

MINISTRY OF HEALTH OF UKRAINE
ODESA NATIONAL MEDICAL UNIVERSITY
Department of phthisiopulmonology



«APPROVED»

Vice-rector for scientific and pedagogical work

Eduard BURIACHKIVSKYI

2023

WORKING PROGRAM IN THE DISCIPLINE "PHTHISIOLOGY"

Higher education level: second (master's)

Area of expertise: 22 "Health care"

Specialty: 222 "Medicine"

Educational and professional program: Medicine

The program is based on the educational and professional program "Medicine", training of specialists of the second (master's) level of higher education in specialty 222 "Medicine" of the branch of knowledge 22 "Health", approved by the Academic Council of ONMedU, dated 29.06.2023, protocol No. 8.

Developers: PhD in Medicine, prof. Matsegora N.A.,
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The work program was approved at a meeting of the Department of phthisiopulmonology
Minutes No. 1, dated 30.08.2023

Head of the Department, professor



Nina MATSEGORA

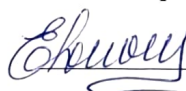
Agreed with the guarantor of the EPP



Valeriia MARICHEREDA

Approved by the subject cyclic methodical commission on therapeutic disciplines ONMedU
Protocol No. 1 dated 31.08.2023

Head of the subject cyclic methodical commission on therapeutic disciplines ONMedU

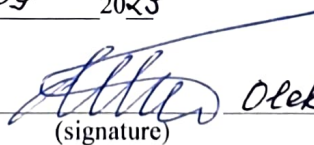


Olena VOLOSHINA

Reviewed and approved at the department meeting Department of occupational diseases and functional diagnostics and phthisiopulmonology

Minutes No. 1, dated «04» 09 2023

Head of the Department, professor



Oleksandr Ignatiev
(First Name SURNAME)

Reviewed and approved at the department meeting _____

Minutes No. ___, dated «___» _____ 20__

Head of the Department, professor _____
(signature) (First Name SURNAME)

1. Description of the discipline

Name of indicators	Characteristics of the academic discipline	
	Full-time education	
Total number: Credits - 3.0 Hours - 90.0 Semantic subsections - 3	Mandatory	
	Year of preparation	5
	Semester	I X- X
	Lectures	6 hours
	Practical	54 hours
	Independent work	30 hours
	B incl. individual tasks	0
	Final control form	Differential test

2. Purpose and objectives of the discipline

Purpose: The student's mastering of knowledge and the formation of elements of professional competencies in the field of phthisiology and the improvement of skills and competencies acquired in the study of previous disciplines.

Job:

1. Assimilation of the algorithm of actions of doctors of institutions of the general medical network to detect tuberculosis when referring patients with the help of
2. Assimilation of the main preventive measures in the foci of tuberculosis infection
3. Acquisition of skills and abilities for examination of a patient with tuberculosis and registration of the results in the appropriate medical documentation
4. Acquisition of skills and abilities for the diagnosis and differential diagnosis of tuberculosis
5. Formation of moral, ethical and deontological qualities in professional communication with a patient.

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

- IC - The ability to solve complex problems and problems in a specific area of professional activity or in the learning process involves research and / or innovation and is characterized by the complexity and uncertainty of conditions and requirements.
- GC1 - Ability to abstract thinking, analysis and synthesis.
- GC3 - Ability to communicate in a state language.
- GC4 - Ability to learn and master modern knowledge, use information and communication technologies; ability to search, handle and analyze information from different sources.
- GC6 - Ability to work in a team
- GC7 - Ability to work in a team
- GC8 - Ability to evaluate and provide quality of work performed.
- GC10 – Ability to use information and communication technologies
- GC11 – Ability to search, process and analyze information from various sources
- GC12 – Determination and persistence in relation to assigned tasks and assumed responsibilities
- GC16 - The ability to evaluate and ensure the quality of the work performed
- SC1 - communication skills and patient's clinical examination.
- SC2 - The ability to determine the list of necessary clinical and laboratory and instrumental research and evaluate their results.

SC3 - Ability to establish a preliminary and clinical diagnosis of tuberculosis.
SC4 - The ability to determine the principles of treatment of tuberculosis, the necessary mode of labor and recreation and nature of nutrition.
SC5 - The ability to diagnose urgent states.
SC6 - ability to determine tactics and provide emergency medical care.
SC7 - Ability to diagnose emergency conditions
SC8 - The ability to perform medical manipulation.
SC10 - The ability to plan and carry out sanitary and hygienic and preventive measures.
SK13 - The ability to conduct an examination of performance.
SK14 - The ability to lead medical documentation.
SK15 - The ability to conduct an examination of working capacity
SK16 - Ability to maintain medical documentation, including electronic forms
SK24 - Adherence to ethical principles when working with patients and laboratory animals
SK25 - Adherence to professional and academic integrity, to be responsible for the reliability of the obtained scientific results
SK26 - The ability to determine the management tactics of persons subject to dispensary supervision
SK27 - The ability to diagnose and determine the management tactics of patients with extrapulmonary and widespread forms of tuberculosis, including co-infection of TB/HIV with a chemoresistant course

Program learning outcomes are:

PLO1. Have thorough knowledge of the structure of professional activity. To be able to carry out professional activities that require updating and integration of knowledge. To be responsible for professional development, the ability for further professional training with a high level of autonomy.

PLO2. Understanding and knowledge of basic and clinical biomedical sciences, at a level sufficient for solving professional tasks in the field of health care.

PLO3. Specialized conceptual knowledge that includes scientific achievements in the field of health care and is the basis for conducting research, critical understanding of problems in the field of medicine and related interdisciplinary problems.

PLO4. Identify and identify leading clinical symptoms and syndromes (according to list 1); according to standard methods, using preliminary data of the patient's history, data of the patient's examination, knowledge about the person, his organs and systems, establish a preliminary clinical diagnosis of the disease (according to list 2).

PLO5. Collect complaints, anamnesis of life and diseases, evaluate the psychomotor and physical development of the patient, the state of the organs and systems of the body, based on the results of laboratory and instrumental studies to evaluate information regarding the diagnosis (according to list 4), taking into account the age of the patient.

PLO6. Establish the final clinical diagnosis by making a reasoned decision and analyzing the received subjective and objective data of clinical, additional examination, differential diagnosis, observing the relevant ethical and legal norms, under the control of the managing physician in the conditions of the health care institution (according to the list 2).

PLO7. Assign and analyze additional (mandatory and optional) examination methods (laboratory, functional and/or instrumental) (according to list 4), patients with diseases of organs and body systems for differential diagnosis of diseases (according to list 2).

PLO8. Determine the main clinical syndrome or symptom that determines the severity of the victim/injured's condition (according to list 3) by making a reasoned decision about the person's condition under any circumstances (in the conditions of a health care institution, outside its borders), including in conditions of emergency and hostilities, in field conditions, in conditions of lack of information and limited time.

PLO9. Determine the nature and principles of treatment (conservative, operative) of patients with diseases (according to list 2), taking into account the age of the patient, in the conditions of the health care institution, outside its borders and at the stages of medical evacuation, including in field conditions, on the basis of a preliminary clinical diagnosis, observing relevant ethical and legal norms, by making a reasoned decision according to existing algorithms and standard schemes, in case of the need to expand the standard scheme, be able to substantiate personalized recommendations under the control of the head physician in the conditions of a medical institution.

PLO10. Determine the necessary mode of work, rest and nutrition on the basis of the final clinical diagnosis, observing the relevant ethical and legal norms, by making a reasoned decision according to existing algorithms and standard schemes.

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

PLO17. Perform medical manipulations (according to list 5) in the conditions of a medical institution, at home or at work based on a previous clinical diagnosis and/or indicators of the patient's condition by making a reasoned decision, observing the relevant ethical and legal norms.

PLO18. To determine the state of functioning and limitations of a person's vital activities and the duration of incapacity for work with the preparation of relevant documents, in the conditions of a health care institution, based on data about the disease and its course, peculiarities of a person's professional activity, etc. Maintain medical documentation regarding the patient and the contingent of the population on the basis of regulatory documents.

PLO19. Планувати та втілювати систему протиепідемічних та профілактичних заходів, щодо виникнення та розповсюдження захворювань серед населення.

PLO20. Analyze the epidemiological situation and carry out measures for mass and individual, general and local prevention of infectious diseases.

PLO21. Search for the necessary information in the professional literature and databases of other sources, analyze, evaluate and apply this information.

PLO29. Plan, organize and carry out measures for the specific prevention of infectious diseases, including in accordance with the National calendar of preventive vaccinations, both mandatory and recommended. Manage vaccine residues, organize additional vaccination campaigns, including immunoprophylaxis measures.

PLO30. Determine the management tactics of persons subject to dispensary supervision (children, pregnant women, workers whose professions require mandatory dispensary examination).

PLO31. To determine the management tactics of persons suffering from chronic infectious diseases subject to dispensary supervision.

PLO32. The ability to diagnose and determine the management tactics of patients with extrapulmonary and common forms of tuberculosis, including co-infection of TB/HIV with a chemoresistant course.

Expected learning outcomes. As a result of studying the academic discipline, the student should:

Know:

- The main epidemiological indicators of tuberculosis disease
- Options for tactical actions for the institutions of the general network in detecting tuberculosis
- Categories of the population with an increased risk of tuberculosis
- Organization of detection of tuberculosis among the population
- Symptoms requiring compulsory examination for tuberculosis
- Mandatory and additional methods of examining tuberculosis patients
- General approaches and standard regimens for the treatment of tuberculosis patients
- Criteria for the cure of tuberculosis patients

- Urgent therapeutic measures that are used for threatening conditions in the tuberculosis clinic: pulmonary hemorrhage, spontaneous pneumothorax
- General approaches to prevention tuberculosis
- Classification and complex of preventive measures in the foci of tuberculosis infection.

Be able to:

- Collect data on patient complaints, anamnesis of disease, anamnesis of life in patients with tuberculosis.
- Evaluate diagnostic information using a standard procedure based on laboratory and instrumental findings. Determine the list of necessary clinical, laboratory and instrumental studies and evaluate their results (general blood test, general urine analysis, PCR, microbiological examination of secretions and biological fluids for Mycobacterium tuberculosis, analysis of pleural fluid, analysis of cerebrospinal fluid, methods of instrumental imaging of the chest cavity, spine, bones and joints, tuberculin diagnostics).
- Isolate the leading clinical symptom or syndrome (cough, shortness of breath, fever, hemoptysis, lymphadenopathy, meningeal syndrome, chest pain, effusion into the pleural cavity), establish a preliminary diagnosis, carry out differential diagnosis and determine the clinical diagnosis of tuberculosis
- Determine the principles of tuberculosis treatment, the necessary work and rest regime, the nature of the diet.
- Diagnose emergency conditions (pulmonary hemorrhage).
- Determine tactics and provide emergency medical care for pulmonary hemorrhage.
- Perform medical procedures (performing pleural puncture).
- Plan and carry out preventive and anti-epidemic measures for tuberculosis.
- Determine the tactics of managing persons subject to dispensary observation (children, pregnant workers, whose professions provide for mandatory dispensary examination).
- Conduct an examination of the ability to work.
- Maintain medical records
- Plan, conduct and analyze measures to organize and integrate the provision of medical care to the population.
- Observe the requirements of ethics, bioethics and deontology in their professional activities.

3. Content of the discipline

Subsection 1. General issues of phthisiology.

Theme 1. Definition of tuberculosis as a scientific and practical problem. History of phthisiology. Tuberculosis epidemiology. Etiology, pathogenesis of tuberculosis. Immunity in tuberculosis. Clinical classification of tuberculosis.

Tuberculosis as a social, medical and scientific problem.

The spread of tuberculosis in countries with different levels of economic development. The main epidemiological parameters (infection, morbidity, mortality, risk of infection) and their dynamics in the last 10 -15 years. Tuberculosis pathomorphosis.

There is contribution of prominent scientists to development of phthisiology (R. Koch, Calmette and Gurin, Z. Wolksman, M.A.Linnicova).

Causative agent of tuberculosis, morphological structure, properties. Types of mycobacterium tuberculosis (MBT) and their epidemiological significance. Variability of the MBT (L-forms, filtering forms, persistence, reversion, MBT sensitivity to drugs). Atypical mycobacterium. The stability of MBT in the environment. Infection with tuberculosis, ways of penetration and spread of the MBT in human. Local and general body reactions to tuberculosis infection.

Clinical classification of tuberculosis.

Subsection 2. Organization of medical care for patients with tuberculosis: detection, diagnosis, treatment, prevention, dispensary supervision.

Theme 2. Organization of detection and diagnosis of tuberculosis in primary and secondary care institutions. Curation of patients.

International tuberculosis control standards. Modern approaches to the detection and diagnosis of tuberculosis. Standardization of clinical care. People with high risk of development of TB disease. Tactical actions for doctors of institutions of the general medical network in the detection of tuberculosis. The special of the clinical examination of a patient with tuberculosis: complaints, anamnesis, course, epidemiological history, diseases in past, conditions of work and life; methods of physical examination: palpation, percussion and auscultation in the examination of a patient with tuberculosis; diagnostic important of changes in the general blood test in patients with pulmonary tuberculosis; the main indicators of the function of external respiration.

Microbiological diagnostics: methods of bacterioscopy, bacteriological and biological detection of MBT, the significance of their results for the diagnosis of tuberculosis. Fast methods of detection of MBT: VACTEK, linked immunosorbent assay, polymerase chain reaction (PCR).

Methods of X-ray examination of patients with pulmonary and extrapulmonary tuberculosis, tuberculosis of the intrathoracic lymph nodes. X-ray, tomography and fluorography, computer tomography, X-ray examination. Radiologic syndromes: lung root damage, dissemination, infiltration, round shadow, cavity, fibrosis. Clinical forms of pulmonary tuberculosis on the X-ray. The analysis of the X-ray, tomo- and fluorogram.

Tuberculin diagnostics. Aims of tuberculin diagnostics. The results for children and adolescents from risk groups who get tuberculin diagnosis every year. The notion of tuberculin. Modern tuberculin tests. Mantoux test with 2 TP PP-L: indications, technique, and evaluation of its results. The concept of a "virage" of a tuberculin test. Differential diagnostics of postvaccinal and infectious immunity.

Theme 3. General principles of treatment. Antimycobacterial drugs. Standard treatment regimens for patients with tuberculosis. Nonspecific therapy for patients with tuberculosis (hygiene and dietary regime, pathogenetic, symptomatic treatment). Surgical treatment. Sanatorium and resort treatment.

General principles of antimycobacterial therapy: complex, combination, controllability, duration and continuity, stage sequence, individual approach. Anti-TB drugs: classification, dosages, methods and multiplicity of introduction into the patient's body. Side reactions to antimycobacterial drugs, prevention and methods of elimination. The criteria of cure patients with tuberculosis. Standard chemotherapy regimens. The concept of chemo resistance. The categories of the treatment of patients with tuberculosis. Observation of the condition of patients with tuberculosis in the process of treatment.

Hygiene and diet regime in the clinic of tuberculosis. Pathogenetic treatment in the intensive phase (anti-inflammatory, detoxification therapy, elimination of side effects of antimycobacterial drugs) and in the support phase (general strengthening therapy). Immunocorrective therapy. Symptomatic treatment, physiotherapy.

Basic surgical methods of treatment for tuberculosis of the respiratory organs (operations on the lungs, operations on the pleura). Indication. Contraindications .. Sanatorium and resort treatment for patients with tuberculosis.

Theme 4. Prophylaxis of tuberculosis. Dispensary observation. Curation of the patients.

Social prophylaxis

Infectious control: administrative, engineering, individual protection.

Primary prophylaxis (BCG vaccination). BCG vaccine. The technique of vaccination. Contraindications to BCG vaccination. The estimation of local reactions of the body to the introduction of the vaccine. Complications of TB vaccinations.

Secondary prophylaxis (chemoprophylaxis) of tuberculosis, indications, methods.

Sanitary prophylaxis, its task. The notion of a place of tuberculosis infection. Categories of foci for the degree of epidemic danger. Work in the place of tuberculosis infection in the prevention of tuberculosis. Measures to prevent tuberculosis among people working in anti-TB institutions. Prevention of infection of people from patients with tuberculosis of animals. Sanitary and educational work. Categories dispensary.

Subsection 3. Clinical forms of tuberculosis: primary, secondary, extrapulmonary, in combination with other diseases.

Theme 5. Tuberculosis of the non-detection localization Tuberculosis of the intrathoracic lymph nodes. Primary tuberculosis complex. Pathogenesis, pathomorphology, clinical course, diagnostics, differential diagnostics. Complication. Modern scheme of the treatment. Peculiarity of tuberculosis course in children and adolescents. Curation of the patients.

Morphological basis of tuberculosis of unknown localization. Clinic, course. Differential diagnosis of tuberculosis of unknown localization with helminthes, rheumatism, chronic tonsillitis.

Classification of intrathoracic lymph nodes. Clinical and X-ray forms of tuberculous bronchoadenitis: infiltrative, tumorous, "small". Pathogenesis, pathomorphology, clinic, course, consequences. Differential diagnostics with nonspecific adenopathies (whooping cough, measles, viral infections), lymphogranulomatosis. Schemes of treatment by categories.

Pathogenesis and pathomorphology of the primary tuberculosis complex. Clinic, course, diagnostics. Differential diagnostics with nonspecific pneumonia, eosinophilic infiltrate. Schemes of treatment by categories. Residual changes of the primary tuberculous complex and their significance for the occurrence of secondary forms of tuberculosis.

Complications of tuberculosis of intrathoracic lymph nodes (atelectasis, asphyxia, hematogenous or lymphatic hematogenous dissemination, pleurisy) and primary tuberculous complex (atelectasis, asphyxia, broncho-nodular fistula, hematogenous or lymphatic hematogenous dissemination, pleurisy, disintegration, and the formation of primary caverns), their prophylaxis, diagnostics, treatment.

Features of the course of primary forms of tuberculosis in children and adolescents (high skin sensitivity to tuberculin, paraspecific reactions, significant involvement in the process of the lymphatic system, tendency to generalization in children with reduced immunity, under favorable conditions - predisposition to healing without treatment).

Theme 6. Generalized (miliary tuberculosis). Tuberculous meningitis. Pathogenesis, pathomorphology, clinical course, diagnostics, differential diagnostics. Modern scheme of the treatment. Curation of the patients.

Pathogenesis and pathomorphology of miliary tuberculosis. Clinical variants. Diagnosis Differential diagnosis with miliary carcinomatosis, sepsis. Schemes of treatment by categories. Forecast.

Pathogenesis and pathomorphology of tuberculous meningitis. Clinic, features of diagnosis and course. Method of examination of a patient with tuberculous meningitis. Spinal puncture and interpretation of the results of the study of cerebrospinal fluid. Differential diagnostics. Treatment. Consequences.

Theme 7. Subacute disseminated tuberculosis of the lung. Focal and infiltrative lung tuberculosis. Caseous pneumonia. Tuberculoma of the lungs. Fibrous- cavernous and cirrhotic tuberculosis of the lungs. Pathogenesis, pathomorphology, clinical course, diagnostics, differential diagnostics. Modern scheme of the treatment. Complications of secondary tuberculosis. Urgent help in pulmonary bleeding.

Subacute disseminated pulmonary tuberculosis. Clinic, diagnostics. Differential diagnostics with nonspecific pneumonia, pneumoconiosis. Residual changes. Schemes of treatment by categories. Complications of disseminated tuberculosis (pleurisy, bronchial, laryngeal and other organs). Methods of detection, clinic and the course of focal and infiltrative forms of tuberculosis. Methods of detection, activity of tuberculous foci. Causes of the progression of focal tuberculosis and the formation of wide processes. Clinical and X-ray variants of infiltrates. Differential diagnostics of focal tuberculosis with nonspecific pneumonia; infiltrative tuberculosis - with pleuropneumonia, lung cancer. Residual changes. Schemes of treatment by categories.

Clinical and X-ray variants of caseous pneumonia, peculiarities of their course. Differential diagnosis of caseous pneumonia with nonspecific pneumonia. Schemes of treatment by categories. Prognosis.

Classification of pulmonary tuberculoma. Features of clinical course of tuberculoma of

lungs, methods of detection. Differential diagnosis of tuberculoma with peripheral cancer, echinococcal cyst. Schemes of treatment by categories. Consequences.

Causes of the formation of fibrous-cavernous tuberculosis of the lungs. Pathogenesis, pathomorphology. The main clinical syndromes, radiological signs of fibrous-cavernous tuberculosis of the lungs. Variants of the clinical course. Prognosis.

Theme 8. Report of the history case. Training to Krok-2.

Theme 9. Features of incurable patients with tuberculosis. Tuberculosis in association with HIV/ AIDS, viral hepatitis B or C. The use of palliative treatment.

Peculiarities of supervision of incurable patients with tuberculosis, palliative methods of treatment, infection control in places with this patients.

Silicotuberculosis: Clinic, diagnosis, peculiarities of the course, treatment.

HIV-associated tuberculosis. Pathogenesis of tuberculosis with HIV infection. The most common forms, course, treatment of tuberculosis in patients with AIDS.

Clinical features of the course of hepatitis in patients with tuberculosis.

Theme 10. Extrapulmonary tuberculosis: tuberculous pleurisy (including of empiema). tuberculosis of lymph nodes, tuberculosis of skeletal system.. Clinical picture. Diagnostics. Peculiarity of the clinical course and treatment. Modern scheme of the treatment. Curation of the patients.

Pathogenesis, pathomorphology and classification of tuberculous pleurisies. The main clinical syndromes of pleurisy. Modern diagnostic methods. Aims for pleural puncture, method of it. Laboratory signs of exudate and transudate. Differential diagnosis of tuberculous pleurisy with pleurisy in pneumonia. Modern treatment regimens.

Tuberculosis of peripheral lymph nodes: pathogenesis and pathomorphology, local and general symptoms, clinical forms of tuberculosis of peripheral lymph nodes. Diagnosis. Modern treatment regimens.

Tuberculosis of bones and joints: pathogenesis and pathomorphology, local and general symptoms, clinical forms. Diagnosis. Modern treatment regimens.

4. The structure of the discipline

Themes	Number of hours					
	Total	including				
		lectur es	semi nars	practic al classes	labor atorie s	Indepen dent work
Content module 1. General issues of phthisiology.						
Theme 1. Definition of tuberculosis as a scientific and practical problem. History of phthisiology. Tuberculosis epidemiology. Etiology, pathogenesis of tuberculosis. Immunity in tuberculosis. Clinical classification of tuberculosis.	8	2	0	4	0	2
Total by content module 1	8	2	0	4	0	2
Content module 2. Organization of medical care for patients with tuberculosis: detection, diagnosis, treatment, prevention, dispensary supervision.						
Theme 2. Organization of detection and diagnosis of tuberculosis in primary care institutions. Curation of patients.	6	0	0	4	0	2
Theme 3. Organization of detection and diagnosis of tuberculosis in secondary care institutions. Curation of patients.	8	0	0	6	0	2

Theme 4. General principles of treatment. Antimycobacterial drugs. Adverse reactions to antimycobacterial drugs. Standard treatment regimens for patients with tuberculosis. Treatment criteria. Treatment of patients.	9	1	0	4	0	4
Theme 5. Prophylaxis of tuberculosis. Dispensary observation. Curation of the patients.	9	1	0	6	0	2
Total by content module 2	32	2	0	20	0	10
Content module 3. Clinical forms of tuberculosis: primary, secondary, extrapulmonary, in combination with other diseases.						
Theme 6. Tuberculosis of the non-detection localization Tuberculosis of the intrathoracic lymph nodes. Primary tuberculosis complex. Pathogenesis, pathomorphology, clinical course, diagnostics, differential diagnostics. Complication. Modern scheme of the treatment. Peculiarity of tuberculosis course in children and adolescents. Curation of the patients.	9	1	0	6	0	2
Theme 7. Generalized (miliary tuberculosis).Tuberculous meningitis. Pathogenesis, pathomorphology, clinical course, diagnostics, differential diagnostics. Modern scheme of the treatment. Curation of the patients.	6	0	0	4	0	2
Theme 8. Subacute and chronic disseminated pulmonary tuberculosis. Focal and infiltrative lung tuberculosis. Caseous pneumonia. Tuberculoma of the lungs. Fibrous- cavernous and cirrhotic tuberculosis of the lungs. Pathogenesis, pathomorphology, clinical course, diagnostics, differential diagnostics. Modern scheme of the treatment. Complications of secondary tuberculosis. Urgent help in pulmonary bleeding.	13	1	0	10	0	2
Theme 9. Report of the history case. Training to Krok-2.	6	0	0	2	0	4
Theme 10. Features of incurable patients with tuberculosis. Tuberculosis in association with HIV/ AIDS, viral hepatitis B or C. The use of palliative treatment.	6	0	0	2	0	4
Theme 11. Extrapulmonary tuberculosis: tuberculous pleurisy (including of empiema). tuberculosis of lymph nodes, tuberculosis of skeletal system.. Clinical picture. Diagnostics.	8	0	0	4	0	2

Peculiarity of the clinical course and treatment. Modern scheme of the treatment. Curation of the patients.						
Total by content module 3	48	2	0	28	0	16
Grading test	2	0	0	2	0	2
Total hours	90	6	0	54	0	30

5. Topics of lectures / practical classes

5.1 Topics of lectures

No	Theme	Number of hours
1.	Definition of tuberculosis as a scientific and practical problem. History of phthisiology. Tuberculosis epidemiology. Etiology, pathogenesis of tuberculosis. Immunity in tuberculosis. Detection and diagnostics of tuberculosis.	2,0
2.	General principles and methods of tuberculosis treatment. Prophylaxis of tuberculosis.	2,0
3.	Clinical forms of primary and secondary tuberculosis. Generalized (miliary tuberculosis). Tuberculous meningitis, tuberculous pleurisy(including of empiema). tuberculosis of lymph nodes, tuberculosis of skeletal system,	2,0
	Total hours:	6,0

5.2 Topics of practical classes

No.	Theme	Hours
Content module 1. General issues of phthisiology.		
1.	Theme 1. Practical class 1. Epidemiology of tuberculosis. Etiology, pathogenesis of tuberculosis.	2
2.	Theme 1. Practical class 2. Clinical classification of tuberculosis.	2
Content module 2. Organization of medical care for patients with tuberculosis: detection, diagnosis, treatment, prevention, dispensary supervision.		
3.	Theme 2. Practical class 3. Organization of detection and diagnosis of tuberculosis in institutions providing primary medical care. Categories of the population with an increased risk of tuberculosis.	2
4.	Theme 2. Practical class 4. Organization of detection and diagnosis of tuberculosis in institutions providing primary medical care. Options for tactical actions for doctors of institutions of the general medical network in the detection of tuberculosis.	2
5.	Theme 3. Practical class 5. Diagnosis of tuberculosis in institutions providing secondary medical care. Peculiarities of the clinical examination of a patient with tuberculosis.	2
6.	Theme 3. Practical class 6. Diagnosis of tuberculosis in institutions providing secondary medical care. Laboratory methods of detecting MBT. Tuberculin diagnosis.	2

7.	Theme 3. Practical class 7. Diagnosis of tuberculosis in institutions providing secondary medical care. X-ray diagnosis of respiratory tuberculosis. Basic X-ray syndromes.	2
8.	Theme 4. Practical class 8. General principles of treatment. Antimycobacterial drugs.	2
9.	Theme 4. Practical class 9. Adverse reactions to antimycobacterial drugs. Standard treatment regimens for patients with tuberculosis. Treatment criteria.	2
10.	Theme 5. Practical class 10. Social and secondary prevention of tuberculosis. Infection control.	2
11.	Theme 5. Practical class 11. BCG vaccination. Complications of tuberculosis immunization.	2
12.	Theme 5. Practical class 12. Sanitary prevention of tuberculosis. Dispensary supervision. Treatment of patients.	2
Content module 3. Clinical forms of tuberculosis: primary, secondary, extrapulmonary, in combination with other diseases.		
13.	Theme 6. Practical class 13. Tuberculosis of unknown location. Tuberculosis of intrathoracic lymph nodes.	2
14.	Theme 6. Practical class 14. Primary tuberculosis complex.	2
15.	Theme 6. Practical class 15. Complications of primary forms of TB. Modern treatment schemes. Peculiarities of the course of tuberculosis in children and adolescents. Treatment of patients.	2
16.	Theme 7. Practical class 16. Generalized (miliary) tuberculosis.	2
17.	Theme 7. Practical class 17. Tuberculosis of the nervous system and meninges. Modern treatment schemes. Treatment of patients.	2
18.	Theme 8. Practical class 18. Subacute and chronic disseminated pulmonary tuberculosis.	2
19.	Theme 8. Practical class 19. Focal and infiltrative pulmonary tuberculosis.	2
20.	Theme 8. Practical class 20. Caseous pneumonia. Tuberculoma of the lungs.	2
21.	Theme 8. Practical class 21. Fibrous-cavernous tuberculosis of the lungs. Modern treatment schemes.	2
22.	Theme 8. Practical class 22. Complications of secondary forms of tuberculosis. Providing emergency care for pulmonary bleeding. Treatment of patients.	2
23.	Theme 9. Practical class 23. Protection of medical history. Preparation for Step-2".	2
24.	Theme 10. Practical class 24. Peculiarities of management of incurable patients with tuberculosis, as well as at combined with pneumoconiosis, HIV infection, viral hepatitis B or C. Use of palliative treatment methods.	2
25.	Theme 11. Practical class 25. Extrapulmonary tuberculosis: tuberculous pleurisy (including empyema). Tuberculosis of peripheral lymph nodes.	2
26.	Theme 11. Practical class 26. Tuberculosis of bones and joints. Clinic. Diagnostics. Modern treatment schemes. Treatment of patients.	2
27.	Grading test	2

	Total	54
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6. Independent work

№	Themes	Number of hours
1.	Preparation to practical classes - Theoretical training, completion of reference cards, the solution of test items and situational tasks, curation of patients - Mastering the practical skills, writing history case	20,0
2.	Study of the theme which don't include to practical classes: Non-specific treatment of the patients who suffer from tuberculosis (regimens and diet, pathogenetic, symptomatic treatment). Surgical treatment. Sanatorium-climatic treatment. Curation of the patients.	4,0
3.	Preparation to the summary control	6,0
	Total hours:	30,0

7. Methods of teaching

Lectures: reveal problematic issues of the relevant departments of the discipline. Lecturers can use such options for conducting lectures as educational, informational, lecture-visualization, lecture-discussion, lecture-consultation.

Practical exercises: oral and written questioning, solving clinical situational problems, practicing patient examination skills, solving test problems.

Independent work: independent work with the textbook, independent work with the bank of test tasks KROK-2, independent solution of clinical problems.

8. Control methods and criteria for assessing learning outcomes

Current control: oral questioning, testing, solving situational clinical problems, assessing activity in the classroom.

Final control: differential credit.

Evaluation of the current educational activity at a practical / seminar / laboratory class: survey, solving a situational clinical problem, determining the ability to correctly conduct patient care, prescribe and interpret the results of laboratory and instrumental examination, substantiate the diagnosis based on the analysis of clinical and auxiliary methods of examination

The structure of the current assessment in the practical lesson:

1. Evaluation of theoretical knowledge on the topic of the lesson:
 - methods: survey, solving a situational clinical problem;
 - maximum grade - 5, minimum grade - 3, unsatisfactory grade - 2.
2. Control of practical skills:
 - the ability to properly supervise the patient, prescribe and interpret the results of laboratory and instrumental examinations, substantiate the diagnosis based on the analysis of clinical and auxiliary examination methods.
 - maximum grade - 5, minimum grade - 3, unsatisfactory grade – 2.

Criteria for current assessment in a practical lesson:

«5»	The student is fluent in the material, takes an active part in the discussion and solution of
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	the situational clinical problem, confidently demonstrates practical skills when examining a sick child and interpreting data from clinical, laboratory and instrumental studies, expresses his opinion on the topic of the lesson, demonstrates clinical thinking.
«4»	The student has a good command of the material, takes part in the discussion and solution of the situational clinical problem, demonstrates practical skills when examining a sick child and interpreting the data of clinical, laboratory and instrumental studies with some errors, expresses his opinion on the topic of the lesson, demonstrates clinical thinking.
«3»	The student does not have sufficient knowledge of the material, he takes part in the discussion and solution of the situational clinical problem, demonstrates practical skills when examining a sick child and interpreting data from clinical, laboratory and instrumental studies with significant errors.
«2»	The student does not own the material, does not take part in the discussion and solution of the situational clinical problem, does not demonstrate practical skills when examining a sick child and interpreting data from clinical, laboratory and instrumental studies.

Only those students who do not have academic debt and have an average score for current educational activities of at least 3.00 are allowed to the final control (differential credit).

Maximum current academic performance - 5.0

Minimum number of points for admission to differential credit - 3.0

Evaluation of the results of the students' training during the final control - differentiated assessment

The content of the evaluated activity	Scores
1. Determination of the clinical form of tuberculosis, description of the diagnosis of the clinical form of tuberculosis, establishment of a clinical diagnosis, differential diagnosis of the clinical form of tuberculosis.	3
2. Determination of the tactics of treatment of the clinical form of tuberculosis and prevention.	2

Criteria for assessing the learning outcomes of education seekers when passing differential credit:

«5»	Exhibited to a student who systematically worked during the semester, showed versatile and deep knowledge of the program material during the exam, is able to successfully complete the tasks provided for by the program, mastered the content of the main and additional literature, realized the relationship of individual sections of the discipline, their significance for the future profession, discovered creative ability to understand and use educational and program material, showed the ability to independently update and replenish knowledge; level of competence - high (creative)
«4»	Exhibited to a student who has discovered a complete knowledge of the educational and program material, successfully completes the tasks provided for by the program, has mastered the basic literature recommended by the program, has shown a sufficient level of knowledge in the discipline and is capable of independently updating and updating them in the course of further education and professional activity; level of competence - sufficient (constructive and variable)

«3»	Exhibited to a student who has discovered knowledge of the basic educational and program material in the amount necessary for further study and subsequent work in the profession, copes with the tasks provided for by the program, made some mistakes in the answers on the exam and when performing examination tasks, but has the necessary knowledge to overcoming mistakes made under the guidance of a scientific and pedagogical worker; competence level - average (reproductive)
«2»	Exhibited to a student who did not reveal sufficient knowledge of the main educational and program material, made fundamental mistakes in performing the tasks provided for by the program, cannot use knowledge in further training without the help of a teacher, and could not master the skills of independent work; competence level - low (receptive-productive)

9. Distribution of points received by applicants for higher education

The obtained average score for the academic discipline for applicants who have successfully mastered the work program of the academic discipline is converted from a traditional four-point scale to points on a 200-point scale, as shown in the table:

Conversion table of a traditional assessment into a multi-point scale

National assessment	mark
«5»	185 – 200
«4»	151 – 184
«3»	120 – 150
«2»	Lower 120

A multi-point scale (200-point scale) characterizes the actual success of each applicant in learning the educational component. The conversion of the traditional grade (average score for the academic discipline) into a 200-point grade is performed by the information and technical department of the University.

According to the obtained points on a 200-point scale, the achievements of the applicants are evaluated according to the ECTS rating scale. Further ranking according to the ECTS rating scale allows you to evaluate the achievements of students from the educational component who are studying in the same course of the same specialty, according to the points they received.

The ECTS scale is a relative-comparative rating, which establishes the applicant's belonging to the group of better or worse among the reference group of fellow students (faculty, specialty). An "A" grade on the ECTS scale cannot be equal to an "excellent" grade, a "B" grade to a "good" grade, etc. When converting from a multi-point scale, the limits of grades "A", "B", "C", "D", "E" according to the ECTS scale do not coincide with the limits of grades "5", "4", "3" according to the traditional scale. Acquirers who have received grades of "FX" and "F" ("2") are not included in the list of ranked acquirers. The grade "FX" is awarded to students who have obtained the minimum number of points for the current learning activity, but who have not passed the final examination. A grade of "F" is assigned to students who have attended all classes in the discipline, but have not achieved a grade point average (3.00) for the current academic activity and are not admitted to the final examination.

Applicants who study in one course (one specialty), based on the number of points scored in the discipline, are ranked on the ECTS scale as follows:

Conversion of traditional discipline grade and ECTS scores

ECTS's mark	Statistical indicator
«A»	the best 10% of students
«B»	the next 25% of students
«C»	the next 30% of students
«D»	the next 25% of students
«E»	the next 10% of students

10. Methodological support

- Working program of the academic discipline
- Syllabus of the academic discipline
- Textbooks

Extrapulmonary tuberculosis: N.A. Matsegora, V.G. Marichereda, P.B. Antonenko, O.E. Shpota, I.M. Smolska, A.V. Kaprosh, L.P. Omelyan, A.S. Zaitsev. – Odesa: Oldi+, 2022, – 430 p. ISBN 978-966-289-670-1

Tuberculosis of bones and joints: method. recommendations for students and doctors of interns of VNMZ IV level of accreditation / N. A. Matsegora, A. Ya. Lekan, L. P. Omelyan [and others]. Odessa: ONMedU, 2018.24 p.

- Multimedia presentations
- Situational clinical tasks
- Methodical development of practical exercises
- Electronic bank of test items by divisions by discipline.

11. List of questions for differential credit

1. Causative agent of tuberculosis, his kinds and forms of existence (L-forms), property.
2. There is contribution of prominent scientists to development of phtisiology (R. Koch, Calmette and Gurin, Z. Wolksman, M.A. Linnicova).
3. Sources of tubercular infection. An excretion of mycobacteria in an environment. Ways of tuberculosis infection. Pathogeny of tuberculosis.
4. Clinical classification of tuberculosis.
5. There are methods of detection of tuberculosis. Variants of tactical actions are for establishments of general medical network in the detection of tuberculosis.
6. There are methods of laboratory finding of MTB. Determination of medical resistans and its clinical value.
7. There are methods of roentgenologic examination of patients with lung tuberculosis. Basic roentgenologic signs of tuberculosis.
8. There are groups of the high risk of TB disease. There are contingents of populations which is subject a prophylactic examination one time in a year.
9. Tuberculindiagnosics: Montoux test with 2 TU and estimation of its results. „Virag” of tuberculin tests.
10. There are basic principles of treatment of patients with lung tuberculosis.
11. There are categories of treatment of patients with lung tuberculosis. Scheme of chemotherapy.
12. There is non-specific treatment of the patients who suffer from tuberculosis (regimens and diet, pathogenetic, symptomatic treatment).
13. Modern methods of surgical treatment of lung tuberculosis.
14. BCG vaccination. Method and conducting technique. Estimation of results. Complication of BCG vaccination.

15. Social and sanitary prophylaxis of tuberculosis. Chemoprophylaxis of tuberculosis.
16. Place of tubercular infection, their classification. Work in the place of tuberculous infection.
17. Early period of primary tubercular infection. Tuberculosis of the non-detection localization. Pathogenesis, pathomorphology, clinical course, diagnostics, differential diagnostics.
18. Primary tuberculosis complex. Pathogenesis, pathomorphology, clinical course, diagnostics, differential diagnostics. Complication. Modern scheme of the treatment.
19. Tuberculosis of the intrathoracic lymph nodes. Pathogenesis, pathomorphology, clinical course, diagnostics, differential diagnostics. Complication. Modern scheme of the treatment.
20. Disseminated tuberculosis of the lung. Pathogenesis, pathomorphology, clinical course, diagnostics, differential diagnostics. Modern scheme of the treatment.
21. Focal tuberculosis of the lungs. Pathogenesis, clinical course, diagnosis, treatment.
22. Infiltrative tuberculosis of the lungs. Pathogenesis, clinical course, diagnosis, treatment.
23. Pulmonary tuberculoma. Pathogenesis, clinical course, diagnosis, treatment.
24. Caseous pneumonia. Pathogenesis, clinical course, diagnosis, treatment.
25. Fibrosis – cavernous pulmonary tuberculosis. Pathogenesis, clinical course, treatment.
26. Complication of tuberculosis: hemoptysis, pulmonary bleeding. Pathogeny, diagnostics, treatment, urgent help.
27. Tuberculous pleurisy. Pathogeny, clinic, diagnostics, treatment, outcomes.
28. Miliary tuberculosis. Pathogeny, features of clinical motion, diagnostics, treatment, outcomes.
29. Tuberculous meningitis. Pathogenesis, pathomorphology, clinical course, diagnostics, differential diagnostics. Modern scheme of the treatment.
30. Tuberculosis of peripheral lymphatic knots. Pathogeny, clinic, diagnostics, treatment, consequences.
31. Tuberculosis of bones and joints: pathogeny, basic localizations, clinical course.
32. Silicotuberculosis. Pathogeny, clinic, diagnostics, treatment, outcomes.
33. Tuberculosis and HIV/AIDS. Pathogeny, clinic, diagnostics, treatment, outcomes.

12. Recommended reading

- main:

1. Phthysiology: textbook / V. I. Petrenko, L. D. Todoriko, L. A. Grischuk [and others]; ed. V. I. Petrenko. Kiev : Medicine. 2015. 471 p.

- additional:

1. Prevention of tuberculosis. Textbook for students and doctors of interns of VNMZ IV level of accreditation and doctors / V. I. Petrenko, M. G. Dolinskaya, A. V. Alexandrin, V. V. Petrenko. M.: 2 Print, 2017 . 88 p. URL: <http://tb.ucdc.gov.ua/uploads/files/prophilaktica.pdf>.

2. BCG vaccines: WHO position paper. February 2018. URL: https://www.who.int/immunization/policy/position_papers/bcg/en/

3. WHO guidelines on tuberculosis infection prevention and control. 2019 URL: <https://apps.who.int/iris/bitstream/handle/10665/311259/9789241550512-eng.pdf>

4. Guidelines for treatment of drug-susceptible tuberculosis and patient care, WHO. 2017. URL: <https://apps.who.int/iris/bitstream/handle/10665/255052/9789241550000-eng.pdf>

5. Biochemical Value Dynamics in Patients with Multidrug-Resistant Tuberculosis / HIV with CD4 + Lymphocyte Cells below 50 Cells / μ CLandits Variability in the Application of Adjuvant Immunoglobulin Therapy / N. A. Matsegora, A.V. Kaprosh, P. B. Antonenko // International Journal of Mycobacteriology. 2019; 8 (4): 374 - 380. (SCOPUS).

6. Extrapulmonary and miliary tuberculosis in patients with TB / HIV coinfection / V. I. Petrenko, M. G. Dolinskaya, A. N. Raznatovska - M. 2015 DKS Center - 112 p. URL: http://tb.ucdc.gov.ua/uploads/files/usaaid_170x240_fp_new.pdf

7. Tuberculosis of bones and joints: method. recommendations for students and doctors of interns of VNMZ IV level of accreditation / N. A. Matsegora, A. Ya. Lekan, L. P. Omelian [and others]. - Odessa: ONMedU, 2018. 24 p.

8. Global Laboratory Initiative model TB diagnostic algorithms. 2018. URL: http://www.stoptb.org/wg/gli/assets/documents/GLI_algorithms.pdf

9. Topical issues of phthisiology: a guide / DG Krizhanoskiy, V. A. Freivald, N. A. Marchenko (and others). Dnepropetrovsk: Serednyak T.K., 2015.155 p.

- informational resources:

1. Site of the Public Health Center of the Ministry of Health of Ukraine. URL: <http://phc.org.ua/>
2. Questions of tuberculosis on the WHO website. URL: <http://www.who.int/tb/en/>
3. National Tuberculosis Resource Center. URL: <http://tb.ucdc.gov.ua>