STATE MEDICAL AND PHARMACEUTICAL UNIVERSITY
„NICOLAE TESTEMITANU" FROM REPUBLIC OF MOLDOVA

Approved
at the meeting of the Council of
Faculty of Medicine No.2
Minutes No. 3 of 25.02.2014
Dean of Faculty of Medicine No.2
Ph.D., associate professor _____
M. Betiu

Approved
at the meeting of the Department of Pediatrics
Minutes No. 6 of 12.02.2014
Director of the Department,
MD,PhD., professor _____
N. Revenco

SYLLABUS

of the discipline Pediatrics

Name of the course: **Pediatrics**

Code of the course: **S.08.O.044**

S.09.O.059

S.10.O.059

Type of course: **Compulsory**

Total hours – 280

Including lectures – 80 hours, practical classes – 200 hours

Number of credits allocated to the course unit: **9**

Lecturers who teach course units:

Lilia Romanciuc, MD, PhD, Associate Professor
Ana Guragata, MD, PhD, Associate Professor
Angela Cintu, MD, PhD, Associate Professor
Florin Cenuşa, MD, PhD, Associate Professor
Adrian Rotaru, MD, PhD, Associate Professor
Olga Cîrstea, MD, PhD, Clinical Lecturer
Oxana Turcu, MD, PhD, Clinical Lecturer

Chisinau 2014

The discipline "Pediatrics" is studied in three stages: Healthy Child Growth and Development (IV year), and General Pediatrics (IV and V year).

I. Aim of the discipline

Training in Pediatrics has the aim to learn anatomical and functional features of child's organism depending on age, to achieve basic knowledge of medical semeiology and practical skills of diagnosis, treatment and prophylaxis of childhood diseases. The major goal of pediatrics is the preventive work. Also, students will learn diseases and disorders of different organs and systems specific for different child's age.

II. Objectives to achieve during the course

<u>At the level of learning and understanding</u>

1. Obtaining knowledge of medical terminology
2. Obtaining of necessary knowledge to identify main syndromes of childhood diseases
3. To learn about basic anatomical, physiological, functional and morphological features of the child's body according to the age
4. Principles of nutrition for healthy and sick children of different ages.
5. Evolution of the physiological processes in childhood: growth and development, care, prevention, social pediatrics, behavioral development.
6. International Classification of Diseases (ICD-10).
7. Basic principles of pediatric diseases: etiology, pathogenesis, typical clinical manifestations of the disease in childhood, the principles of diagnosis, treatment and prevention of these diseases.
8. Indications and contraindications for the use of laboratory methods, diagnostic tools, and other diagnostic methods in pediatrics.
9. Analysis of the clinical signs and symptoms together with diagnostic exploration results – positive diagnosis making.
10. Indications and contraindications for treatment with drugs approved in pediatrics.
11. Methods of disease prevention in children, National Immunization Program in Moldova.

<u>At the level of applying the achieved knowledge</u>

1. Medical records and documentation in use: patient's file, evolution of the treatment and discharge report.
2. Anthropometric measurements in assessing child physical development of various ages.
3. Techniques and methodologies for the collection of a case history (interview).
4. Performing a general physical exam and review of systems in a child of different ages.
5. Assessment of the neuro-psychological development in children of different ages.
6. Assessment of the nutritional status of children, prescription of the diet for children of different ages.
7. Recognition of vital signs and symptoms, clnical signs of different diseases, major syndromes in childhood.
8. Pointing and interpret laboratory test results: clinical, biochemical and immunological.
9. To show and interpret the results of instrumental investigations, imaging studies, etc.
10. Making a definitive clinical diagnosis according to existing classifications.
11. Making a differential diagnosis.
12. Prescribing necessary treatment indications according to the established diagnosis, drawing of the prevention and rehabilitation program.
13. Drawing of the follow up and rehabilitation program for patients with chronic diseases.

14. Emergency medical care in critically ill children.
15. Promotion of the principles of ethics and deontology in children's healthcare.
16. Clinical cases presentation.
17. Education of mothers about the child's health issues.

At the level of knowledge integration

1. To assess the importance of Pediatrics discipline in the context of General Medicine and integration with health related disciplines.
2. To develop knowledge of the integrated approach to healthy and sick child, and principles of child's healthcare.
3. To promote the implementation of new knowledge and principleas of healthcare for proper development of health workers in all sub-specialities, parents and care givers.
4. To achieve knowledge about the evolution of physiological processes in the body of the child, and risk factors for the occurrence of disease in childhood.
5. To integrate the knowledge about principles of child healthcare with new methods of child development stimulation, as well as with current guidelines and protocols approved by the Ministry of Health of the Republic of Moldova.
6. To learn and develop principles of diagnostic approach, diagnosis and clinical decision making.
7. To implement during the university program the approach for child's healthcare for the level of family medicine.

III. Conditionalities and requirements prior the studies:

Pediatrics is one of the core subjects in the university training of medical doctors. Childhood period has specific features in its evolution, beginning with birth and ending with adolescence.

Pediatrics is a fundamental discipline that differs from internal medicine field. The field of *pediatrics* is large and complex, and it includes aspects of *preventive*, *curative*, *social*, *developmental* medicine. During this course the future specialist studys and endorses practical skills and modern methods of diagnosis, treatment and prevention of various diseases in children. During the pediatric course students apply and integrate their fundamental knowledge (anatomy, physiology, microbiology, etc.) with other disciplines - neonatology, neuropediatrics, infectious diseases in children, pediatric surgery, etc.

IV. Basic content of the course

A. Lectures

Nr	**Theme**	**Number of hours**
1.	History of pediatrics and its objectives. Anatomical and physiological specific features of teguments, mucosae and derivatives (hairs, nails), subcutaneous adipose tissue in children according to the age. Semeiology of teguments, mucosae, adipose tissue, muscles and bones diseases in different ages.	3
2.	Anatomical and physiological specific features of the immune system in children. The lymphatic ganglional system. Semeiology of immune system disorders in children. Semeiology of lymph nodes and basic types	2

	of lymphadenopathy. Primary and secondary immunodeficiencies in children.	
3.	Diseases of the digestive system in children. Anatomical and physiological particularities of the digestive system in children. Supplemental explorations of the digestive system in children. Semeiology of digestive system diseases in children of different age.	2
4.	Chronic nutritional disorders in children. Malnutrition. Hypostature. Obesity.	3
5.	Malabsorption syndrome in children. Classification. Cystic fibrosis. Celiac disease. Lactose intolerance.	3
6.	Anatomical and physiological specific features of the nervous system in children. Symptoms and syndromes of diseases. Methods of supplemental investigations.	2
7.	Fever and hyperthermic syndrome in children. Febrile convulsions (seizures) in children.	2
8.	Semeiology of respiratory system diseases in children.	3
9.	Bronchitis in children. Pneumonias in children.	3
10.	Chronic bronchopulmonary diseases in children.	3
11.	Rickets in children. Spasmophilia. Hypervitaminosis D.	2
12.	Genetic diseases. Notions of genetic pathology, chromosomal abnormalities, diseases of multifactorial etiology, genetic counseling.	2
	TOTAL	30

B. Practical lessons.

Nr	**Theme**	**Number of hours**
1.	Pediatrics as object and speciality. Definition and object of semeiology. Symptom and clinical sign, syndrome and disease. Clinical case report. Anamnesis – methodological principles, objectives and specificity in pediatrics. General symptoms. Objective examination. Techniques and classical methods of physical examination: inspection, palpation, percussion, auscultation. General inspection of a child. Methodologic principles of paraclinical investigations.	5
2.	Anatomical and physiological particularities of nervous system in children. Ontogenesis of the nervous system. Principal elements of morphofunctional evolution of the nervous system in infants and children. Methods of clinical examination of the nervous system. Symptoms and syndromes of a disease: flabby child, convulsions (seizures), coma, intracranial hypertension, cerebral edema, meningism. Methods of supplemental investigations. Fever and hyperthermic syndrome in children. Febrile convulsions in children.	7
3.	Morphofunctional particularities of bone system in children. Methods of locomotor system examination in children of different ages. Semeiology of diseases. Morphofunctional particularities of the muscular system in children. Methods of examination of muscles in children. Semeiology of muscular	7

	tissue diseases. Semeiology of basic rheumatic and conjunctive tissue diseases, systemic vasculitis. Deficient rickets in children. Metabolism of vitamin D, P and Ca. Spasmophilia. Hypervitaminosis D.	
4.	Anatomical and physiological specific features of teguments, mucosae and their derivatives (hair, nails), subcutaneous adipose tissue in children according to the age. Anatomical and physiological specific features of the immune system in children. Critical periods in the development of immune reactivity of children. Methods of immune system examination in children. Semeiology of immune system disorders in children. The system of lymph nodes. Semeiology of lymph nodes and basic types of adenopathies.	7
5.	Primary and secondary immunodeficiencies in children.	
6.	The anatomical and physiological particularities of the digestive system in children. Physiology of gastric and intestinal secretion. Digestion, absorption and transport of alimentary substances. Clinical examination of the digestive system in children. The specific features of anamnesis. Abdominal painful points and their significance. Supplemental investigations of digestive system in children. Semeiology of digestive system affections in children of different ages. Functional disorders of the digestive tract in children.	7
7.	Malabsorption syndrome in children. Definitions. Classification. Cystic fibrosis. Celiac disease. Lactose intolerance. Intolerance to cow's milk protein.	7
8.	Chronic nutritional disorders in children. Malnutrition. Hypostature. Obesity in children.	7
9.	Anatomical and physiological particularities of the respiratory system in children. The lung: its structure and functions. Methods of clinical examination of the respiratory system in children. Semeiology of respiratory system diseases in children. Basic syndromes of respiratory system diseases in children. Supplemental methods of investigation.	7
10.	Acute viral infections in children: pharyngitis, laryngitis, epiglottitis, croup.	
11.	Bronchitis in children. Acute ordinary bronchitis. Obstructive bronchitis. Bronchiolitis. Recurrent bronchitis.	7
12.	Acute viral and bacterial pneumonias in children. Diseases of pleura (pleurisy, pneumothorax).	7
13.	Chronic bronchopulmonary diseases in children. Cystic fibrosis. Bronchiectatic disease. Primary ciliary dyskinesia (Kartagener's syndrome). Bronchopulmonary dysplasia. Primary pulmonary interstitial diffuse fibrosis. Pulmonary hemosiderosis. Athelectasis. Chronic bronchitis. Respiratory insufficiency.	7
	TOTAL	**75**

A. Lectures

Nr	**Theme**	**Number of hours**

1.	Semeiology of cardiovascular system diseases in children.	2
2.	Congenital heart malformations.	3
3.	Cardiac arrhythmias in children and adolescents.	2
4.	Primary cardiomyopathies. Diseases of the myocardium and pericardium in children.	3
5.	Acute and chronic cardiac failure in children.	2
6.	Semeiology of hematopoietic system diseases in children.	2
7.	Deficient anemias in children.	2
8.	Hemorrhagic diatheses in children.	2
9.	Chronic hepatitis in children. Hepatic cirrhosis in children.	2
10.	Semeiology of rheumatic diseases. Acute rheumatic fever in children.	3
11.	Diffuse diseases of conjunctive tissue in children. Idiopathic rheumatoid arthritis. Systemic lupus erythematosus. Dermatomyositis. Systemic scleroderma.	2
12.	Bronchial asthma in children.	2
13.	Semeiology of urinary system diseases in children.	2
14.	Urinary tract infection in children. Cystitis. Pyelonephritis.	3
15.	Acute and chronic glomerulonephritis in children.	2
	TOTAL	**50**

B. Practical lessons.

Nr	**Theme**	**Number of hours**
1.	Anatomical and physiological characteristics of the hematopoietic system in children. Blood tissue. Hematopoietic organs and their characteristics. Hematopoiesis. Methods of clinical and paraclinical examination of the hematopoietic system in children. Specific features of anamnesis. Semeiology of hematopoietic system diseases in children. Basic syndromes of the hematopoietic system diseases in children.	5
2.	Hereditary anemias in children. Hemolytic hereditary anemias (enzymopathies, membranopathies, hemoglobinopathies). Hereditary aplastic anemias in children.	5
3.	Acquired anemias in children. Deficient anemias. Classification. Iron deficient, vitamin B12, folic acid deficient anemias. Acquired hemolytic and aplastic anemias.	5
4.	Hemorrhagic diatheses in children. Thrombocytopenias. Idiopathic thrombocytopenic purpura. Thrombocytopathies. Hemorrhagic vasculitis in children.	5
5.	Coagulopathies in children. Hemophilia A,B,C. Von Willebrand disease.	5
6.	Anatomical and physiological specific features of urinary system in children of different age. Particularities of anamnesis. Methods of clinical examination of the urinary system. Urine aspect modifications. Methods of supplemental examination. Basic renal syndromes and their specific features in main nephropathies in children. Semeiology of congenital and acquired diseases of the urinary system. Enuresis. Neurogenic urinary bladder in children.	5

7.	Urinary tract infection in children. Cystitis. Pyelonephritis.	5
8.	Acute and chronic glomerulonephritis in children. Nephrotic syndromes.	5
9.	Hereditary renal diseases. Tubulopathies in children. Classification. Acute renal failure. Chronic renal failure.	5
10.	Gastritis, gastroduodenitis in children. Ulcerative disease in children.	5
11.	Acute and chronic pancreatitis in children.	5
12.	Biliary pathways dysfunction. Cholecystitis in children. Biliary lithiasis in children.	5
13.	Chronic nonspecific colitis. Ulcero-hemorrhagic rectocolitis. Crohn's disease.	5
14.	Chronic hepatitis in children. Hepatic cirrhosis. Acute and chronic hepatic failure in children.	5
15.	Rheumatic diseases in children. Semeiology of rheumatic diseases. Acute rheumatic fever in children. Chronic rheumatic cardiopathy in children.	5
16.	Diffuse diseases of conjunctive tissue in children. Idiopathic rheumatoid arthritis. Systemic lupus erythematosus. Dermatomyositis. Systemic scleroderma.	5
17.	Anatomical and physiological specific features of cardiovascular system in children of different ages. Particularities of anamnesis. Methods of clinical examination of cardiovascular system. Methods of supplemental examination. Semeiology of diseases of cardiovascular system in children.	5
18.	Congenital cardiopathies in children.	5
19.	Acute and chronic cardiac failure in children.	5
20.	Cardiac arrhythmias in children and adolescents.	5
21.	Primary cardiomyopathies. Diseases of myocardium in children.	5
22.	Atopic dermatitis in children. Alimentary allergy in children	5
23.	Bronchial asthma in children.	5
24.	Assessment of general dangerous signs in children in connection with age.	5
25.	Complex examination: attestation of practical skills in pediatrics, test-control, oral examination.	5
	TOTAL	**125**

Note: Each subject includes definition, etiology, incidence, classification, pathogenesis-physiopathology, morphopathology, predisposing factors, clinical picture, paraclinical investigations, positive diagnosis, differential diagnosis, treatment, prognosis, prophylaxis, follow-up.

SYLLABUS

Pathology of little age child.

1. **Atopic dermatitis in children.** Definition. Predisposing factors. Etiology. Pathogenesis. Classification. Clinical picture. Paraclinical examinations. Positive diagnosis. Differential diagnosis. SCORAD scale. Complications. Treatment (regime of life, hypoallergic alimentation, alimentary diary, successive introduction of previously excluded produces in alimentation. Medicinal treatment (specific and nonspecific hyposensibilization, systemic and local treatment). Evolution. Prophylaxis. Follow-up.

2. **Malabsorption syndrome in children.** Definition. Classification. General clinical and paraclinical characteristics of malabsorption syndrome. *Celiac disease* (gluten induced enteropathy). Etiology. Pathogenesis. Physiopathology. Clinical picture. Paraclinical examinations. Positive diagnosis (ESPGHAN criteria). Differential diagnosis. Complications. Treatment. Dietotherapy in celiac disease. Prognosis. Follow-up. *Cystic fibrosis.* Definition. Classification. Genetics of disease. Pathogenesis. Physiopathology. Clinical picture: meconial ileus, intestinal form, pulmonary form. Paraclinical examinations. Positive diagnosis (criteria). Differential diagnosis. Treatment: dietotherapy, substitution with pancreatic enzymes, antibioticotherapy, inhalation therapy, physiokinetotherapy. Prognosis. Prophylaxis. Follow-up. *Intolerance to lactose. Intolerance to cow's milk proteins.* Etiology. Pathogenesis. Physiopathology. Clinical picture. Paraclinical examinations. Positive diagnosis. Differential diagnosis. Complications. Treatment: dietotherapy. Prognosis. Follow-up.

3. **Deficient anemias in children.** Iron deficient anemia. Definition. Incidence. Metabolism of iron in organism. Etiology. Pathogenesis. Physiopathology. Classification. Clinical picture. Paraclinical examinations. Hematologic and biochemical tests of iron balance. Prelatent, latent iron defficiency. Positive diagnosis. Differential diagnosis. Treatment. Preparations of iron. Specific and nonspecific prophylaxis of iron deficiency in children. evolution. Complications. Prognosis. Follow-up.

4. **Chronic nutritional disorders in children.** notion. Classification. *Malnutrition in children.* definition. Classification. Etiology (exogenous and endogenous factors). Clinical and paraclinical picture in different degrees of malnutrition. Diagnosis. Treatment depending on the degree (regime of life, alimentation, steps of dietotherapy, medicamentous treatment depending on clinical form). Prophylaxis. Follow-up. Prognosis. Protein-caloric malnutrition (Kwashiorcor). *Hypostature.*

5. **Rickets.** Definition. Incidence. Etiology. Metabolism of vitamin D. Physiological effects of vitamin D on the „target" organs. Pathogenesis. Classification. Clinical and paraclinical picture. Positive diagnosis. Differential diagnosis. Treatment (diet, drugs). Preparations of vitamin D, curative dose of vitamin D depending on the disease degree. Prophylaxis (antenatal and postnatal, specific and nonspecific). Follow-up. *Spasmophilia* (rickets hypocalcemias). Definition. Etiopathogenesis. Role of calcium, potassium, magnesium etc. ions concentration disturbances in the manifestations of tetany. Favorising factors. Clinical manifestations (latent tetany, manifesting tetany). Paraclinical explorations. Differential diagnosis. Treatment: nonspecific measures (ensurance of airway releasing and good oxygen saturation, prevention of mechanical lesions), medicinal treatment in confirmed rickets induced tetany. Evolution and prognosis. *Hypervitaminosis D*- clinical forms, positive diagnosis. Differential diagnosis. Treatment.

6. **Functional disorders of the digestive tract in children.** Etiology. Pathogenesis. Classification. Clinical and paraclinical features. Positive and differential diagnosis. Principles of treatment. Evolution. Prognosis. Follow-up.

7. **Febrile syndrome in children.** Thermoregulation. Etiologic factors. Pathogenesis. Pyrogene substances. Clinical picture in febrile syndrome. Types of fever, hyperthermia. Persistant fever. Differential diagnosis. Treatment of a child with febrile syndrome. Medication with antipyretics. Physical methods of keeping fever down. Medical assessment in inexplicable fever. *Febrile convulsions (seizures).* Pathogenesis. Frequency. Clinical picture. Differential diagnosis. Treatment of a child with febrile convulsions. Prognosis.

Diseases of respiratory system in children

8. **Bronchitis in children.** Definition. Etiology. Classification. Acute bronchitis. Bronchiolitis. Pathogenesis. Physiopathology. Clinical and paraclinical manifestations. Positive and differential diagnosis. Specific features. Treatment of different forms of bronchitis. Evolution and prognosis.

Recidivating (recurrent) bronchitis. Etiologic and predisposing factors. Pathogenesis, pathomorphology. Clinical and paraclinical specific features. Principles of treatment and rehabilitation.

Chronic bronchitis. Notion (after WHO). Particularities of diagnosis, differential diagnosis. Treatment. Evolution, prognosis and dispensary control. Prophylaxis.

9. **Acute pneumonias in children.** Definition. Incidence. Etiology. Classification. Pathogenesis. Predisposing factors. Communitary pneumonia. Nosocomial pneumonias. Criteria of diagnosis. Clinical and paraclinical, radiologic specific features in different clinicomorphological forms of pneumonias (focal, confluent, segmentary, lobar, interstitial pneumonia) and after etiology (viral, atypical, staphylococcal etc.). Pathomorphology. Positive and differential diagnosis. Pulmonary and extrapulmonary complications in pneumonias (abscess, bullae, pneumothorax, pyopneumothorax, athelectasis, pleuresies, toxico-septic syndrome, etc.). Diseases of pleura (pleurisy, pneumothorax). Particularities of diagnosis, differential diagnosis. Treatment. Evolution. Prophylaxis. Follow-up. Acute respiratory insufficiency in children.

10. **Chronic bronchopulmonary diseases in children.** Notion. Etiology. Role of recurrent, segmentary pneumonias, athelectasis, aspiration of foreign bodies, recurrent gastric aspirations, pulmonary dysfunctions, fungal, interstitial pneumonias, infectious diseases such as rubella, pertussis, respiratory allergosis in chronic bronchopulmonary diseases. Predisposing factors. Pathogenetic mechanisms. Clinical picture. Diagnostic algorhithm in chronic cough. Radiologic, endoscopic methods of diagnosis. Differential diagnosis. Bronchiectasis. Ciliary dyskinesia. Bronchopulmonary dysplasia. Diffuse interstitial pulmonary primary fibrosis. Cystic fibrosis. Complications. Treatment. Programs of rehabilitation. Evolution. Prognosis. Prophylaxis. Follow-up. Survey of vitality.

Allergic diseases and immune system in children

11. **Alimentary allergy in children.** Definition. Incidence. Classification. Etiology. Predisposing factors. Pathogenesis. Physiopathology. Alimentary allergens. Clinical picture in different variants: gastrointestinal, respiratory, cutaneous, Quinke's edema, urticaria, mixed forms. Paraclinical examinations, including skin prick-test, intradermal tests, oral provoking tests, total and specific IgE, tests in vitro. Positive diagnosis. Differential diagnosis. Dietotherapy (elimination diet and alimentary diary, hypoallergic diet, rotation diets). Medicinal systemic treatment depending on clinical form of disease. Local treatment. Hyposensibilization treatment. Prophylaxis. Follow-up.

12. **Bronchial asthma in children.** Definition. Etiologic factors. Pathogenesis: atopy, hyperreactivity of bronchi, inflammation of bronchial mucosa. Morphopathology. Classification. Clinical picture. Positive diagnosis. Differential diagnosis. Complications. Status asthmaticus. Principles of treatment. Treatment of asthmatic crisis. Treatment depending on a form and period of disease. Antiinflammatory treatment in stages. Nonmedicinal treatment. Evolution. Prognosis. Prophylaxis. Follow-up. Survey of vitality.

Diseases of cardiovascular system in children.

13. **Congenital heart diseases in children.** Incidence. Prevalence. Etiology. Genetical aspects. Classification of CHD. Physiopathology and clinical signs of CHD with left-right shunt (atrial septal defect, ventricular septal defect, potent ductus arteriosus, common and partial atrioventricular canal, aorto-pulmonary window). Physiopathology and clinical signs of obstructive lesions (stenosis and insufficiency of PA, stenosis and insufficiency of MV, stenosis and insufficiency of the Ao, insufficiency of TrV, coarctation of the aorta, interrupted aortic arch). Physiopathology and clinical signs of cyanogenic CHD (Common arterial trunk, RV with double outlet, complete and corrected TGV, Ebstein anomalysyndrome of hypoplastic right and left heart, DVPAT). Paraclinical investigations and different diagnosis of CHD. Natural evolution. Prognosis. Management of CHD. Interventional and surgical treatment (techniques, aspects, postsurgical complications), indications and contraindications for surgical treatment. Opportune terms of surgical treatment. Conservative treatment. Complications of CHD (Eisenmenger syndrome, congestive CCF, rhythm disorders, thromboembolism etc.). Prophylaxis. Follow-up.

14. **Chronic cardiac failure in children.** Definition. Incidence. Prevalence. Etiology in function of age (cardiac and noncardiac causes). Physiopathology (factors of myocardic performance: pre-postload, contractibility, adaptation mechanisms in the cardiac failure, neurohormonal, oxidative stress, interleukinic, PN, apoptosis theory). Classification of CCF in children (Ross at early age children, NYHA). Clinical manifestations of CCF (in function of age). Laboratory and instrumental obligatory and supplementary tests. Criteria of diagnosis and differential diagnosis. Nonpharmacologic treatment (general measures, hygienodietetic regime); pharmacologic treatment, special treatments. Prophylaxis. Complications. Follow-up.

15. **Primary cardiomyopathies and myocardites in children.** Notions and definitions: cardiomyopathy, primary cardiomyopathy, myocarditis. Classification of CMP with specification of forms preponderantly met in children. principles of classification and criteria of diagnosis of myocardites (hystologic, etiologic, clinical, evolutive). Conception of etiopathogenesis in acute viral myocardites. Specific features of acute myocarditis clinical manifestations in children. management of clinical and paraclinical diagnosis of myocarditis in children (biologic tests, endomyocardic biopsy, ECG, echocardiography, cardio-pulmonary radiography, NMR, myocardic scintigraphy). Principles of CMP treatment in children. complications and prognosis of myocardites in children. Hypertrophic cardiomyopathy in children: etiology, classification, evolutive variants, options of treatment, complications. Dilative cardiomyopathy in children: etiology, classification, evolution, management of diagnosis and treatment. Long-term follow-up of children with myocarditis and other forms of CMP.

16. **Cardiac arrhythmias in children and adolescents.** Characteristics of normal ECG and pathologic changes in children. Basic elements of heart electrophysiology. Notions and definitions of arrhytmia (tachyarrhythmia, bradiarrhythmia) in pediatrics. Classification of arrhythmias, with specification of forms occuring preponderantly in children. Etiology of arrhythmias in children and adolescents. Arrhythmias of genetic origin. Management of tachyarrhythmias, bradyarrhythmias, extrasystoles (etiology, clinical picture, ECG changes, evolution, principles of treatment). Notions of: preexcitation syndromes (WPW, LCL), prolonged QT, sick sinus node, parasystole. Clinical significance of paraclinical examination (laboratory tests, ECG, EchoCG, Holter ambulatory ECG monitoring, inclination tests, provocation pharmacologic tests) for diagnosis confirmation. Principles of arrhythmias treatment in children and adolescents: vagal manoeuvres, indications and techniques of defibrillation, cardiac stimulator implantation. Arrhythmic emergencies in children: algorithm

of diagnosis and treatment of tachy- and bradyarrhythmias according to WHO recommendations. Long-term follow-up.

Rheumatic and immunologic diseases in children.

17. **Acute rheumatic fever in children.** Definition. Etiology. Epidemiology. Pathogenesis. Pathologic anatomy. Classification. Clinical manifestations. Major and minor criteria of diagnosis (WHO 2002-2003). Paraclinical investigations. Degrees of disease activity. Differential diagnosis. Principles of treatment (regime, antibioticotherapy, antiinflammatory nonsteroids, corticosteroids). Prognosis. Evolution. Complications. Primary and secondary prophylaxis. Follow-up.

18. **Juvenile idiopathic arthritis.** Definition. Etiology. Epidemiology. Pathogenesis. Predisposing factors. Classification. Clinical picture. Criteria of diagnosis in JRA (ACR). Clinical and paraclinical specific features of arthritis (evolutive variants: systemic, oligoarticular persistent and extensive, polyarticular seropositive and seronegative arthritis in association with enteritis, psoriasis, other arthrites). Radiologic and functional diagnosis of arthritis stage by method of Steinbroker. Differential diagnosis. Factors of severe prognosis. Principles of treatment in case of evolutive form. Prognosis. Follow-up.

19. **Systemic lupus erythematosus.** Definition. Incidence and prevalence. Etiology. Risk factors. Pathogenesis. Classification. Clinical picture. Criteria of diagnosis (ACR). Paraclinical investigations. Differential diagnosis. Principles of treatment. Prognosis. Follow-up.

20. **Juvenile dermatomyositis.** Definitions. Incidence and prevalence. Etiology. Risk factors. Pathogenesis. Classification. Clinical picture. Criteria of diagnosis. Paraclinical investigations. Differential diagnosis. Principles of treatment. Prognosis. Follow-up.

21. **Systemic scleroderma.** . Incidence and prevalence. Etiology. Risk factors. Pathogenesis. Classification. Clinical picture. Criteria of diagnosis (ACR). Paraclinical investigations. Differential diagnosis. Principles of treatment. Prognosis. Follow-up.

Pathology of digestive system in children.

22. **Exocrine pancreas diseases in children.** Acute pancreatitis. Chronic pancreatitis. Definition. Incidence. Etiology. Predisposing factors. Pathogenesis. Physiopathology. Mechanisms of tissular autodigestion. Classification. Clinical picture. Basic syndromes. Paraclinical investigations. Positive diagnosis. Differential diagnosis. Treatment. Evolution. Complications. Prognosis. Follow-up.

23. **Biliary pathways dysfunction in children.** Definition. Etiology. Pathogenesis. Clinical picture depending on clinical form. Positive and differential diagnosis. Treatment. Evolution. Complications. Prognosis. Prophylaxis. Follow-up.

24. **Chronic nonspecific colitis in children.** *Ulcero-hemorrhagic rectocolitis. Crohn disease in children.* Stages of intestinal microflora forming in function of age. Disorders of normal intestinal microflora (dysbiocenosis or dysmicrobism), definition, degrees of its severity. Role of dysmicrobism in colitis development. *Ulcero-hemorrhagic rectocolitis in children.* Definition. Incidence. Etiology. Genetic predisposition. Pathogenesis of UHRC. Immunologic mechanisms. Classification of UHRCsigns and symptoms. Clinical manifestations by the degree of severity. Complications. Laboratory, instrumental investigations (endoscopy, colon radiography). Differential diagnosis. *Crohn disease.* Definition. Incidence. Etiology. Pathogenesis. Pathomorphology in comparison with UHRC. Localization, evolutive forms, phases of Crohn disease. Clinical features. Diarrheic syndrome. Malabsorption syndrome. Extracolonic manifestations. Complications. Laboratory,

instrumental investigations. Differential diagnosis. Treatment of chronic nonspecific colitis. Dietotherapy. Medicinal treatment. Evolution. Prognosis. Prophylaxis. Follow-up.

25. **Acute and chronic gastritis in children.** Notion. Frequency. Etiology. Pathogenesis. Sydnei 1990 classification (modified for children). clinical and paraclinical characteristics. Positive and differential diagnosis. Principles of treatment. Evolution. Prognosis. Follow-up.

Primary and secondary gastroduodenitis. Clinical and paraclinical specific features. Functional, instrumental and laboratory diagnosis. Differential diagnosis. Treatment. Prophylaxis. *Ulcer disease.* Notion. Frequency. Etiology. Factors of agression and protection in pathogenesis. Role of Helicobacter Pylori infection. Classification. Particularities of clinical picture depending on ulcer localization (stomach, duodenum) and age. Complications. Laboratory, functional, endoscopic with biopsy diagnosis. Differential diagnosis. Dietary and medicinal treatment. Antirecurrent treatment. Evolution. Prognosis. Prophylaxis. Follow-up.

26. **Chronic hepatitis and hepatic cirrhosis in children.** Notion. Incidence. Etiology. Pathogenesis. Classification. Clinical picture of chronic viral, medicamental. Autoimmune hepatites. Biochemical (cytolytic, mesenchimal-inflammatory, cholestatic, hepatoprive syndrome); viral (Hbs, HVD, Hbc markers, etc.); immunologic (humoral and cellular immunity); instrumental (echography, reohepatography, splenoportography) diagnosis. Specific features of chronic hepatites depending on etiology. Differential diagnosis. Dietary and medicinal treatment (immunomodulators, antivirals, corticosteroids, hepatoprotectors). Prognosis. Follow-up. Prophylaxis. *Hepatic cirrhoses.* Notion. Incidence. Etiology. Pathogenesis. Classification. Clinical picture according to cirrhosis stages. Laboratory and instrumental diagnosis. Differential diagnosis. Dietary and medicinal treatment. Prognosis. Follow-up. *Hepatic failure.* Notion. Causes. Pathogenesis. Clinical picture of acute and chronic hepatic failure. Paraclinical investigations (biochemical tests, renal function, hydroelectrolytic and acid-base equilibrium, electroencephalogram). Treatment. Prognosis.

Pathology of urinary system in children.

27. **Urinary tract infection in children.** *Pyelonephritis.* Etiology. Pathogenesis. Classification. Criteria of diagnosis. Specific features of clinical manifestations depending on age. Laboratory investigations. Positive diagnosis. Differential diagnosis. Principles of treatment. Evolution. Complications. Prognosis. Prophylaxis. Follow-up.

28. **Cystitis.** Etiology. Classification. Clinical picture. Methods of investigations. Treatment. Complications. Prognosis. Prophylaxis. Dispensary control. *Enuresis.* Etiology. Etiologic classification. Pathogenesis. *Role of neurogenic urinary bladder.*Enuresis as a social psychologic factor. Principles of treatment. Prognosis.

29. **Acute glomerulonephritis in children.** Etiology. Forms. Clinical and morphological classification. Pathogenesis. Acute poststreptococcal glomerulonephritis. Specific features of clinical manifestations in nephrotic syndrome, nephrotic syndrome, urinary isolated syndrome. Paraclinical diagnosis. Differential diagnosis. Complications. Evolution and prognosis. Principles of treatment. Prophylaxis. *Chronic glomerulonephritis.*Definition. classification. Positive and differential diagnosis. Principles of treatment. Evolution. Prognosis. Follow-up.

30. **Nephrotic syndromes in children.** Classification. Idiopathic nephrotic syndrome. Etiology. Pathogenesis. Clinical manifestations. Paraclinical diagnosis. Differential diagnosis. Complications. Evolution and prognosis. Principles of treatment. Prophylaxis. Follow-up.

31. **Tubulopathies in children. Acute renal failure, chronic renal failure in children.** Etiology. Pathogenesis. Classification. Clinical manifestations. Paraclinical diagnosis.

Differential diagnosis. Complications. Evolution and prognosis. Principles of treatment. Prophylaxis. Follow-up.

Hematologic diseases in children.

32. **Hemolytic anemias in children.** Definition. Incidence. Clinical and paraclinical characteristics of hemolytic crisis. Intravascular and extravascular hemolysis. Classification. Hereditary hemolytic anemias. Membranopathies: hereditary microspherocytosis. Enzymopathies: deficit of glucose-6-phosphate-dehydrogenase. Hemoglobin anomalies: thalassemic syndromes, hemoglobinosis S. Genetics of diseases. Mechanisms of hemolysis. Clinical manifestations. Paraclinical investigations. Positive diagnosis. Differential diagnosis. Treatment. Evolution. Complications. Prognosis. Prophylaxis. Follow-up. Autoimmune hemolytic anemias.

33. **Coagulopathies in children.** Clinical and hematologic characteristics of secondary homeostasis disorders. Classification. Hemophilia A. Hemophilia B. Definition. Genetics of disease. Incidence. Pathogenesis. Clinical manifestations. Positive diagnosis. Differential diagnosis. Treatment: general measures, substitutive treatment, adjuvant treatment. Prophylactic treatment. Evolution. Complications. Prognosis. PropVon Willebrand disease. Etiology. Pathogenesis. Clinical and paraclinical specific features. Positive and differential diagnosis. Principles of treatment. Evolution. Prognosis. Follow-up.

34. **Thrombocytopenias in children.** Clinical-hematologic characteristics of primary homeostasis disorders. Classification. Idiopathic thrombocytopenic purpura. Etiology. Pathogenesis. Classification. Clinical and paraclinical manifestations. Positive and differential diagnosis. Principles of treatment. Evolution. Prognosis. Follow-up. *Thrombocytopathies.* Classification. Etiology. Pathogenesis. Glanzmann thrombastenia. Syndrome of gigantic platelets. Syndrome of gray platelets, Wiskot-Aldrich, Chediak-Higashi syndromes. Clinical and paraclinical manifestations. Positive and differential diagnosis. Principles of treatment. Evolution. Prognosis.

35. **Aplastic anemias in children.** Congenital aplastic anemias. *Fanconi anemia, Estren-Dameshec anemia, Blackfan-Diamond anemia.* Etiology. Pathogenesis. Clinical manifestations. Criteria of diagnosis. Differential diagnosis. Principles of treatment. Prognosis. Prophylaxis. Dispensary control. *Acquired aplastic anemias.* Clinical forms with pancytopenia: acute, subacute, chronic evolution. Clinical forms with isolated affection of erythropoiesis. Etiology. Pathogenesis. Clinical manifestations. Criteria of diagnosis. Treatment. Prognosis. Follow-up.

36. **Hypercoagulation syndrome. Thrombophilia in children.** Definition. Etiology. Pathogenesis. Clinical and paraclinical features. Positive and differential diagnosis. Principles of treatment. Evolution. Prognosis. *Hemorrhagic vasculitis.* Etiology. Pathogenesis. Clinical and paraclinical manifestations. Positive and differential diagnosis. Principles of treatment. Evolution. Prognosis. Follow-up.

Pathology of adolescents.

37. **General approach of pathology in the period of adolescence.** Definition. Biologic (age) maturation. Healthy mode of life. Sexual maturation. Problems of psychic health. Drugs.

V. Recommended literature:

A. Compulsory

1. Barbara Bates. Guide to Physical Examination and History Taking, Lippincott Company. 2003, p. 714

2. Kliegman: Nelson Textbook of Pediatrics, 18th edition. ISBN-13, p. 2457.
3. Lection on the theme.
4. Maydannic V.G. Propedeutics of pediatrics. Kharkiv National Medical University. 2010, p.348

B. Additional

1. Susan M., White, Andrew J. Washington Manual TM of Pediatrics, The, 1st Edition, 2009, Lippincott Williams & Wilkins.
2. Colin D. Rudolph. Rudolphs Pediatrics, The 21 st Edition, 2003

VI. Teaching methodology: lectures, practical classes (seminars).
Forms of practical lessons (duration – 5 academic hours in conformity with the universitary curriculum).
A sick child is the principal object of study at practical classes. Each theme provided for the syllabus is presented by student's reports and discussion of sick children with respective nosologic form of the disease with active participation of students of the group.
The structure of a seminar is as follows:

1. Presentation of pediatric department specific features conformable to respective theme.
2. Presentation of pediatric case reports on the studied theme.
3. Recapitulation: growth and development, feeding, notions of etiology, pathogenesis, physiopathology of discussed diseases, particularities of examination of patients.
4. Visit of patients with the discussion of clinical picture of patient's disease, case specific features, argumentation of diagnosis, treatment recommendations.

VII. Suggestions for individual activity of the student.

- Examination – direct observation of sick children and making case report (making records on pulse, temperature, BP, respiratory rate, weight gain curve, stools etc.;
- Observation and participation in taking samples for analyses, giving injections, administration of treatment procedures, etc.;
- Attending patients at paraclinical investigations, instrumental examinations;
- Interpretation of laboratory analyses, instrumental investigations results in a particular clinical context;
- Argumentation of diagnosis, drawing up a plan of investigations and treatment for each particular clinical case, learning specificity of administration of drugs to children (on kg/mass);
- Making a case report (daily evolution of disease) under the guidance of a lecturer;
- Presentation of a case;
- Taking part in rounds of an in-patient department.

List of practical skills for students, Faculty of Medicine, discipline Pediatrics

1. Anamnesis in pediatrics – specific features.
2. Clinical (physical) complete examination of children of different ages.
3. Drawing-up of current medical documents: case report-003E, evolution.
4. Anthropometric measurements (anthropometry, somatometry, somatoscopy, physiometry) in children of different ages.

5. Assessment of nutritional status (ponderal index, nutritional index) of a child of 0-3 years old.
6. Assessment of child's physical development.
7. Assessment of psychomotor development of children of different ages.
8. Administration of medication to children of different ages.
9. Interpretation of child's laboratory investigations results: hemoleukogram, urinalysis, coprogram and others.
10. Interpretation of child's biological investigations results (blood, urine, fecal masses, cerebrospinal fluid, others).
11. Interpretation of child's image investigations results (echography, radiography, scintigraphy, echocardiography, others).
12. Assessment of malnutrition degree in children.
13. Determination of alimentary ratio in children with different degree of malnutrition.
14. Drawing-up of rehabilitation plan of a child with malnutrition.
15. Drawing-up of follow-up plan in patients with chronic diseases.
16. Interpretation of respiration functional indexes (spirography, pickflowmetry).
17. Technique of blood pressure measurement in children of different ages.
18. Interpretation of ECG indices in healthy and sick children.
19. Determination of radiologic pathologic process stage (by method of Steinbroker)in JIA.
20. Assessment of rickets degree and period.
21. Interpretation of endoscopic examination results – EGDS.
22. Presentation of clinical case report.

VIII. Assessment of knowledge

Current: Daily checking of theoretical knowledge, practical skills, perfecting medical documentation, multiple choice test, pediatric clinical observation sheet, case presentation, totalisation (formative assessment), as follows:

- Totalization 1: Child growth and development (written subjects, practical);
- Totalization 2: Nutrition of healthy children. (written subjects, written test, practical problem).

Assessment of practical skills acquired during the course is made in the last day of the practical lessons. Assessments of practical skills include 2 samples:

a) examination of a patient with assessing and presenting signs / practical maneuvers, appreciation of the physical, neuro-psychological, as elaborated tickets
b) assessment of child nutrition and correct prescription of the diet (food intake).

The conclusions are formulated and argued in writing.

Pediatrics discipline exam is one combined consisting of test (variant, Test Editor "SMPU, Nicolae Testemitanu") and oral exam. The sample of test consists of 100 tests in all subjects of Pediatrics (40 tests are simple choice and 60 multiple choice tests). The student has two hours to respond to the test. Sample is marked from 0 to 10.

The oral test includes knowledge exposure on topics from tickets. Each ticket is composed of three topics. Topics for exam (tests and the list of subjects for the oral test) are presented to the students at least one month before the session.

The final grade consists of the following components: annual average mark (coefficient 0.3), practical skills (coefficient 0.2) multiple-choice test (coefficient 0.2) oral test (coefficient 0.3). Knowledge is assessed with marks from 10 to 1 without decimals as follows:

- Grade 10 or 'excellent' (equivalent ECTS - A) will be given for acquiring 91-100% of the material;
- Grade 9 or 'very good' (equivalent ECTS - B) will be given for acquiring 81-90% of the material;
- Grade 8 or 'good' (equivalent ECTS - C) will be given for acquiring 71-80% of the material;
- Grade 6 and 7 or 'satisfactory' (equivalent ECTS - D) will be given for acquiring 61-65 and 66-70% respectively of the material;
- Grade 5 or 'weak' (equivalent ECTS - E) will be given for acquiring 51-60% of the material;
- Grade 3 and 4 (equivalent ECTS - FX) will be given for acquiring 31-40% and 41-50% of the material;
- Grade 1 and 2, or 'unsatisfactory' (equivalent ECTS - F) will be given for acquiring 0-30% of the material;

Method of the grades rounding

The sum of notes from current assessments and final examination	Final grade
5	5
5,1-5,5	5,5
5,6-6,0	6
6,1-6,5	6,5
6,6-7,0	7
7,1-7,5	7,5
7,6-8,0	8
8,1-8,5	8,5
8,6-9,0	9
9,1-9,5	9,5
9,6-10	10

The absence from the examination without good reason is recorded as 'absent' and is equivalent to the grade 0 (zero). The student is entitled to two repeated attempts of the failed exam.

IX. Language of instruction:

Romanian, Russian, English, French.