, acute and chronic gastritis, gastric ulcer and duodenal ulcer and duodenal ulcer, celiac disease, cystic fibrosis, Crohn's disease, nonspecific ulcerative colitis). Examination and differential diagnosis of functional and organic diseases of the stomach and intestines in children. Clinical variants of functional and organic diseases of the stomach and intestines in children. Tactics of children with functional and organic diseases of the stomach and intestines. Emergency care for gastric bleeding. Prevention and dispensary observation of functional and organic diseases of the stomach and intestines in children.

**Section 3. Diseases of the endocrine system in children**

**Topic 12. Diabetes mellitus in children.**

Diabetes mellitus in children: definition, etiology, pathogenesis, classification, clinic, diagnosis, differential diagnosis, treatment, prevention, prognosis. Acute and chronic complications of diabetes mellitus in children. Hyperglycemic ketoacidotic and hypoglycemic coma in children: causes, pathogenesis, clinic, diagnosis, differential diagnosis, emergency care, prevention.

**Topic 13. Thyroid disease in children.**

Classification of thyroid diseases in children. Etiology, pathogenesis, clinic, diagnosis, differential diagnosis, treatment, prevention and prognosis of diffuse toxic goiter, hypothyroidism, autoimmune thyroiditis, endemic goiter in children. Emergency care for thyrotoxic crisis in children.

**Topic 14. Diseases of the hypothalamic-pituitary system and gonads in children.** Etiology, pathogenesis, classification, clinic, diagnosis, differential diagnosis, treatment, prevention, prognosis of growth pathology and gonadal pathology in children.

**Block 2. Children's infectious diseases**

**Topic 1. Measles. Rubella. Varicella. Shingles.**

Etiology, epidemiology, pathogenesis, clinic of typical forms, complications. Congenital rubella. Principles of treatment. Specific prevention. Anti-epidemic measures in the center of infection.

**Topic 2. Scarlet fever. Pseudotuberculosis.**

Etiology, epidemiology, pathogenesis, clinic of typical forms, complications. Principles of treatment. Anti-epidemic measures in the center of infection.

**Topic 3. Diphtheria. Infectious mononucleosis.**

Etiology, epidemiology, pathomorphological features of different forms. Classification, clinic of typical forms and complications. Diagnosis. Principles of treatment. Specific prevention and anti-epidemic measures in the center of infection.

**Topic 4. Pertussis. Mumps infection.**

Etiology. Epidemiology. Classification. Clinical and pathogenetic features of different forms. Complication. Diagnosis. Principles of treatment. Specific prevention and anti-epidemic measures in the center of infection.

**Topic 5. Meningococcal infection.**

Etiology, epidemiology, pathogenesis. Classification. Clinic of various forms. Complication. Diagnosis. Consequences. Principles of treatment.

**Topic 6. Polio. Enterovirus infection.**

Etiology, epidemiology, pathogenesis. Classification. Clinic of various forms. Diagnosis. Consequences. Principles of treatment. Specific prevention and anti-epidemic measures in the center of infection.

**Topic 7. Acute respiratory viral infections (influenza, parainfluenza, adenoviral, respiratory syncytial, rhinovirus infection)**

Etiology, epidemiological features, pathogenesis. Clinical forms. Complication. Diagnosis. Principles of treatment and prevention.

**Topic 8. Acute intestinal infections (shigellosis, salmonellosis, Escherichia coli, intestinal yersiniosis, rotavirus infection).**

Etiology, epidemiology, pathogenesis. Classification. Clinic of typical forms in children of different ages. Complication. Laboratory diagnostics. Principles of treatment and prevention.

**Topic 9. Viral hepatitis A, B, C, D and others**

Etiology, epidemiological features, pathogenesis. Classification. Clinic of various forms. Laboratory diagnostics. Principles of treatment and prevention.

**Topic 10. HIV / AIDS in children. AIDS-opportunistic infections (pneumocystis, candidiasis, cryptococcal infection and others).**

Epidemiological features in children. Clinical and laboratory diagnosis of AIDS opportunistic infections. Principles of treatment. Prevention of congenital HIV infection.

**Topic 11. TORCH-infections (toxoplasmosis, cytomegalovirus infection, herpes infection).**

Etiology, epidemiology, pathogenesis. Clinic of acquired and congenital forms. Laboratory diagnostics. Principles of treatment and prevention.

**The structure of the discipline  
"Pediatrics with pediatric infectious diseases with in-depth study of pediatric gastroenterology and pulmonology"**

| Names of blocks and topics   | Number of hours |          |                    |             |        |
|--|-----------------|----------|--------------------|-------------|--------|
|  | Total           | Lectures | Practical training | CPC         |        |
|  |                 |          |                    | Individual. | Alone. |
| <b>BLOCK 1. Neonatology, diseases of the respiratory, digestive and endocrine systems in children</b>  |                 |          |                    |             |        |
| <b>Section 1. Neonatology</b>  |                 |          |                    |             |        |
| 1 Organization of neonatal care in Ukraine. Medical care for a healthy newborn baby.   | 5               |          | 3                  |             | 2      |
| 2. Premature babies. Children with intrauterine growth retardation.  | 5               |          | 3                  |             | 2      |
| 3. Asphyxia of newborns. Maternity trauma of newborns  | 7               | 2        | 3                  |             | 2      |
| 4. Respiratory distress syndrome of newborns. Neonatal pneumonia   | 5               |          | 3                  |             | 2      |
| 5. Hemolytic disease of newborns. Hemorrhagic disease of newborns.   | 5               |          | 3                  |             | 2      |
| 6. Intrauterine infections of newborns (TORCH-infections)  | 5               |          | 3                  |             | 2      |
| 7. Bacterial infections of newborns  | 5               |          | 3                  |             | 2      |
| <b>Section 2 Differential diagnosis of the most common respiratory and digestive diseases in children. Emergency care for major emergencies.</b> |                 |          |                    |             |        |
| 8. Differential diagnosis of pneumonia in children. Complications of pneumonia. Emergency care for acute respiratory failure in children.        | 7               | 2        | 3                  |             | 2      |
| 9. Differential diagnosis of bronchial obstruction syndrome in children. Emergency care for severe asthma attacks in children.                   | 5               |          | 3                  |             | 2      |
| 10. Differential diagnosis of hereditary, congenital and chronic diseases of the bronchopulmonary system in children.                            | 5               |          | 3                  |             | 2      |

| Names of blocks and topics   | Number of hours |           |                    |             |           |
|--|-----------------|-----------|--------------------|-------------|-----------|
|  | Total           | Lectures  | Practical training | CPC         |           |
|  |                 |           |                    | Individual. | Alone.    |
| 11. Differential diagnosis of functional and organic diseases of the stomach and intestines in children. | 6               |           | 4                  |             | 2         |
| <b>Section 3. Diseases of the endocrine system in children</b>   |                 |           |                    |             |           |
| 12. Diabetes mellitus in children  | 7               | 2         | 3                  |             | 2         |
| 13. Diseases of the thyroid gland in children  | 6               |           | 4                  |             | 2         |
| 14. Diseases of the hypothalamic-pituitary system and gonads in children                                 | 7               |           | 4                  |             | 3         |
| Individual work: Curation of the patient, writing and protection of medical history                      | 6               |           |                    | 6           |           |
| <b>Final control № 1</b>   | <b>10</b>       |           | <b>5</b>           |             | <b>5</b>  |
| <b>Total hours from block 1</b>  | <b>96</b>       | <b>6</b>  | <b>50</b>          | <b>6</b>    | <b>34</b> |
| <b>BLOCK 2. Children's infectious diseases</b>   |                 |           |                    |             |           |
| 1. Measles, rubella, chicken pox, shingles   | 4               |           | 2                  |             | 2         |
| 2. Scarlet fever, pseudotuberculosis   | 4               |           | 2                  |             | 2         |
| 3. Diphtheria, infectious mononucleosis  | 4               |           | 2                  |             | 2         |
| 4. Pertussis, mumps infection  | 4               |           | 2                  |             | 2         |
| 5. Meningococcal infection   | 4               |           | 2                  |             | 2         |
| 6. Polio, enterovirus infection  | 4               |           | 2                  |             | 2         |
| 7. SARS  | 4               |           | 2                  |             | 2         |
| 8. Acute intestinal infections   | 6               | 2         | 2                  |             | 2         |
| 9. Viral hepatitis   | 4               |           | 2                  |             | 2         |
| 10. HIV / AIDS in children. AIDS-opportunistic infections  | 5               | 2         |                    |             | 3         |
| 11. TORCH-infection  | 3               |           |                    |             | 3         |
| 12. Curation of patients, writing and protection of medical history                                      | 4               |           |                    | 4           |           |
| <b>Final control № 2</b>   | <b>4</b>        |           | <b>2</b>           |             | <b>2</b>  |
| <b>Total hours from block 2</b>  | <b>54</b>       | <b>4</b>  | <b>20</b>          | <b>4</b>    | <b>26</b> |
| <b>TOTAL HOURS FROM THE DISCIPLINE</b>   | <b>150</b>      | <b>10</b> | <b>70</b>          | <b>10</b>   | <b>60</b> |
|  |                 |           |                    | <b>70</b>   |           |

#### 4. The content of the discipline

##### 4.1. Lecture topics

| № s / n   | Name topics | Number of hours |
|---|-------------|-----------------|
| <b>BLOCK 1. Neonatology, diseases of the respiratory, digestive and endocrine systems in children</b> |             |                 |

| <b>№ s / n</b>                                 | <b>Name topics</b>   | <b>Number of hours</b> |
|--|--|------------------------|
| 1.   | Asphyxia of newborns. Maternity trauma of newborns   | 2                      |
| 2.   | Differential diagnosis of pneumonia in children. Complications of pneumonia. Emergency care for acute respiratory failure in children. | 2                      |
| 3.   | Diabetes mellitus in children  | 2                      |
| <b>Total from block 1</b>                      |  | <b>6</b>               |
| <b>BLOCK 2. Children's infectious diseases</b> |  |                        |
| 1.   | Acute intestinal infections in children.   | 2                      |
| 2.   | HIV / AIDS in children. AIDS-opportunistic infections  | 2                      |
| <b>Total from block 2</b>                      |  | <b>4</b>               |
| <b>TOTAL FROM THE DISCIPLINE</b>               |  | <b>10</b>              |

#### **4.2. Topics of practical classes**

(seminar and laboratory classes are not provided by the program)

| <b>№ s / n</b>  | <b>Name topics</b>   | <b>Number of hours</b> |
|---|--|------------------------|
| <b>BLOCK 1. Neonatology, diseases of the respiratory, digestive and endocrine systems in children</b> |  |                        |
| 1.  | Organization of neonatological care in Ukraine.<br>Medical care for a healthy newborn baby   | 3                      |
| 2.  | Features of adaptation of premature newborns.<br>Organization of care and feeding of premature babies                                  | 3                      |
| 3.  | Newborn asphyxia<br>Newborn birth trauma   | 3                      |
| 4.  | Respiratory distress syndrome and pneumonia in newborns  | 3                      |
| 5.  | Hemolytic and hemorrhagic diseases of newborns   | 3                      |
| 6.  | Intrauterine infections of the newborn (TORCH - infections)  | 3                      |
| 7.  | Bacterial infections in newborns   | 3                      |
| 8.  | Differential diagnosis of pneumonia in children. Complications of pneumonia. Emergency care for acute respiratory failure in children. | 3                      |
| 9.  | Differential diagnosis of bronchial obstruction syndrome in children. Emergency care for severe asthma attacks in children.            | 3                      |
| 10.   | Differential diagnosis of hereditary, congenital and chronic diseases of the bronchopulmonary system in children.                      | 3                      |
| 11.   | Differential diagnosis of functional and organic diseases of the stomach and intestines in children.                                   | 4                      |
| 12.   | Diabetes mellitus in children  | 3                      |

| <b>№ s / n</b>                                 | <b>Name topics</b>   | <b>Number of hours</b> |
|--|--|------------------------|
| 13.  | Thyroid disease in children  | 4                      |
| 14.  | Diseases of the hypothalamic-pituitary system and gonads in children   | 4                      |
| 15.  | Final control, including<br>Test-control of theoretical training<br>Control of practical skills<br>Solving situational problems<br>Interview | 5                      |
| <b>Total from block 1</b>                      |  | <b>50</b>              |
| <b>BLOCK 2. Children's infectious diseases</b> |  |                        |
| 1.   | Measles, rubella, chicken pox, shingles  | 2                      |
| 2.   | Scarlet fever, pseudotuberculosis  | 2                      |
| 3.   | Diphtheria, infectious mononucleosis   | 2                      |
| 4.   | Pertussis, mumps infection   | 2                      |
| 5.   | Meningococcal infection  | 2                      |
| 6.   | Polio, enterovirus infection   | 2                      |
| 7.   | SARS   | 2                      |
| 8.   | Acute intestinal infections  | 2                      |
| 9.   | Viral hepatitis  | 2                      |
| 10.  | Final control, including<br>Test-control of theoretical training<br>Control of practical skills<br>Solving situational problems<br>Interview | 2                      |
| <b>Total from block 2</b>                      |  | <b>20</b>              |
| <b>TOTAL FROM THE DISCIPLINE</b>               |  | <b>70</b>              |

### 4.3. Individual work

The main types of independent work of students are:

- Pre-classroom preparation for practical classes
- Performing individual work
- Mastering the topics that are made for independent work
- Preparation for the final control

| <b>№ s / n</b>  | <b>Topic title (or content of the work)</b> | <b>Number of hours</b> |
|---|---|------------------------|
| <b>BLOCK 1. Neonatology, diseases of the respiratory, digestive and endocrine systems in children</b> |   |                        |

| <b>№ s / n</b>                                 | <b>Topic title (or content of the work)</b>  | <b>Number of hours</b> |
|--|--|------------------------|
| 1.   | Preparation for practical classes  | 29                     |
| 2.   | Performing individual work: curation of patients, writing and defense of medical history | 6                      |
| 3.   | Preparation for final control № 1  | 5                      |
| <b><i>IN this from block 1</i></b>             |  | <b>40</b>              |
| <b>BLOCK 2. Children's infectious diseases</b> |  |                        |
| 1.   | Preparation for practical classes  | 18                     |
| 2.   | Performing individual work: curation of patients, writing and defense of medical history | 4                      |
| 3.   | Mastering the topics that are made for independent work                                  | 6                      |
| 4.   | Preparation for the final control № 2  | 2                      |
| <b><i>IN this from block 2</i></b>             |  | <b>30</b>              |
| <b>TOGETHER WITH THE DISCIPLINE</b>            |  | <b>70</b>              |

### **Individual tasks**

#### **BLOCK 1: Neonatology, diseases of the respiratory, digestive and endocrine systems in children**

In order to deepen, generalize and consolidate the knowledge that students receive in the learning process, as well as the application of this knowledge in practice, as a mandatory individual task with certain assessment criteria, curation of patients with writing and defense of medical history considered.

#### **BLOCK 2: Children's infectious diseases**

In order to deepen, generalize and consolidate the knowledge that students receive in the learning process, as well as the application of this knowledge in practice, as a mandatory individual task with certain assessment criteria, curation of patients with writing and defense of educational history of childhood infectious diseases.

### **Typical test problems to be solved in practical classes**

1 A boy born from the second full-term pregnancy, II childbirth at the end of the first day of life appears jaundice. The general condition of the child is satisfactory. Child's blood group B (III) Rh (+), mother's blood group A (II) Rh (-). Name an additional examination that will confirm the previous diagnosis.

*A* Coombs' direct test

*B* General blood test

*C* Serum bilirubin content

*D* Determination of osmotic resistance of erythrocytes

*E* Determination of serum transaminase activity



2 In a transferred child (gestational age 44 weeks, body weight at birth 4100 g), 6 hours after birth, focal seizures appeared. Neurological examination at 72 hours of age revealed focal neurological disorders: hemiparesis on the right, deviation of the eyes to the side, opposite to hemiparesis; asymmetric dilation of the pupils (right pupil is larger). Neurosonography - a slight increase in echogenicity of the brain, transillumination of the skull - a limited focus of reduced glow over the right temporal area. The cerebrospinal fluid is normal. Preliminary diagnostic result:

- A* Childbirth trauma, subdural hemorrhage
- B* Childbirth trauma, cephalohematoma
- C* Hypoxic-ischemic encephalopathy
- D* Intraventricular hemorrhage
- E* Meningoencephalitis

3 A full-term newborn boy (birth weight 3900g, gestational age 39 weeks) developed respiratory disorders on the first day of life: shortness of breath, arrhythmic breathing, cyanosis attacks. At inspection paradoxical breath and lag in the act of breath of the left part of a thorax is observed. Auscultatory on the left - weakened breathing and strengthening wet rales. A neurologist diagnosed Duchenne-Erb's left paresis. No changes were found in the general blood test. Preliminary diagnosis?

- A* Left paresis of the diaphragm
- B* Congenital pneumonia
- C* Respiratory distress syndrome
- D* Transient tachypnea of newborns
- E* Left pneumothorax

4 The newborn, who required resuscitation, now has central cyanosis, despite oxygen therapy with a free flow of 100 % oxygen through the mask, as well as a heart rate of 140 / min and the presence of adequate self-breathing. Which of the following measures should be considered the most appropriate at this time?

- A* Conducting mechanical ventilation
- B* Increasing the temperature of the beam heater
- C* Conducting tactile stimulation
- D* Introduction of naloxone
- E* Introduction of adrenaline

5 Amniotic fluid heavily contaminated with meconium is gone. After the birth of the head, the contents of the mouth, pharynx and nose were thoroughly aspirated. After birth, the baby is immediately transferred to the intensive care unit, under a source of radiant heat. Pale skin, muscular hypotension and lack of independent breathing are noteworthy. At this point you need:

- A* Intubate the trachea and aspirate the contents of the lower respiratory tract
- B* Wipe the baby's skin immediately
- C* Conduct tactile stimulation
- D* Begin artificial lung ventilation with a bag and mask.
- E* Start indirect heart massage

#### **4.4. Ensuring the educational process**

1. Multimedia projectors, computers, screens for multimedia presentations, lecture presentations.
2. Demonstration screens, laptops, files in Power Point and Word with tasks "Step-2" for practical and final classes.
3. Exam tickets.

### **5. Final control**

#### **List of questions for the final control of block 1.**

##### **Neonatology, diseases of the respiratory, digestive and endocrine systems in children**

1. Organization of neonatal care in Ukraine.

2. Medical care for a healthy newborn baby.
3. Medical care for a newborn baby with low birth weight.
4. Definition of "prematurity". Classification of premature infants according to the indicator "body weight at birth" and the ratio of physical development and gestational age.

5. Causes of fetal growth retardation. Features of adaptation of children with ZVUR and principles of nursing.

6. Assessment of morphological and neuro-functional maturity of premature infants (on the Ballard scale).

7. Features of thermoregulation of premature babies, methods of hypothermia prevention.

8. Prevention and treatment of hypoglycemia in premature infants.

9. Mechanisms of development of hyperbilirubinemia of premature infants, possible consequences. Driving tactics.

10. Emergency care for apnea in premature babies. Indications for the use of artificial lung ventilation. Complications of prolonged mechanical ventilation: bronchopulmonary dysplasia, retinopathy of prematurity.

11. Stages of nursing premature babies. Principles of transportation. Criteria for discharge from the hospital. Peculiarities of dispensary observation of premature children in the polyclinic. Prevention of anemia, lactase deficiency, dysbacteriosis, rickets.

12. Principles of breastfeeding premature infants. The choice of feeding method depending on the gestational age and condition of the child.

13. Etiological, clinical and laboratory criteria for the diagnosis of " neonatal asphyxia ", the pathogenesis of asphyxia. Criteria for the severity of asphyxia.

14. Primary resuscitation of newborns and post-resuscitation care for newborns.

15. Definition of the term "birth trauma" and factors of its development.

16. Childbirth injuries of soft tissues. Adiponecrosis. Damage to the sternoclavicular-mammary muscle. Differential diagnosis of labor and cephalohematoma.

17. Childbirth injury of the spinal cord and humeral plexus. Paresis and paralysis of Duchenne-Erb, Degerin-Klumpke.

18. Differential diagnosis of intracranial hemorrhage of hypoxic and traumatic origin in newborns.

19. The concept of the surfactant system of the lungs. Factors of RDS development in newborns. Methods of antenatal prevention.

20. Assessment of the severity of respiratory failure in RDS. RDS diagnostics.

21. Principles of treatment of RDS in newborns.

22. Classification of pneumonia in newborns depending on the route and duration of infection. Etiology.

23. Risk factors for pneumonia in newborns. Pathogenesis. Features of pneumonia in newborns depending on the route of infection and etiology.

24. Principles of diagnosis and treatment of pneumonia in newborns. Features of etiotropic therapy.

25. Erythrocyte antigenic systems of human blood. Etiology, pathogenesis of GHN. Classification. Clinical and laboratory criteria for anemic, icteric and edematous forms of GHN. Stages of bilirubin encephalopathy.

26. Methods of antenatal diagnosis and prevention of hemolytic disease of the fetus. Treatment of hemolytic disease of newborns. Indications for replacement blood transfusion surgery. The technique of the operation and its possible complications.

27. Features of the hemostasis system in newborns. Factors in the development of hemorrhagic disease. Clinical features of early, classical and late forms of hemorrhagic disease.

28. Differential diagnosis of hemorrhagic disease and "swallowed blood" syndrome. Emergency care for gastrointestinal bleeding. Treatment and prevention of hemorrhagic disease.

29. Definition of the term "TORCH infection". Risk factors for the development of VUI. The nature of the lesion in VUI depending on the time and route of infection of the fetus. Methods of early diagnosis and prevention of VUI.
30. Clinical manifestations of VUI depending on the etiology (congenital toxoplasmosis, rubella, neonatal herpes and cytomegalovirus infection). Principles of VUI treatment. Etiotropic and immunotherapy.
31. Bronchial asthma in children. Definition. Risk factors and pathophysiological mechanisms of bronchial asthma. Classification, clinic, diagnosis, treatment and prevention of bronchial asthma in children, prognosis.
32. Asthmatic status in children. Etiology, pathogenesis, clinic, diagnosis, emergency care.
33. The most common BBC in children. Etiology, classification of heart defects, hemodynamics in the most common VVS in children (IBE defect, WFP defect, Fallot's tetrad, aortic coarctation, pulmonary artery stenosis, aortic stenosis, arterial vessel transposition and VAP). Emergency care for shortness of breath - cyanotic attack.
34. Issues of bioethics in modern perinatology and neonatology.
35. Leading clinical symptoms and syndromes in functional and organic diseases of the stomach and intestines in children
36. Functional dyspepsia, irritable bowel syndrome, functional constipation, functional diarrhea.
37. Examination and differential diagnosis of functional and organic diseases of the stomach and intestines in children.
38. Clinical variants of the course of functional and organic diseases of the stomach and intestines in children.
39. Tactics of children with functional and organic diseases of the stomach and intestines.
40. Emergency care for gastric bleeding.
41. Prevention and dispensary observation of functional and organic diseases of the stomach and intestines in children.
42. Differential diagnosis of variants of intersexualism. Methods of research - ing. Principles of treatment.
43. Disorders of sexual development in boys and girls. Etiology, pathogenesis, clinic, diagnosis, differential diagnosis, treatment.
44. Clinic and diagnosis of adreno-genital syndrome in children. Treatment. Emergency care for the losing form of adreno-genital syndrome.
- 45.. Clinic and diagnosis of congenital hypothyroidism in children. Treatment. Forecast.
46. Diabetes mellitus in children. Etiology, pathogenesis, clinic, diagnosis. Peculiarities of the course of diabetes mellitus in early and adolescence. Criteria for compensation of diabetes mellitus in children.
47. Regime of insulin therapy of diabetes mellitus in children. Insulin preparations.
48. Features diyety with compensated and uncompensated diabetes dia - Be - those of children.
49. Hyperglycemic ketoacidotic coma in children. Causes, clinic, diagnosis, emergency care.
50. Hypoglycemic coma in children. Causes, clinic, diagnosis, emergency care.
51. Differential diagnosis of hyperglycemic and hypoglycemic coma in children.
52. Growth disorders in children. Pituitary dwarfism. Causes, clinic, differential diagnosis. Treatment and prognosis.
53. Obesity in children. Causes, clinical forms. Principles of complex treatment of different clinical forms ozhyrin - tion in children. Prevention.

54. Autoimmune thyroiditis in children. Etiology, pathogenesis, clinic, diagnosis, differential diagnosis, treatment, prognosis.

55. Diffuse toxic goiter in children. Etiology, pathogenesis, Clinic, diagnostics, differential diagnosis. Treatment. Forecast.

56. Endemic goiter in children. Causes, clinic, diagnosis, treatment, prevention.

57. Hypothyroidism in children. Etiology, pathogenesis, Clinic, early diagnostics - ka. Lie - forgings - tion, prognosis.

### **The list of practical skills, the acquisition of which is controlled during the final control of unit 1**

#### **I. Analysis of laboratory and instrumental studies in children**

1. General clinical blood test
2. General clinical analysis of urine
3. General analysis of feces
4. Creatinine, blood urea
5. Blood glucose
6. Lipid profile of blood
7. Blood electrolytes
8. Blood transaminases
9. Blood protein and its fractions, acute phase parameters
10. Total blood bilirubin and its fractions, analyze the Polachek curve
11. Coagulogram
12. General analysis of sternal punctate
13. Radiation examination of the CNS, thoracic and abdominal organs, urinary system, thyroid gland, skull, bones, joints.
14. Microbiological study of biological fluids and secretions
15. Polymerase chain reaction, enzyme-linked immunosorbent assay
16. ECG
17. General analysis of cerebrospinal fluid

#### **II. Medical manipulations in pediatrics**

1. To determine blood groups, rhesus affiliation in children
2. Perform artificial respiration, indirect heart massage in children
3. Measure blood pressure in children
4. Conduct the primary toilet of the newborn
5. Carry out ECG recording in children
6. Inject drugs into children

#### **III. Providing emergency care for children**

1. Asphyxia of newborns
2. Acute respiratory failure in newborns
3. Convulsive syndrome in children
4. Bleeding in children
5. Hemorrhagic shock in children
6. Hyperglycemic ketoacidotic and hypoglycemic coma in children
7. Thyrotoxic crisis in children

### **List of questions for the final control of block 2. Children's infectious diseases**

1. Features of the infectious process and immunity in children. Prophylaxis - teak childhood infectious diseases (specific and nonspecific). Organization prophylaxis - tation vaccinations for children.
2. Diphtheria. Etiology, epidemiology. Pathogenesis of various clinical forms. Diphtheria of the tonsils. Clinical forms. Complication. Diphtheria laryngotracheitis. Diphtheria of the nose, eyes, genitals, skin. Diagnosis. Treatment of diphtheria. Protydyfteriyna serum terms of efficiency - term action, method of administration. Prevention of diphtheria.
3. Scarlet fever. Etiology, epidemiology, pathogenesis. Classification of scarlet fever. Clinical picture of typical and atypical forms .. Complications. Treatment. Prevention.
4. Measles. Etiology, epidemiology, pathogenesis. Clinic of typical and atypical forms. Complication. Basic principles of treatment. Measles prevention.
5. Rubella. Etiology, pathogenesis. Clinic, diagnosis. Congenital rubella. Face - tion. Prevention.
6. Whooping cough. Etiology. Epidemiology. Pathogenesis. Clinic. Features of whooping cough in infants. Complicated - tion. Laboratory methods of diagnosis. Etiotropic and pathogenetic therapy of pertussis patients. Prevention.
7. Varicella. Etiology, epidemiology, pathogenesis. Clinical picture of typical and atypical forms of chickenpox. Complication. Treatment, prevention.
8. Shingles. Diagnosis. Treatment.
9. Herpes infection (herpes simplex). Etiology, ways of infection. Clinical forms, diagnosis. Treatment.
10. Mumps infection. Etiology, epidemiology. Classification. Clinic - for painting various forms of mumps (mumps, submaksylit, sublinhvit, pancreatitis, orchitis, meningitis, etc.). Treatment. Prevention.
11. Flu. Clinical course. Features in young children. Complications, their pathogenesis. Treatment. Prevention.
12. Parainfluenza and respiratory syncytial infections in children. Features of clinical manifestations. Treatment, prevention.
14. Adenovirus infection. Ways of transmission. Features of the course in young children. Treatment. Prevention.
11. Sore throats in children. Etiological features depending on age. Clinic. Diagnosis. Differential diagnosis. Treatment. Tactics of keeping patients with sore throats at home.
12. Meningococcal infection. Etiology. Epidemiology. Pathogenesis. Klee - Night shape. Clinical picture of meningococcal meningitis. Features of the course in children of the 1st year of life.
13. Meningococcemia, clinical picture. Laboratory diagnostics. Basic principles of treatment. Prevention. Emergency conditions with meningococcal infection (infectious toksyeh - tion shock, brain edema), diagnosis and treatment to prehospital and hospital.
14. Infectious mononucleosis. Etiology. Clinical picture. Labora - turn diagnostic methods. Basic principles of treatment.
19. Poliomyelitis. Etiology. Clinic. Treatment. Prevention.
20. Enterovirus infection. Etiology. Epidemiology. Clinical forms. Diagnosis. Treatment. Prevention.
21. Shigellosis in children. Incidence in different age groups. Clinic, diagnosis. Treatment. Prevention.
22. Salmonellosis in children. Etiology, pathogenesis. Clinical forms. Face - tion. Prevention.
23. Escherichia coli in children. Etiology. Clinical features in children of different ages depending on the pathogen. Treatment. Prevention.

24. Acute intestinal infections in newborns. Etiological structure. Clinical features. Diagnosis. Treatment.
25. Pseudotuberculosis. Epidemiological features in children. Pathogenesis. Clinic. Diagnosis. Treatment, prevention.
26. Intestinal yersiniosis. Features of epidemiology in children of different ages. Pathogenesis. Clinical forms. Diagnosis. Treatment. Prevention.
27. Rotavirus infection. Etiology, epidemiology, pathogenesis. Clinical picture. Treatment.
28. Viral hepatitis A. Etiology. Clinical picture in children. Laboratory diagnostics. Treatment. Prevention.
29. Viral hepatitis B. Etiology, pathogenesis. Features of the course in young children. Laboratory diagnostics. Principles of therapy.
30. Features of diagnosis and course of viral hepatitis C, D, E and others in children.
31. HIV / AIDS in children. Epidemiology. Clinic. Diagnosis. Treatment. Prevention.
32. TORCH-infections: toxoplasmosis, rubella, cytomegalovirus infection, herpes infection. Characteristics of pathogens, epidemiology, pathogenesis of congenital and acquired forms, clinical manifestations depending on the route and timing of infection. Laboratory diagnosis of acute, reactivated and latent forms. Principles of treatment and prevention.

**The list of practical skills, the acquisition of which is controlled during the final control of block 2. Children's infectious diseases**

**Analysis of laboratory and instrumental research**

1. General blood test
2. General analysis of urine
3. General analysis of cerebrospinal fluid
4. Coprogram
5. Serological reactions in infectious diseases
6. Bacteriological study of biological fluids and secretions
7. Immunological markers of infectious diseases
8. Blood bilirubin and its fractions
9. Alkaline phosphatase, thymol test, blood transaminases.

**"0" version of the exam ticket**

**Petro Mohyla Black Sea National University**

Educational qualification level - master

Field of knowledge: 22 Health care

specialty 222 Medicine

**Course - PEDIATRICS WITH CHILDREN'S INFECTIOUS DISEASES WITH IN-DEPTH STUDY OF CHILDREN'S GASTROENTEROLOGY AND PULMONOLOGY**

**Option № 0**

1. Differential diagnosis of pneumonia in children. Tactics of patient management in different clinical variants of pneumonia and its complications. - **maximum number of points - 20.**
2. Acute intestinal infections in newborns. Etiological structure. Clinical features. Diagnosis. Treatment. - **maximum number of points - 20.**
3. To record ECG in children - **the maximum number of points - 20.**
4. Emergency care for gastric bleeding. - **maximum number of points - 20.**

*Approved at the meeting of the Department of "therapeutic and surgical disciplines", the protocol № \_\_\_\_ from " \_\_ " \_\_\_\_\_ 2020.*

**Head of Department**            **s.n.s. Zack M.Yu.**

**Examiner**                    **Associate Professor B.Sc. Chernyshov OV**

### **An example of the final control work on block 1**

#### **Solving problems Step-2**

1 In a newborn baby on the mucous membrane of the mouth (cheeks, tongue, palate, gums) there are multiple dot-like plaques resembling semolina or cheese, then merge to form white films of various sizes and shapes, which are easily removed with a tampon, leaving a red shiny mucous membrane. What diagnosis can be made?

- A* Candidal stomatitis
- B* Aphthous stomatitis
- C* Red flat herpes
- D* Bubbles
- E* Herpes of the mucous membranes

2 Newborn baby 3 days. The course of pregnancy and childbirth without complications. She was born with a weight of 3300 g, an Apgar score of 8 points. The condition is satisfactory. There was jaundice. Child's blood group 0 (I) Rh negative, mother's blood group A (II) Rh (+). How to assess changes in skin color?

- A* Physiological jaundice
- B* Hemolytic disease of the newborn is caused by Rh incompatibility
- C* Hemolytic disease of the newborn is caused by ABO incompatibility
- D* Mechanical jaundice
- E* Jaundice in sepsis

3 A 3-day-old child with hyperbilirubinemia (428  $\mu\text{mol} / \text{l}$ ) developed disturbances in the form of periodic agitation, seizures, on the background of lethargy, hypotension, hypodynamics, depression of unconditioned reflexes, as well as convergent strabismus, rotational nystagmus, a symptom of "sleep". How to explain these symptoms?

- A* Bilirubin encephalopathy
- B* Traumatic brain injury
- C* Brain tumor
- D* Hydrocephalus
- E* Cerebral palsy

4 The newborn has a respiration rate of 26 beats per minute, heart rate of 90 beats per minute, blue skin, low muscle tone, and the baby responds to the suction of mucus and amniotic fluid with a catheter from the nose and mouth. Reflexes are reduced. Auscultatory over the lungs weakened vesicular respiration. Heart tones are sonorous. After 5 minutes, rhythmic breathing, 38 per 1 min., Heart rate - 120 per min. What is the most likely diagnosis?

- A* Asphyxia.
- B* Congenital heart disease.
- C* Childbirth trauma.
- D* Intracerebral hemorrhage.

*E* Hemolytic disease.

5 A premature newborn with stage II prematurity on the 6th day of life was diagnosed with neonatal focal pneumonia. What factors may have contributed to the development of pneumonia in this case?

- A* Scattered pulmonary atelectases.
- B* Low body weight of a premature baby.
- C* Massive meconium aspiration.
- D* Insufficient thermoregulation.
- E* Giberbilirubinemia

## 6. Evaluation criteria and tools for diagnosing learning outcomes

### Control methods

- Survey (testing of theoretical knowledge and practical skills).
- Test control.

**Current control.** Testing in practical classes of theoretical knowledge and the acquisition of practical skills, as well as the results of independent work of students. Supervised by teachers according to the specific purpose of the curriculum. Assessment of the level of students' training is carried out by: interviewing students, solving and analyzing situational tasks and test tasks, interpreting the results of clinical-instrumental and clinical-laboratory research, monitoring the acquisition of practical skills. Current control is carried out at each practical lesson in accordance with the specific objectives of each topic.

**Intermediate control.** Checking the possibility of students using for clinical and diagnostic analysis of theoretical knowledge and practical skills on all topics studied, as well as the results of independent work of students. Carried out in the last lesson on the topic by passing practical skills, solving situational problems and testing.

**The final control work (RCC)** is carried out upon completion of the study of all topics of each block in the last, control, lesson. To the PKR students which visited all the prescribed curriculum lectures, lecture classes, completed fully independent work in the learning process gained score not less than the minimum - **in the first block of 70 points in the second - 40** (see. lower)

In order to assess the results of training in pediatrics, the **final control** is conducted **in the form of an exam, which is recommended for academic disciplines, which is part of the integrated test exams EDKI and "Step-2"**. Students who have both PKRs are admitted to the exam.

### Evaluation of educational activities

In assessing the educational activities of students, preference is given to standardized methods of control: testing, structured written work, solving situational problems, structured by the procedure of control of practical skills in conditions close to real.

During the assessment of mastering each topic for the current activity of the student, grades are set on a multi-point (200-point) scale of the university, which corresponds to the ECTS scale, taking into account the approved assessment criteria for the discipline. This takes into account all types of work provided by the curriculum. The student has the right to receive a grade on each topic. Forms of assessment of educational activities include control of theoretical and practical training.

### Distribution of points received by students



**In the first block, the** maximum number of points for the current educational activities of the student - **120**. Accordingly, in the first block, the maximum score for each topic is: 120 points: 15 topics = **8 points**. The minimum score for the first block is: 70 points: 15 topics = **6.7 points**. A score below 6.7 points means "unsatisfactory", the topic is not credited and must be worked out in the prescribed manner.

For PKR № 1 a student can get a maximum of **80 points**. PKR is considered credited if the student received at least **50 points**.

**In the second block, the** maximum number of points for the current educational activities of the student is **80**. The history of the disease, as a mandatory individual work, is considered and evaluated as an independent topic of the lesson. Accordingly, in the second block, the maximum score for each topic is: 80 points: 10 topics = **8 points**. The minimum score for each topic is 40 points: 10 topics = **4 points**.

For PKR № 2 a student can get a maximum of **40 points**. PKR is considered credited if the student received at least **30 points**.

At the exam, a student can get a maximum of **80 points**. The exam is considered passed if the student has scored at least **50 points**. Distribution of points on the exam - see above in the example of the exam ticket.

#### Assessment of student performance

| № z.p.  | Name topics  | Maximum number of points |
|---|--|--------------------------|
| <b>BLOCK 1. Neonatology, diseases of the respiratory, digestive and endocrine systems in children</b> |  |                          |
| 1.  | Organization of neonatal care in Ukraine. Medical care for a healthy newborn baby.   | 8                        |
| 2.  | Premature babies. Children with intrauterine growth retardation.   | 8                        |
| 3.  | Asphyxia of newborns. Maternity trauma of newborns.  | 8                        |
| 4.  | Respiratory distress syndrome of newborns. Neonatal pneumonia.   | 8                        |
| 5.  | Hemolytic disease of newborns. Hemorrhagic disease of newborns.  | 8                        |
| 6.  | Intrauterine infections of the newborn (TORCH - infections).   | 8                        |
| 7.  | Bacterial infections of newborns.  | 8                        |
| 8.  | Differential diagnosis of pneumonia in children. Complications of pneumonia. Emergency care for acute respiratory failure in children. | 8                        |
| 9.  | Differential diagnosis of bronchial obstruction syndrome in children. Emergency care for severe asthma attacks in children.            | 8                        |
| 10.   | Differential diagnosis of hereditary, congenital and chronic diseases of the bronchopulmonary system in children.                      | 8                        |
| 11.   | Differential diagnosis of functional and organic diseases of the stomach and intestines in children.                                   | 8                        |
| 12.   | Diabetes mellitus in children.   | 8                        |

| <b>№ z.p.</b>                                  | <b>Name topics</b>  | <b>Maximum number of points</b> |
|--|---|---------------------------------|
| 13.  | Thyroid disease in children.  | 8                               |
| 14.  | Diseases of the hypothalamic-pituitary system and gonads in children. | 8                               |
| 15.  | Individual work (medical history).                                    | 8                               |
|  | <b>Together</b>   | <b>120</b>                      |
|  | <b>Final control work № 1</b>   | <b>80</b>                       |
|  | <b>Total for block № 1</b>  | <b>200</b>                      |
| <b>BLOCK 2. Children's infectious diseases</b> |   |                                 |
| 1.   | Measles, rubella, chicken pox, shingles                               | 8                               |
| 2.   | Scarlet fever, pseudotuberculosis                                     | 8                               |
| 3.   | Diphtheria, infectious mononucleosis                                  | 8                               |
| 4.   | Pertussis, mumps infection  | 8                               |
| 5.   | Meningococcal infection   | 8                               |
| 6.   | Polio, enterovirus infection  | 8                               |
| 7.   | SARS  | 8                               |
| 8.   | Acute intestinal infections   | 8                               |
| 9.   | Viral hepatitis   | 8                               |
| 10.  | Individual work (medical history)                                     | 8                               |
|  | <b>Together</b>   | <b>80</b>                       |
|  | <b>Final control work № 2</b>   | <b>40</b>                       |
|  | <b>Total for block № 2</b>  | <b>120</b>                      |
|  | <b>Examination</b>  | <b>80</b>                       |
|  | <b>Total for block 2 and exam</b>                                     | <b>200</b>                      |

### **Evaluation criteria**

Students' knowledge is assessed from both theoretical and practical training according to the following criteria:

**8 points for the topic in the first and second blocks, 71-80 points on the RCC № 1, 38-40 points on the RCC № 2 and 71-80 points on the exam ("excellent" on the national scale, A on the ECTS scale)** - the student correctly responded to 90-100% of Step-2 format tests. Correctly, clearly logically and fully answers all standardized questions of the current topic, including questions of a lecture course and independent work, or an exam ticket. Closely connects theory with practice and correctly performs practical work with writing a conclusion on the results. Freely reads

the results of laboratory tests, solves situational problems of increased complexity, is able to summarize the material, has the methods of laboratory tests to the required extent.

**6-7 points per topic in the first and second blocks, 61-70 points on the RCC № 1, 35-37 points on the RCC № 2 and 61-70 points on the exam ("good" on the national scale, B and C on the ECTS scale)** - the student correctly answered 70-89% of the Step-2 tests. Correctly and essentially answers the standardized questions of the current topic, lecture course and independent work or exam ticket. Demonstrates performance (knowledge) of practical skills. Correctly uses theoretical knowledge in solving practical problems. Is able to solve easy and medium situational problems. Has the necessary practical skills and techniques to perform them in excess of the required minimum.

**4.7-5 points per topic in the first block, 4-5 points per topic in the second block, 50-60 points on the RCC № 1, 30-34 points on the RCC № 2 and 50-60 points on the exam ("satisfactory" on the national scale, D and E on the ECTS scale)** - the student correctly answered 50-69% of the tests of the Step-2 format. Incomplete, with the help of additional questions, answers standardized questions of current activity, lecture course and independent work or exam ticket. Not can independently build a clear, logical answer. During the answer and demonstration of practical skills, the student makes mistakes. The student solves only the easiest problems, has only a mandatory minimum of research methods.

**Less than 4.7 points per topic in the first block, 4 points per topic in the second block, 50 points on the RCC № 1, 30 points on the RCC № 2 and 50 points on the exam ("unsatisfactory" on the national scale, Fx and F on the scale ECTS)** - the student correctly answered less than 50% of the tests of the Step-2 format. Does not know the material of the current topic or questions of the exam ticket, can not build a logical answer, does not answer additional questions, does not understand the content of the material. Makes significant, gross mistakes when answering and demonstrating practical skills.

### **Criteria for assessing medical history**

**Assessment of medical history** as a mandatory individual work of the student, occurs during its defense in the process of individual work of the teacher with the student.

**Score of 8 points ("excellent" on the national scale, and on the ECTS scale)** is given if the student conducted a complete clinical examination of a sick child, described its results, correctly assessed the clinical condition of the patient, clinical changes in organs and systems, laboratory and instrumental results. methods of examination, correctly determined the clinical diagnosis according to the classification of diseases and substantiated it, fully carried out the differential diagnosis, prescribed complete and correct treatment, correctly determined the prognosis of the disease and means of its prevention.

**Score of 6-7 points ("good" on the national scale, B and C on the ECTS scale)** is given if the student conducted a complete clinical examination of a sick child, but made inaccuracies in assessing the clinical condition, laboratory and instrumental methods of examination, correctly determined the clinical diagnosis and substantiated it, did not make a full differential diagnosis, prescribed the right treatment, but not in full or with insignificant errors.

**A score of 4.7-5 points in the first block and 4-5 points in the second block ("satisfactory" on the national scale, D and E on the ECTS scale)** is given if the student made some mistakes in assessing the clinical condition of the patient, the results of clinical, laboratory and instrumental examination, establishment and substantiation of the diagnosis, appointment of treatment or determination of the prognosis of the disease.

**Evaluation least 4.7 points in the first block and at least 4 of the second block ("unsatisfactory" on the national scale, Fx and F on a scale ECTS)** is assigned if a student made a significant error in the analysis of the clinical condition, results of clinical, laboratory and instrumental examination of patient child, did not make the correct diagnosis, did not prescribe the correct treatment.

The work is considered completed if the student receives a positive assessment in writing and defending a medical history.

## 7. Recommended Books

### Basic

1. Maidannik VG Pediatrics. Textbook (2nd edition, corrected and supplemented). - Харьков: Фолио, 2002. - 1125 с.
2. Neonatology: a national textbook: in 2 volumes / Ed. prof. Ye.Ye.Shunko.-К., 2014.- Т.1.960с.
3. Neonatology; textbook / Ed. TK Znamenskaya.-Kyiv, 2012.-980 p.
4. Pediatrics / Ed. prof. O.B. Heavy.- Vinnytsia, 2009.-1132 p.
5. Nelson Textbook of Pediatrics by Robert M. Kliegman, Bonita Stanton, Joseph St. Geme, Nina Schor, Richard E. Behrman / Edition 19. Publisher: Elsevier Health Sciences. 2680

### Optional

1. Aryaev ML Neonatology. - Kyiv: "ADEF - Ukraine", 2006. - 754 p.
2. Volosovets AP, Nagornaya NV, Krivopustov SP, Ostroplets SS, Bordyugova OV Diagnosis, therapy and prevention of deficiency anemias in children - Donetsk: SPD Dmitrenko LR, 2007. - 38 p.
3. Pediatrics / Ed. prof. VV Berezhny.-Kyiv, 2013.- 1037 p.
4. Volosovets OP, Abaturov OE, Krivopustov SP, Bolbot YK, Krivoruk IM Differential diagnosis of syndromes of physical and sexual development disorders in children. Monograph. - Ternopil: Ternopil State Medical University, 2006. - 354 p.
5. Volosovets OP, Snisar VI Recommendations for cardiopulmonary resuscitation in children. Methodical manual. - Dnepropetrovsk, ART-PRESS. - 2015. - 48 p.
6. Gaidukova SM and others / Hemolytic disease of newborns: Textbook. for students. and teachers of medical universities and doctors. - К.: NMAPE. P.L. Shupika, 2007.-168 p.
7. Dedov II, Peterkova VA Pediatric endocrinology. - М.: Универсум Паблишинг, 2006. - 600 с.
8. Dedov II, Peterkova VA Handbook of pediatric endocrinologist. - М.: Литтера, 2011. - 528 с.
9. SP Kryvopustov Problem oriented Pediatrics: Favorites Shows question (klynycheskoe guidance for doctors). Kharkov: Novo word, 2012. - 288 p.
10. Laboratory tests (clinical use) // Handbook of the doctor.-К.: LLC "Doctor-Media", 2008.- 288 p.
11. Practical Guide to Neonatal / Ed. Ezutachana S., J. Dobriansky: Per. from English. - Lions, Detroit, 2002. 344 p.
12. Rational diagnosis and treatment of endocrine diseases in children and adolescents / Ed. MD Tronko and OV Bolshova. - К.: Доктор-Медиа, 2008. - 380 с.
13. Situational task of Pediatrics / Ed. Corresponding Member Academy of Medical Sciences of Ukraine, prof. V.G. Maidannika.- К., 2006.- 204 p.
14. Slabky GO, Znamenska TK, Poor VG, Zhilka N.Ya., Kovaleva OM, Pokhilko VI Neonatology from the standpoint of a family doctor. - Kyiv, 2009.- 435 p.
15. Tests Pediatrics / Ed. Corr. AMS of Ukraine, prof. V.G. Maydannika.- К., 2007.-429 with.

16. Infectious diseases: encyclopedic reference book / edited by Kramaryova SO, Golubovska OA - K.: LLC "RA-HARMONY", 2019. - 712 p.
17. Lasitsa OI, Lasitsa TS, Nedelskaya SM Allergology of childhood. - K.: Книга Плюс, - 2004. - 368 с.
18. Cherry J., Demmler-Harrison GJ, Kaplan SL, Steinbach WJ, Hotez P. Feigin and Cherry's Textbook of Pediatric Infectious Diseases, 7th Edition.- Philadelphia: Elsevier Saunders, 2015
19. Nelson Textbook of Pediatrics, 20th Edition (R. Kliegman et al.) Philadelphia: Elsevier, 2015
20. Infectious diseases in children in the outpatient practice of a doctor (Doctor's Handbook) .- K: LLC "Harmony" .- 2017.- 209 p.
21. Infectious diseases in children (ed. D. Murray) .- M: Practice.- 2006, 872 p.
22. Order of the Ministry of Health of Ukraine № 198 of 05.08.1999 " On improving the prevention, diagnosis and treatment of tetanus"
23. Response to vaccine-related polioviruses type 2 in the pre-cessation phase of OPV use globally. Interim Guide, 2015  
// (<http://www.polioeradication.org/ResourceLibrary/Resourcesforpolioeradicators.aspx>).
24. Guide to Investigating Measles and Rubella Outbreaks and Responding in the WHO European Region, 2013
25. Budka SH, Chaudhuri A., Koskiniemi KS, Salonen SO Viral meningoencephalitis of diagnostic methods and guidelines for management // European J. Neurol.- 2010.- V.17.- P. 999-1009
26. Buts, JP, Dekeyser, N., Stilmant, C., Delem, E., Smets, F. and Sokal, E. (2006) Saccharomyces boulardii produces in rat small intestine a novel protein phosphatase that inhibits Escherichia coli endotoxin by dephosphorylation // Pediatr. Res.-2006.-Vol. 60.-P. 24–29.
27. Cameron DJ, Johnson LB, EL Maloney (2014) Evidence assessments and guideline recommendations in Lyme disease: the clinical management of known tick bites, erythema migrans rashes and persistent disease. Expert Review of Anti-infective Therapy, 5, 12: 9, 1103-1135, DOI: 10.1586 / 14787210.2014.940900.
28. To link to this article: <http://dx.doi.org/10.1586/14787210.2014.940900>
29. Carson RA, Mudd SS, MP Jamil Clinical Practice Guideline for the Treatment of Pediatric Acute Gastroenteritis in the Outpatient Setting //
30. J Ped. Health Care.- 2016.- V.30 (6) .- P.610-616.
31. Clinical Guidelines. For curative and treatment in hospitals and dispensaries, guidance for prescribing, 2016 // [www.refbooks.msf.org](http://www.refbooks.msf.org)
32. Feizizadeh S., Salehi-Abargouei A., Akbari V. Efficacy and Safety of Saccharomyces boulardii for Acute Diarrhea. Pediatrics.2014; 134 (1): e176-91.
33. Guarino A., Ashkenazi Sh., Gendrel D., Vecchio AL, Shamir R., Szajewska H. European Society for Pediatric Gastroenterology, Hepatology, and Nutrition / European Society for Pediatric Infectious Diseases Evidence-based Guidelines for the Management of Acute Gastroenteritis in Children in Europe: update 2014 // J. Ped. Gastroenterol. Nut ..- 2014. Vol. 59.-N1.- R. 132–152.
34. Huiming Y, Chaomin W, Meng M. Vitamin A for treating measles in children. Cochrane Database of Systematic Reviews, 2005, (4): CD001479.
35. Influenza Antiviral Medications: Summary for Clinicians, 2016
36. <https://www.cdc.gov/flu/professionals/antivirals/summary-clinicians.htm>
37. McFarland LV Systematic review and meta-analysis of Saccharomyces boulardii in adult patients. World J Gastroenterol. 2010; 16 (18): 2202-22.
38. Manual of Childhood Infections. The blue Book (Chief Editor M. Sharland) .- Oxford University Press.- 2016, € 966 P.
39. Measles (Rubella) // [mmwrq@cdc.gov](mailto:mmwrq@cdc.gov) .
40. Measles (Rubeola) Reporting and Case Investigation, 2015 // [ww.manitoba.ca](http://ww.manitoba.ca)
41. Meningitis (bacterial) and meningococcal septicemia in under 16s: recognition, diagnosis and management // [nice.org.uk/guidelines/cd102](http://nice.org.uk/guidelines/cd102)
42. Mummy KL, Chen X., Kelly CP, McCormick BA Saccharomyces boulardii interferes with Shigella pathogenesis by postinvasion signaling events // Am. J. Physiol. Gastrointest. Liver Physiol.-2008.-Vol. 294.-P.599–609.

43. Nadel S. Treatment of Meningococcal Disease // J. Adolescent Health.- 2016.-V. 59.— pp. 21-28.
44. Prevention of Measles, Rubella, Congenital Rubella Syndrome, and Mumps, 2013: Summary Recommendations of the Advisory Committee on Immunization Practices (ACIP). *Recommendations and Reports*
45. June 14, 2013/62 (RR04); 1-34 // [mmwrq@cdc.gov](mailto:mmwrq@cdc.gov) .
46. Raoult AE Pathogenicity and treatment of Bartonella infections // Int. Antimicrobial. Agents.- 2014.- V.16.- P. 16-25
47. Recommendations of the Advisory Committee on Immunization Practices - United States, 2016–17 Influenza Season. *Recommendations and Reports* / August 26, 2016/65 (5); 1–54 // <https://www.cdc.gov/mmwr/volumes/65/rr/rr6505a1.htm>
48. Recommended Antimicrobial Agents for Treatment and Postexposure Prophylaxis of Pertussis // MMWR.-2005.-V.54.-NoRR-14
49. Riaz M., Alam S., Malik A., Ali SM. Efficacy and safety of Saccharomyces boulardii in acute childhood diarrhea: a double blind randomized controlled trial // Indian. J. Pediatr.-2012.-Vol. 79.- P. 478–482.
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### Information resources

1. Orders of the Ministry of Health of Ukraine: "On improving outpatient care for children in Ukraine", "On improving the organization of medical care for adolescents" and protocols on specialties: "Pediatric nephrology", "Pediatric infectious diseases", "Pediatric immunology", "Pediatrics ", " Pediatric Pulmonology ". K.-2005.- 414 p.

[http://lviv.medprof.org.ua/uploads/media/Про\\_удоконання\\_амбулаторно-поліклінічної\\_допомоги\\_дітям\\_в\\_Україні.pdf](http://lviv.medprof.org.ua/uploads/media/Про_удоконання_амбулаторно-поліклінічної_допомоги_дітям_в_Україні.pdf)  
<http://mozdocs.kiev.ua/view.php?id=2111>

2. State form of medicines. State Enterprise "State Expert Center of the Ministry of Health of Ukraine". - Issue seven. - K. 2015 <http://www.apteka.ua/article/322672>

3. International Classification of Diseases and Causes of Death, 10th revision (ICD-10) <http://mkb-10.com>

4. About the statement of protocols of rendering of medical care to children on a specialty "Children's hematology". - the Order of the Ministry of Health of Ukraine of 20.07.2005 No. 364-10 p. [http://www.gov.lica.com.ua/b\\_text.php?base=1&id=564544&type=3](http://www.gov.lica.com.ua/b_text.php?base=1&id=564544&type=3)

5. Protocols for providing medical care to children in the specialty "Pediatric Endocrinology". - Order of the Ministry of Health of Ukraine of 27.04.2006 No. 254 120 p. as amended by the order of the Ministry of Health of Ukraine dated 03.02.2009 № 55 [http://search.ligazakon.ua/l\\_doc2.nsf/link1/MOZ6018.html](http://search.ligazakon.ua/l_doc2.nsf/link1/MOZ6018.html)

6. Order of the Ministry of Health of Ukraine №152 of 04.04.2005 "On approval of the Protocol of medical care for a healthy newborn child". - Kyiv, 2005. - 29 p. <http://ukraine.uapravo.net/data/base21/ukr21220.htm>

7. Order of the Ministry of Health of Ukraine of 29.03.2006 No. 179 "Procedure for registration of live births and stillbirths" <http://zakon4.rada.gov.ua/laws/show/z0427-06>

8. Order of the Ministry of Health of Ukraine 27.04.2006 N255 "On approval of the clinical protocol for neonatological care for children" Jaundice of newborns ". - 34 p. <http://ukraine.uapravo.net/data/base09/ukr09578.htm>

9. Order №584 of 29.08.2006 "Protocol of medical care for a newborn child with low birth weight". <http://ukraine.uapravo.net/data/base05/ukr05859.htm>

10. Order of the Ministry of Health of Ukraine №234 dated 10.05.2007 "On the organization of prevention of nosocomial infections in obstetric hospitals". - Kyiv, 2007. -77 p. <http://zakon4.rada.gov.ua/laws/show/z0694-07>

11. Order of the Ministry of Health №149 of 20.03.2008 "Clinical protocol of medical care for a healthy child under 3 years of age" <http://ukraine.uapravo.net/data2008/base09/ukr09572/index.htm>

12. Order of the Ministry of Health of Ukraine № 484 of 21.08.2008 "On approval of the Clinical Protocol for the care of a newborn child with respiratory disorders" - 58p.

<http://www.uapravo.net/akty/postanowa-resolution/akt3dndi3a/index.htm>

13. Order of the Ministry of Health №225 of March 28 , 2014 "Primary, resuscitation and post-resuscitation care for newborns in Ukraine"

<http://document.ua/pro-zatverdzhennja-ta-vprovadzhenja-mediko-tehnologichnih-d-doc190536.html>

14. Protocols for diagnosis and treatment of infectious diseases in children.- Approved by the order of the Ministry of Health of Ukraine dated 09.07.2004, №354 [www.nmu.edu.ua / kaf 34.php](http://www.nmu.edu.ua/kaf34.php); <https://www.moz.gov.ua/ua>.

15. Calendar of preventive vaccinations in Ukraine.- Order of the Ministry of Health of Ukraine №595 of September 16, 2011 (as amended by the order of the Ministry of Health of Ukraine of August 11, 2014 №551) [www.nmu.edu.ua / kaf 34.php](http://www.nmu.edu.ua/kaf34.php); <https://www.moz.gov.ua/ua>.

16. Protocol for the treatment of meningococemia in children Order of the Ministry of Health of Ukraine dated 12.10.2009 № 737 [www.nmu.edu.ua / kaf 34.php](http://www.nmu.edu.ua/kaf34.php); <https://www.moz.gov.ua/ua>.

17. Protocol for the treatment of acute intestinal infections in children Order of the Ministry of Health of Ukraine N 803 of 10.12.2007 On amendments to the order of the Ministry of Health of 09.07.04 N 354; On approval of Protocols for diagnosis and treatment of infectious diseases in children [www.nmu.edu.ua / kaf 34.php](http://www.nmu.edu.ua/kaf34.php); <https://www.moz.gov.ua/ua>.

18. Adapted clinical guidelines based on evidence of influenza and acute respiratory infections [www.nmu.edu.ua / kaf 34.php](http://www.nmu.edu.ua/kaf34.php); <https://www.moz.gov.ua/ua>.

19. Unified clinical protocols of primary care for adults and children with acute respiratory infection - approved by the Ministry of Health of Ukraine on 16 July 2014 r. Number 499 [www.nmu.edu.ua / kaf 34.php](http://www.nmu.edu.ua/kaf34.php); <https://www.moz.gov.ua/ua>.

20. Unified clinical protocols of primary care for adults and children flu - approved by the Ministry of Health of Ukraine on 16 July 2014 r. Number 499. [www.nmu.edu.ua / kaf 34.php](http://www.nmu.edu.ua/kaf34.php); <https://www.moz.gov.ua/ua>; <https://www.moz.gov.ua/ua>.

22. unified clinical protocols of primary, secondary and tertiary care for children of HIV infection - approved by the Ministry of Health of Ukraine on 24 February 2015 r. Number 92 <https://www.moz.gov.ua/ua>.

23. Unified clinical protocol of medical care for children with chronic viral hepatitis B. Order of the Ministry of Health №59 from 29.01.2013 [www.nmu.edu.ua / kaf 34.php](http://www.nmu.edu.ua/kaf34.php); <https://www.moz.gov.ua/ua>.

24. Unified clinical protocol of medical care for children with chronic viral hepatitis C. Order of the Ministry of Health №59 from 29.01.2013 [www.nmu.edu.ua / kaf 34.ph](http://www.nmu.edu.ua/kaf34.php); <https://www.moz.gov.ua/ua>.

25. Industry standard of higher education Educational and qualification characteristics of a specialist in the specialty 7.110104 pediatrics.- Kyiv, 2003.-Publishing house "Book-plus" .- 23 p. [www.moz.gov.ua/ua](http://www.moz.gov.ua/ua).