

The Ministry of Health of Ukraine
Danylo Halytsky Lviv National Medical University

Department of Phthisiology and Pulmonology

“Approved” _____
The first vice-rector of scientific-
pedagogical work
Assoc. prof. I.SOLONYNKO _____
«_____» _____ 2023

EXECUTABLE CODE OF EDUCATIONAL DISCIPLINE

_____ **OC 27.2. PHTHISIOLOGY** _____
_____ **OC 27. INFECTIOUS DISEASES, including PHTHISIOLOGY** _____

training of specialists of the second (master) level of higher education
field of knowledge 22 "Health care"
specialty 222 "Medicine"

Discussed and accepted on methodical
meeting of Department of phthisiology
and pulmonology
Protocol № on _____ 2023
Chief of Department
_____ Prof. Kostyk O.P.

Ratified
a methodical commission of therapeutic
disciplines
Protocol № on _____ 2023
Head of methodical commission
_____ Prof. Radchenko O.M.

INTRODUCTION

Program of study of the discipline "Phthisiology"

according to the Standard of higher education of the second (master's) level

field of knowledge 22 "Health care"

specialty 222 "Medicine"

educational program of master of medicine

Annotation of the discipline "Phthisiology"

The educational discipline "Phthisiology" is a mandatory component of the educational and professional training program for masters of medicine. Students study epidemiology, methods of timely detection and diagnosis, clinical and diagnostic signs of tuberculosis, basic principles of treatment of patients with tuberculosis, prevention of tuberculosis and infection control measures; improve the ability to interview and objectively examine the patient, interpret the data of laboratory and instrumental studies, formulate a clinical diagnosis, prescribe treatment, provide emergency medical care.

| Structure of educational disciplines | Amount of credits, hours, from them | | | | A year of studies , semester | Type of control |
|--|-------------------------------------|----------|-------------------|------|------------------------------------|-----------------------|
| | All | Audience | | S-Ws | | |
| | | Lectures | Practical classes | | | |
| Module: Phthisiology Semantic modules 2 | 2 ECTS/ 60 hours | 8 | 22 | 30 | 5 course (IX or X semesters) | Differentiated offset |

The subject of study of the discipline are:

- epidemiology of tuberculosis, methods of timely detection and diagnosis of tuberculosis;
- clinical and diagnostic signs of tuberculosis;
- basic principles of treatment of patients with tuberculosis;
- tuberculosis prevention and infection control measures.

Interdisciplinary connections.

Tuberculosis as a discipline:

- is based on the study of anatomy, physiology, pathomorphology, pathophysiology, microbiology, pharmacology, propaedeutics of internal medicine, propaedeutics of pediatrics, radiology, hygiene and ecology, epidemiology and integrates with these disciplines;
- involves the relationship with the following disciplines: internal medicine, surgery, pediatrics, neurology, infectious diseases, pediatric infectious diseases, oncology and

develops the ability to apply knowledge of tuberculosis in further education and professional activities.

1. Aim and task of educational discipline

1.1 *The purpose of the discipline “Phthysiology“* is the acquisition of basic knowledge of phthysiology by students, mastering modern diagnostic methods, differential diagnosis, treatment, prevention of tuberculosis, formation of the ability to use knowledge, professional skills and practical skills to solve various problems.

1.2. *The main tasks of studying the discipline “Phthysiology“ are:*

- to determine the risk factors for tuberculosis;
- to interpret the results of tuberculin tests, bacteriological methods of sputum research;
- to determine clinical forms of tuberculosis and formulate a clinical diagnosis according to the classification;
- to make the scheme of examination of the patient with tuberculosis, to analyze the received data;
- to prescribe standard treatment regimens for patients with respiratory tuberculosis;
- to determine the consequences of treatment of patients with respiratory tuberculosis;
- to diagnose emergencies in patients with tuberculosis and provide them with emergency care.

1.3 *Competences and learning outcomes*, the formation of which is facilitated by the discipline (relationship with the normative content of training of applicants of higher education, formulated in terms of learning outcomes in the Standard of Higher Education).

The discipline ensures that students *competencies* according to the requirements of the Standard of Higher Education:

Integral competence - the ability to solve complex problems, including research and innovation in the field of medicine. Ability to continue learning with a high degree of autonomy.

-General:

GC1 – Ability to abstract thinking, analysis and synthesis.

GC2 – Ability to to learn and master modern knowledge.

GC3 – Ability to apply knowledge in practical situations.

GC4 – Knowledge and understanding of the subject area and understanding of professional activity.

GC5 – Ability to adapt and act in a new situation.

GC6 – Ability to make informed decisions.

GC7 – Ability to work in a team.

GC8 – Interpersonal skills.

GC9 – Ability to communicate in the state language both orally and in writing.

GC10 – Ability to communicate in a foreign language.

GC11 – Skills in the use of information and communication technologies.

GC12 – Definiteness and perseverance in terms of tasks and responsibilities.

GC13 – Ability to act socially responsibly and consciously.

GC14 – The desire to preserve the environment.

GC15 – Ability to act on ethical considerations.

-Special (professional, subject):

SC1 – Skills of interviewing and clinical examination of the patient.

SC2 – Ability to determine the required list of laboratory and instrumental studies and evaluate their results.

SC3 – Ability to establish preliminary and clinical diagnoses of tuberculosis.

SC4 – Ability to determine the required mode of work and rest in the treatment of tuberculosis.

SC5 – Ability to determine the nature of nutrition in the treatment of tuberculosis.

SC6 – Ability to determine the principles and nature of tuberculosis treatment.

SC7 – Ability to diagnose of emergency conditions.

SC8 – Ability to determine the tactics of emergency medical care.

SC9 – Emergency care skills.

SC11 – Skills to perform medical manipulations.

SC13 – Ability to carry out sanitary and hygienic and preventive measures.

SC14 – Ability to plan and carry out preventive and anti-epidemic measures against infectious diseases.

SC15 – Ability to determine the tactics of management of persons subject to dispensary supervision.

SC16 – Ability to conduct a performance examination.

SC17 – Ability to keep medical records.

Detailing of competencies according to NQF descriptors in the form of "Competence Matrix".

Competence matrix

| Nº | Competence | Knowledge | Skills | Communication | Autonomy and responsibility |
|-----------------------------|---|---|--|--|--|
| General competencies | | | | | |
| 1. | Ability to abstract thinking, analysis and synthesis. | Know the methods of analysis and synthesis. | Be able to reason, prove, generalize and form conclusions. | Establish appropriate links to achieve goals. | Bear responsibility for the combination of analysis and synthesis during the study of the subject. |
| 2. | Ability to learn and master modern knowledge. | Ability to learn and master modern knowledge. | Be able to master modern knowledge the ability to learn. | Establish appropriate links to achieve goals. | Be responsible for the timely acquisition of modern knowledge. |
| 3. | Ability to apply knowledge in practical situations | Know the methods of implementing knowledge in solving practical problems. | Be able to use professional knowledge to solve practical problems. | Establish links with the subjects of practical activities. | Be responsible for the validity of decisions. |

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| 4. | Knowledge and understanding of the subject area and understanding of professional activity | Have a deep knowledge of the structure of professional activity. | Be able to carry out professional activities that require updating and integration of knowledge. | Ability to effectively form a communication strategy in professional activities. | To be responsible for professional development, ability to further professional training with a high level of autonomy. |
| 5. | Ability to adapt and action in a new situation. | Know the types and methods of adaptation, principles of action in a new situation. | To be able to apply means of self-regulation, to be able to adapt to new situations (circumstances) of life and activity. | Establish appropriate connections to achieve results. | Be responsible for the quality of professional tasks in the new situation. |
| 6. | Ability to make informed decisions. | Know the factors that influence decision-making | Be able to make informed decisions. | Use communication strategies in order to discuss pita-nna, exchange thoughts. | Be responsible for the validity of decisions |
| 7. | Ability to work in a team. | Know the tactics and strategies of communication, laws and ways of communicative behavior. | Be able to choose ways and strategies to communicate to ensure effective teamwork. | Use communication strategies and interpersonal skills. | Be responsible for choosing the method of communication. |
| 8. | Interpersonal skills. | Know the laws and methods of interpersonal interaction. | Be able to choose ways and strategies of communication for interpersonal interaction | Use interpersonal skills. | Be responsible for choosing the method of communication. |
| 9. | Ability to communicate in the foreign language. | Have basic knowledge of a foreign language. | Be able to communicate in a foreign language. | Use the foreign language in professional activity. | Bear responsibility for the development of professional knowledge with the uprooting of a foreign language. |
| 10. | Ability to use of information and communication technologies. | Have in-depth knowledge in the field of information and communication technologies used in professional activities. | Be able to use information and communication technologies in the professional field. | Use information and communication technologies in professional activities. | Be responsible for the development of professional knowledge and skills. |
| 11. | Ability to search, study and analyze information from various sources. | Know the methods and methods of finding information of cut sources. | Be able to search and analyze information from various sources. | Apply communication technologies in the search and analysis of information. | Be responsible for the ability to search and process information from various sources. |
| 12. | Definiteness and persistence to the tasks and responsibilities. | Know the responsibilities and ways to perform the tasks. | Be able to determine the purpose and objectives; be persistent and conscientious in the performance of duties. | Establish interpersonal relationships to effectively perform tasks and responsibilities. | Responsible for the quality of the tasks. |
| 13. | Awareness of equal opportunities and gender problems. | Know the possible problems of gender equality. | Be able to exercise control over the observance of gender equality within the limits of authority. | To take into account the interests of all members of the social community, to tolerate persons . | Realize and adhere to gender equality.. |

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| 14. | Ability to exercise their rights and responsibilities as a member of society, to realize values of civil (free democratic) society and the need for its sustainable development, rule of law, human and civil rights and freedoms in Ukraine. | Know your rights and responsibilities as a member of society. | Be able to exercise their rights and responsibilities as a member of society. | Understand the values of civil society. | Be personally responsible for the exercise of their rights and obligations. |
| 15. | Ability to preserve and multiply moral, cultural, scientific values and the achievements of society on the basis of understanding the history and laws of the development of the subject area, its place in the general. a system of knowledge about nature and society and in the development of society, technology and technology, use different types and forms of motor activity for active rest and leading a healthy lifestyle. | Know the moral, cultural, scientific values and achievements of society, the basic rules of a healthy | Demonstrate socially responsible and conscious behavior, follow humanistic and democratic values in professional and social activities. | Promote moral, cultural, scientific values, leading a healthy lifestyle. | Take effective measures to maintain a healthy lifestyle and maintain health (personal and environment) |
| Special (professional, subject) competencies | | | | | |
| 1. | Ability to collect medical information about the patient and analyze clinical data. | Know the standard methods and schemes of interviewing, physical examination of the patient. | Be able to collect patient complaints, medical history and life, conduct a physical examination of the patient. | Effectively form a communication strategy when communicating with the patient and his relatives. | Carry responsibility for the quality collection of patient information based on survey, examination, palpation, percussion and auscultation. |
| 2. | Ability to determine the required list of laboratory and instrumental studies and evaluate their results. | Know the necessary laboratory and instrumental tests for the diagnosis of tuberculosis. | Be able to schedule laboratory and instrumental examinations by applying standard methods and analyze the results of laboratory and instrumental studies. | Professionally inform the patient about the need for a list laboratory and instrumental research and the results of these examinations. | Be responsible for the correct appointment of laboratory and instrumental tests, timely and accurate evaluation of their results. |

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| 3. | Ability to establish a preliminary and clinical diagnosis. | Know algorithms for the diagnosis of tuberculosis, the selection of leading symptoms or syndromes. | On the basis of the examination to be able to diagnose tuberculosis and formulate it according to the clinical classification. | On the basis of normative documents to keep medical documentation of the patient (card of the outpatient / inpatient patient). | Adhering to ethical and legal norms, be responsible for making informed decisions and actions regarding the correctness of the preliminary and clinical diagnosis. |
| 4. | Ability to determine the required mode of work and rest in the treatment of diseases. | Know the algorithms and standard schemes for determining the mode of work and rest in tuberculosis. | Be able to determine the necessary mode of work and rest of patients with tuberculosis. | To form and inform the patient and / or his relatives about the necessary mode of work and rest. | Be responsible for the validity of the appointment of work and rest. |
| 5. | Ability to determine the nature of nutrition in the treatment and prevention of tuberculosis. | To know algorithms and standard schemes of selection of medical food at tuberculosis. | Be able to choose the right food for patients with tuberculosis. | Form and communicate to the patient and / or his relatives conclusions about proper nutrition in tuberculosis. | Be responsible for selecting the right diet for TB patients. |
| 6. | Ability to determine the principles and nature of treatment and prevention of tuberculosis. | Have specialized knowledge of algorithms and standard schemes treatment and prevention of tuberculosis. | Be able to prescribe treatment to a patient with tuberculosis, . prevention of tuberculosis. | Inform the patient about the need for mandatory treatment of tuberculosis and strict adherence to all doctor's recommendations. | Be responsible for the timely appointment of adequate treatment of a patient with tuberculosis. |
| 7. | Ability to diagnose emergencies. | Know the clinical signs and methods of diagnosing emergencies in tuberculosis (pulmonary hemorrhage, spontaneous pneumothorax). | Be able to timely identify and adequately assess the urgent condition of the patient. | It is reasonable to inform the patient and / or relatives about the presence of an emergency and the need for emergency medical care. | Be responsible for the timeliness and accuracy of determining the emergency condition and its severity. |
| 8. | Ability to determine the tactics of emergency medical care. | Know the algorithms for providing emergency medical care in emergencies in tuberculosis. | Be able to apply tactics of emergency medical care. | It is reasonable to inform the patient or relatives about the need for emergency care and obtain consent for medical intervention. | Be responsible for the correctness of determining the tactics of emergency medical care. |
| 10. | Skills to perform medical manipulations. | Have specialized knowledge of algorithms for performing medical manipulations. | Be able to perform medical manipulations. | It is reasonable to form and convey to the patient and / or his relatives conclusions about the need for medical manipulations. | Be responsible for the quality of medical manipulations. |

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| 13. | Ability to carry out sanitary and hygienic and preventive measures. | Know the types of tuberculosis prevention (vaccination, BCG revaccination; chemoprophylaxis; sanitary prevention). | Be able to carry out sanitary and hygienic and preventive measures aimed at preventing infection and tuberculosis of the population. | Inform the population about the need for tuberculosis prevention. | To be responsible for timely and high-quality tuberculosis prevention. |
| 14. | Ability to planning and conducting Preventive and anti-epidemic measures for tuberculosis. | To know the system of anti-epidemic measures of infectious control of tuberculosis. | Be able to carry out anti-epidemic measures in the center of tuberculosis infection. | Inform the population and medical staff about the need for anti-epidemic measures in the center of tuberculosis infection and strict compliance with the requirements of infection control in medical institutions. | To be responsible for the timeliness of anti-epidemic measures in the center of tuberculosis infection and strict compliance with the requirements of infection control in medical institutions. |
| 16. | Ability to keep medical records and electronic forms.. | Know the system of official document management in the work of a doctor, the basic rules of medical records. | Be able to fill out medical documents, in particular using modern computer information technology. | Apply interpersonal skills for quality medical records. | Carry responsibility for the quality and completeness of medical records. |
| 24. | Compliance with ethical principles when working with patients, laboratory animals. | Know ethical principles when working with patients and laboratory animals. | Be able to apply ethical standards and principles in professional activities. | In professional activity there is a lot of moral and ethical principles and professional subordination. | Be personally responsible for compliance with ethical standards and principles in a professional. |
| 25. | Adherence to professional and academic integrity, bear the answer-range for reliability of the obtained scientific results. | Know the organizational and legal factors of professional and academic integrity. | To put into practice the standards and principles of professional and academic integrity. | Promote dissemination among representatives of the professional and scientific environment priorities of professional and academic integrity. | Be personally responsible for professional and academic integrity, reliability of the obtained scientific results. |

Integrative learning outcomes, the formation of which contributes to the academic discipline "Phthisiology":

- to carry out professional activity in social interaction, which is based on humanistic and ethical principles;
- apply knowledge of general and professional disciplines in professional activities;
- comply with the norms of sanitary and hygienic regime and safety requirements during professional activities;
- use the results of independent search, analysis and synthesis of information from various sources to solve typical problems of professional activity;
- argue information for decision-making, be responsible for them in standard and non-standard professional situations;
- adhere to the principles of deontology and ethics in professional activities;

- to carry out professional communication in the Ukrainian literary language, to use skills of oral communication in foreign languages, analyzing texts of a professional direction and to translate foreign language information sources;
- adhere to the norms of communication in professional interaction with colleagues, management, work effectively in a team;
- analyze the information obtained as a result of scientific research, summarize, systematize and use it in professional activities.

Program training results for the discipline "Phthiology":

- PTR-1. Have knowledge of the structure of professional activity. Be able to carry out professional activities that require updating and integration of knowledge. Be responsible for professional development, the ability to further professional training with a high level of autonomy.
- PTR-2. Understanding and knowledge of basic and clinical biomedical sciences, at a level sufficient to solve professional problems in the field of health care.
- PTR-3. Specialized conceptual knowledge, which includes scientific achievements in the field of health and is the basis for research, critical understanding of problems in the field of medicine and related interdisciplinary problems.
- PTR-4. To identify the leading clinical symptoms and syndromes 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, to establish a preliminary clinical diagnosis of the disease.
- PTR-5. Collect complaints, history of life and disease, evaluate the psychomotor and physical development of the patient, the state of organs and systems of the body, based on the results of laboratory and instrumental studies, evaluate information on the diagnosis, taking into account the patient's age.
- PTR-6. Establish a final clinical diagnosis by making an informed decision and analyzing the obtained subjective and objective data of clinical, additional examination, differential diagnosis, observing the relevant ethical and legal norms, under the supervision of a physician-leader in a health care institution.
- PTR-7. Assign and analyze additional (mandatory and optional) methods of examination (laboratory, functional and/or instrumental), patients with diseases of organs and body systems for differential diagnosis of diseases.
- PTR-8. Determine the main clinical syndrome or what causes the severity of the condition of the victim/victim by making an informed decision and assessing the condition of a person under any circumstances (in the conditions of a health care institution, outside it), including in an emergency and military operations, in the field, in conditions of lack of information and limited time.
- PTR-9. Determine the nature and principles of treatment of patients with tuberculosis (conservative, operative), taking into account the age of the patient, in the conditions of the health care institution, outside it and at the stages of medical evacuation, incl. in the field, based on a preliminary clinical diagnosis, adhering to appropriate ethical and legal standards, by making an informed decision on existing algorithms and standard schemes, if necessary, expand the standard

scheme to be able to justify personalized recommendations under the supervision of the doctor-manager in the conditions of the medical institution.

- PTR-10. 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 an informed decision according to existing algorithms and standard schemes.
- PTR-14. Identify tactics and provide emergency medical care for medical emergencies in limited time settings in accordance with existing clinical protocols and treatment standards.
- PTR-17. Perform medical manipulations in a medical institution, at home or at work on the basis of a preliminary clinical diagnosis and/or indicators of the patient's condition by making an informed decision, observing appropriate ethical and legal standards.
- PTR-19. Plan and implement a system of anti-epidemic and preventive measures for the emergence and spread of diseases among the population.
- PTR-20. Analyze the epidemiological state and conduct mass and individual, general and local prevention of infectious diseases.
- PTR-21. Search for necessary information in professional literature and databases of other sources, analyze, evaluate and apply this information.
- PTR-24. Organize the necessary level of individual safety (own and persons cared for) in case of typical dangerous situations in the individual field of activity.
- PTR-25. It is clear and unambiguous to convey their own knowledge, conclusions and arguments on health issues and related issues to specialists and non-specialists.
- PTR-27. Communicate fluently in English, both orally and in writing to discuss professional activities, research and projects.
- PTR-29. Plan, organize and conduct activities 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 activities.

2. The information volume of the academic discipline

2 ECTS credits/60 hours are given to study the academic discipline.

Content section 1. General issues of phthisiology. Methods of examination of a patient with tuberculosis. Treatment of tuberculosis.

Specific objectives:

- determine the risk factors for development of TB;
- analyze the main epidemiological indicators of tuberculosis prevalence (infection, morbidity, mortality);
- characterize the features of the causative agent of tuberculosis;
- determine the ways of infection with tuberculosis;
- analyze the main sections of the clinical classification of tuberculosis and formulate a clinical diagnosis in accordance with the classification;
- determine the categories of the population at increased risk of tuberculosis;
- identify clinical signs of tuberculosis;

- determine the role of bacterioscopic, bacteriological, molecular genetic methods for the study of sputum;
- analyze the main radiological syndromes in the clinic of tuberculosis;
- determine the algorithm of actions of doctors of institutions of the general medical network for the detection of tuberculosis when patients seek help;
- analyze the results of the Mantoux test from 2 TU of PPD-L;
- explain the concept of "conversion" of the tuberculin test and its significance for early diagnosis of tuberculosis;
- interpret the basic principles of treatment of a patient with tuberculosis;
- diagnose side effects of anti-TB drugs and determine methods for their prevention;
- make standard regimens of antimycobacterial therapy;
- determine the types of drug resistance of MBT;
- determine the criteria for the cure of patients with tuberculosis.

Theme 1. Definition of tuberculosis as a scientific and practical problem. The history of the development of phthisiology. Epidemiology of tuberculosis. Etiology, pathogenesis of tuberculosis. Tuberculosis immunity. Clinical classification of tuberculosis. Microbiological diagnosing of tuberculosis.

Tuberculosis as a social, medical and scientific problem.

The main stages of the development of the doctrine of tuberculosis. The significance of the works of Hippocrates, Avicenna, R.Laneenk, R.Koha, I.Pulya, K.Rentgen. The role of scientists MI Pirogov, A.Kalmetta and Guerin, S.P.Botkin, F.G.Yanovsky, O.A.Kiselya, Z.Vaksman, M.P.Pilipchuk, O.S.Mamolot, K. Stilbo.

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

Risk factors for development of TB. Causative agent of tuberculosis, morphological structure, properties. Mycobacterium tuberculosis (MBT) species and their epidemiological significance. MBT variability (L-forms, filter forms; persistence, reversion). Chemoresistant MBT and their clinical significance. Atypical mycobacteria. Resistance of MBT in the environment.

Sources of tuberculosis infection. Isolation of mycobacteria into the environment. Ways of spread infection with tuberculosis. Local and general body reactions to tuberculosis infection. Natural resistance to tuberculosis and anti-tuberculosis immunity. Humoral and cellular immunity, their mechanisms.

Clinical classification of tuberculosis. Principles of construction of classification of tuberculosis. The classification sections reflecting the type of tuberculosis process, the main clinical forms, the characteristics of the tuberculous process and its complications, the clinical and dispensary categories of patient records, the effectiveness of treatment for patients with tuberculosis, the effects of tuberculosis. Formulation of the diagnosis of tuberculosis according to the classification.

Microbiological diagnosing of tuberculosis: methods of bacterioscopic, bacteriological and biological detection of MBT, the value of their results for diagnosis of tuberculosis. Determination of the sensitivity of MBT to anti-TB drugs. Express methods of molecular genetic diagnosis of tuberculosis.

Theme 2. Management of revealing of tuberculosis. Methods of detecting and diagnosing tuberculosis (x-ray, tuberculin skin test, gamma interferon test).

Ways and methods for detecting tuberculosis. Categories of people at high risk for TB. Participation of healthcare workers in the detection of tuberculosis.

Methods of X-ray examination of patients with tuberculosis of the respiratory organs and interthoracic lymphatic nodes (X-ray, tomo- and fluorography, computer tomography, x-raycopy). Radiological syndromes: lung root damage, dissemination, infiltration, spherical shadow, cavity, pulmonary changes (fibrosis). Clinical forms of pulmonary tuberculosis in the X-ray image.

The purpose of tuberculin diagnostics. The notion of tuberculin. Mantoux test with 2 TU PPD-L: indications, techniques, evaluation of results. The concept of a "conversion" of a tuberculin test. Differential diagnostics of postvaccinal and infectious immunity. Gamma interferon release test.

Theme 3. Peculiarities of the clinical examination of a patient with tuberculosis. Functional and instrumental methods in diagnostics tuberculosis.

Features of clinical examination of a patient with tuberculosis: complaints, history of the disease, course, epidemiological history, past diseases, conditions labor and life; physical examination methods: (palpation, percussion, auscultation); diagnostic significance of changes in the hemogram.

Functional methods of examination. Study of external respiration function (spirometry). Main indicators of external respiration function. Types of lung ventilation disorders. Electrocardiographic examination. ECG signs of chronic pulmonary heart. Echocardiography. Instrumental methods in the diagnosis of tuberculosis.

Theme 4. General principles of treatment for patients with tuberculosis. Antimycobacterial drugs. Standard treatment regimens patients with tuberculosis.

General principles of antimycobacterial therapy: complexity, combination, controllability, two-phase treatment, duration and continuity, individual approach, stage sequence, free of charge. Anti-TB drugs: classification, dosages, methods and multiplicity of administration in the patient's body. Side effects to antimycobacterial drugs, their prevention and methods of elimination. Categories of treatment of patients with tuberculosis. Standard treatment regimens for a patient with active tuberculosis. Drug-resistant tuberculosis: types of drug resistance, diagnosing of drug-resistant tuberculosis. Modern classification of antimycobacterial drugs used to treat drug-resistant tuberculosis. Criteria for the cure of a patient with tuberculosis.

Theme 5. Nonspecific therapy for patients with tuberculosis. Surgical treatment. Facilities in sanatoria and health resorts.

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 supporting phase (general strengthening therapy). Symptomatic treatment, physiotherapy.

Basic surgical methods of treatment for tuberculosis of the respiratory organs (operations on the lungs, operations on the pleura). Indications, contraindications. Facilities in sanatoria and health resorts treatment for patients with tuberculosis.

Content Section 2. Primary and secondary forms of tuberculosis. Prevention of tuberculosis.

Specific objectives:

- diagnose primary and secondary forms of tuberculosis on the basis of anamnestic, clinical and radiological, laboratory data;
- formulate a clinical diagnosis of tuberculosis according to the classification;
- prescribe complex therapy for patients with primary and secondary forms of TB;
- diagnose complications of tuberculosis;
- provide emergency care in emergencies in patients with tuberculosis;
- analyze the features of the course and treatment of patients with pulmonary tuberculosis combined with HIV infection and other diseases;
- determine indications and contraindications for BCG vaccination/revaccination;
- describe complications of BCG vaccination (revaccination);
- determine the criteria for the epidemiological danger of tuberculous center of infections;
- apply a set of preventive measures in the foci of tuberculous infections;
- determine indications for chemoprophylaxis (treatment of latent tuberculous infection).

Theme 6. Tuberculosis of unknown location. Tuberculosis of the intrathoracic lymphatic nodes. Primary tuberculous complex. Complications of primary tuberculosis. Disseminated tuberculosis. Miliary tuberculosis. Tuberculosis of nervous system. Tuberculous meningitis.

Morphological basis of tuberculosis of unknown location. Clinical manifestations, course. Treatment.

Classification of intrathoracic lymphatic nodes. Clinical and X-ray forms of tuberculous bronchoadenitis: infiltrative, tumorous, "small". Pathogenesis, pathomorphology, clinic, course. Treatment. Consequences.

Pathogenesis and pathomorphology of the primary tuberculous complex. Clinical manifestations, course, diagnosing. Differential diagnostics with nonspecific pneumonia. Treatment. Consequences.

Residual changes of the primary TB forms and their significance for the emergence of secondary forms of tuberculosis.

The complication of tuberculosis of intrathoracic lymphatic nodes and the primary tuberculous complex (atelectasis, specific lesion of the bronchi, hematogenous or lymphomatogenic dissemination, pleurisy, formation of the primary cavity), diagnosing, treatment.

Pathogenesis and pathomorphology of disseminated pulmonary tuberculosis. Clinical variants of the course (acute, subacute, chronic) and their radiological signs. Clinic, diagnostics. Treatment. Consequences.

Pathogenesis and pathomorphology of miliary tuberculosis. Clinical options. Diagnosis. Treatment. Consequences.

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

Theme 7. Focal and infiltrative pulmonary tuberculosis. Caseous pneumonia. Tuberculoma of the lungs. Fibro-cavernous and cirrhotic pulmonary tuberculosis. Tuberculous pleurisy (including empyema). Pathogenesis, pathomorphology, clinic, diagnosing, differential diagnosis, treatment, consequences. Complications of secondary forms of tuberculosis: hemoptysis, pulmonary haemorrhage, spontaneous pneumothorax, chronic pulmonary heart, amyloidosis of the internal organs.

Pathogenesis and pathomorphology, clinic of focal and infiltrative forms of tuberculosis. Causes of the progression of focal tuberculosis and infiltrative TB. Clinical and X-ray variants of infiltrates.

Causes of development of caseous pneumonia, features of the course. Treatment. Consequences.

Classification of pulmonary tuberculoma. Features of the course of pulmonary tuberculoma. Treatment. Consequences.

Causes of development of fibro-cavernous tuberculosis of the lungs. Main clinical syndromes, X-ray signs of fibro-cavernous and cirrhotic pulmonary tuberculosis. Treatment. Consequences.

Tuberculous pleurisy. Pathogenesis, pathomorphology, clinic, diagnosing, differential diagnosis, treatment, consequences. Indication for pleural puncture, method of its implementation. Consequences.

Pathogenesis, clinic, diagnosing and principles of treatment of hemoptysis, pulmonary haemorrhage, spontaneous pneumothorax, chronic pulmonary heart and amyloidosis. Emergency delivery for pulmonary haemorrhage, spontaneous pneumothorax.

Theme 8. Tuberculosis of the peripheral lymphatic nodes. Bones and joints tuberculosis. Clinic, diagnosing, treatment.

Pathogenesis and pathomorphology, local and general manifestations, clinical forms of tuberculosis of peripheral lymphatic nodes. Diagnosis. Treatment.

Clinic for tuberculosis of bones and joints. Diagnosis. Treatment.

Theme 9. Pulmonary tuberculosis combined with dust professional pulmonary disease.

Pneumoconiosis. Classification, pathomorphology, forms, course. Silicosis. Silicotuberculosis Clinic, X-ray characteristic, treatment.

Theme 10. Tuberculosis and pregnancy. Tuberculosis in patients with diabetes mellitus, gastric and duodenal ulcer.

Development of tuberculosis in pregnant women. Clinic, diagnosis of tuberculosis during pregnancy. Features of treatment. Course, diagnosis, treatment of tuberculosis in patients with diabetes mellitus and gastric ulcer.

Theme 11. Tuberculosis in HIV/AIDS patients.

Detection of tuberculosis in HIV-infected and AIDS patients. Features of the course of tuberculosis in HIV-infected and AIDS patients. Treatment, prevention of tuberculosis in HIV-infected and AIDS patients.

Theme 12. Prevention of tuberculosis.

Social prevention.

Infection control. Components of infection control: administrative control, control over the air condition of enclosed premises, individual protection of respiratory organs. Sanitary prophylaxis, its task. Concept about the center of tuberculous infection. Categories of cells according to the degree of epidemiological danger. Work in the cell of tuberculosis infection in the prevention of tuberculosis. Sanitary and educational work.

BCG and BCG-M vaccination, BCG revaccination. BCG and BCG-M vaccine. The technique of vaccination and revaccination. Indications and contraindications for vaccination and revaccination. Evaluation of the body's local response to vaccine administration. Complications of TB vaccinations.

Chemoprophylaxis of tuberculosis (treatment of latent tuberculosis infection): indications, recommended modes.

3. Structure of the academic discipline

| Topics | Lectures | Practical Lessons | S-Ws |
|---|----------|-------------------|-----------|
| Content module 1. General issues of phthiology The method of examination of a patient with tuberculosis. Treatment of tuberculosis. | | | |
| Theme 1. Definition of tuberculosis as a scientific and practical problem. History of phthiology. Epidemiology of tuberculosis. Etiology, pathogenesis, tuberculosis. Tuberculosis immunity. Clinical classification of tuberculosis. Microbiological diagnosing of tuberculosis. | 2 | 5 | - |
| Theme 2. Management of revealing of tuberculosis. Methods of detecting and diagnosing tuberculosis (x-ray, tuberculin skin test, gamma interferon test). | 2 | 2 | - |
| Theme 3. Peculiarities of the clinical examination of a patient with tuberculosis. Functional and instrumental methods in diagnostics tuberculosis. | - | - | 5 |
| Theme 4. General principles of treatment for patients with tuberculosis. Antimycobacterial drugs. Standard treatment regimens patients with tuberculosis. | 2 | 3 | - |
| Theme 5. Nonspecific therapy for patients with tuberculosis. Surgical treatment. Facilities in sanatoria and health resorts. | - | - | 5 |
| Together with content module 1 | 6 | 10 | 10 |
| Content module 2. Primary and secondary forms of tuberculosis. Prevention of tuberculosis. | | | |
| Theme 6. Tuberculosis of unknown location. Tuberculosis of the intrathoracic lymphatic nodes. Primary tuberculous complex. Complications of primary tuberculosis. Disseminated tuberculosis. Miliary tuberculosis. Tuberculosis of nervous system. Tuberculous meningitis. | 1 | 5 | - |
| Theme 7. Focal and infiltrative pulmonary tuberculosis. Caseous pneumonia. Tuberculoma of the lungs. Fibro-cavernous and cirrhotic pulmonary tuberculosis. Tuberculous pleurisy (including empyema). Pathogenesis, | 1 | 5 | - |

| | | | |
|---|----------|-----------|-----------|
| pathomorphology, clinic, diagnosing, differential diagnosis, treatment, consequences. Complications of secondary forms of tuberculosis: hemoptysis, pulmonary haemorrhage, spontaneous pneumothorax, chronic pulmonary heart, amyloidosis of the internal organs. | | | |
| Theme 8. Tuberculosis of the peripheral lymphatic nodes. Bones and joints tuberculosis. Clinic, diagnosing, treatment. | - | - | 5 |
| Theme 9. Pulmonary tuberculosis combined with dust professional pulmonary disease. | - | - | 5 |
| Theme 10. Tuberculosis and pregnancy. Tuberculosis in patients with diabetes mellitus, gastric and duodenal ulcer. | - | - | 5 |
| Theme 11. Tuberculosis in HIV/AIDS patients. | - | - | 5 |
| Theme 12. Prevention of tuberculosis. | - | 2 | - |
| Together with content module 2 | 2 | 12 | 20 |
| Total-60/2 ,loans ECTS | 8 | 21 | 30 |

4. CURRICULUM of the Lectures

| N ^o | Topics | Hours |
|----------------|---|----------|
| 1. | Tuberculosis as scientific and practical problem. The history of development of Phthisiology. Epidemiology of tuberculosis. Etiology and pathogenesis of tuberculosis. Tuberculosis immunity. | 2 |
| 2. | Management of revealing and diagnosing of tuberculosis. | 2 |
| 3. | Treatment of tuberculosis: basic principles and methods. | 2 |
| 4. | Primary and secondary forms of tuberculosis. | 2 |
| | Total | 8 |

5. CURRICULUM of the Practical Lessons

| N ^o | Topics | Hours |
|----------------|--|-----------------|
| 1 | 2 | 3 |
| 1. | Epidemiology of tuberculosis. Etiology and pathogenesis of tuberculosis. Clinical classification of tuberculosis. Microbiological diagnosing of tuberculosis. | 5 hours |
| 2. | Management of revealing of tuberculosis. Methods of detecting and diagnosing tuberculosis (x-ray, tuberculin skin test, gamma interferon test). Treatment of tuberculosis: basic principles. Anti-TB drugs. Standards drug regimens. | 5 hours |
| 3. | Primary tuberculosis. Tuberculosis of unknown location. Tuberculosis of the intrathoracic lymphatic nodes. Primary tuberculous complex. Pathogenesis, pathomorphology, clinic, diagnosis, differential diagnosis, treatment, consequences. Complications of primary tuberculosis. Disseminated tuberculosis. Miliary tuberculosis. Tuberculosis of nervous system. Tuberculous meningitis. Pathogenesis, pathomorphology, clinic, diagnosis, differential diagnosis, treatment, consequences. | 5 hours |
| 4. | Focal and infiltrative TB. Caseous pneumonia. Tuberculoma. Fibro-cavernous TB. Cirrhotic tuberculosis. Pathogenesis, pathomorphology, clinic, diagnosis, differential diagnosis, treatment, consequences. Pleural tuberculosis. TB pleuritis and empyema. Pathogenesis, pathomorphology, clinic, diagnosis, differential diagnosis, treatment, consequences. Complications of secondary tuberculosis: hemoptysis, hemorrhage, spontaneous pneumothorax, chronic cor pulmonare, amyloidosis of internal organs. | 5 hours |
| 5. | Prevention of tuberculosis. | 2 hours |
| | Total: | 22 hours |

6. CURRICULUM of the Out of Class Working

| № | Topics | Hours | Type of control |
|----|---|-----------------|---------------------------------|
| 1. | Peculiarities of the clinical examination of a patient with tuberculosis. Functional and instrumental methods in diagnostics tuberculosis | 5 hours | Monitoring on practical classes |
| 2. | Nonspecific therapy of tuberculosis. Surgical treatment. Facilities in sanatoria and health resorts. | 5 hours | |
| 3. | Tuberculosis of the peripheral lymphatic nodes. Bone and joints tuberculosis. Symptoms and signs. Diagnosis. Treatment. | 5 hours | |
| 4. | Pulmonary tuberculosis combined with dust professional pulmonary disease. | 5 hours | |
| 5. | Tuberculosis and pregnancy. Tuberculosis in patients with diabetes mellitus, gastric and duodenal ulcer. | 5 hours | |
| 6. | Tuberculosis in HIV/AIDS patients. | 5 hours | |
| | Total: | 30 hours | |

7. Methods of training

Verbal - explanation, briefing, educational discussion.

Visual - Illustration (tables, X-rays, results of analyzes and other survey methods);
- demonstration (diagnostic and therapeutic manipulations).

Practical - the formation of skills and abilities of clinical examination of patients, the implementation of the prescribed medical manipulation program, emergency assistance.

Interactive - which involves working in small groups to perform a specific set of tasks; simulation of clinical situations.

Organizational structure of training:

Preparatory stage (10-20% of working time): organization of the lesson, setting a training goal, control of the initial level of knowledge.

The main stage (60-90% of working time): the formation of professional skills. Students independently and under the supervision of the teacher carry out the curation of patients: collect history, master the skills of objective examination, interpret radiological and laboratory data, justify the clinical diagnosis, conduct differential diagnosis, prescribe treatment.

The final stage (10-20% of working time): control and correction of the level of professional skills, summing up, homework.

8. Methods of control

The control is carried out by a comprehensive assessment of the theoretical and practical training of the student on the basis of oral questioning, test control, the solution of clinical situational tasks, demonstration of practical skills and abilities.

- Types of control - current and final.
- The form of final control in accordance with the curriculum is an exam

- Criteria for evaluation

| Assessment of the student's oral response | | | |
|---|--|---|---|
| «Perfect» | «Good» | «Satisfactorily» | «Unsatisfactorily» |
| The student profoundly and firmly mastered the material; consistently, competently and logically teaches him, closely relates theory with practice, freely copes with issues. | A student knows the material competently and substantially compliant and does not allow material mistakes in answering questions. | The student has knowledge of the main material, but did not learn its details, makes mistakes, violates the sequence in the presentation of the material. | The student does not know part of the software, allows for significant errors, is not sure of the answer. |
| <u>Assessment of the solution of test tasks</u> | | | |
| «Perfect» | «Good» | «Satisfactorily» | «Unsatisfactorily» |
| 100-91% | 90-76% | 75-51% | 50 и менее% |
| <u>Assessment of the solution of a clinical situational problem</u> | | | |
| «Perfect» | «Good» | «Satisfactorily» | «Unsatisfactorily» |
| Precisely formulated and fully substantiated clinical diagnosis in the patient and put on a treatment plan. | A precisely formulated and partly substantiated clinical diagnosis of the patient, inaccuracies in the preparation of the treatment plan have been made. | There were difficulties in substantiating the clinical diagnosis, drawing up a patient's treatment plan. | No answer to the task is given. |
| <u>Assessment of the demonstration of practical skills</u> | | | |
| «Perfect» | «Good» | «Satisfactorily» | «Unsatisfactorily» |
| The student has mastered the practical skills provided by the program. | The student performs practical skills, but does not assume fundamental errors. | The student made serious mistakes in the implementation of practical skills. | The student did not develop practical skills; did not develop the skills provided by the program. |

9. Current control is carried out during the training sessions and is aimed at verifying students' learning of the material.

Estimation of the current educational activity. During the assessment of the assimilation of each topic for the current educational activity, the student is given grades for 4-point (national). This takes into account all types of work provided for by the discipline program. The student must receive a grade on each topic for further conversion of grades to scores on a multi-point (200-point) scale.

10. Form of final control of the success of training - differentiated exam.

Differentiated exam is a form of final control, consisting in assessing the student's assimilation of educational material in the academic discipline on based on monitoring and performed individual test tasks in the last lesson.

11. The scheme of accrual and distribution of points that students receive:

For disciplines, the form of final control of which is a differentiated exam:

The maximum number of points a student can score for the current semester entrance exam for the entrance exam is 120 points.

The minimum number of points that a student must score for the current study activity per semester for admission to the exam is 72 points.

The calculation of the number of points is based on the student's grades on a 4-point (national) scale during the study of the discipline, by calculating the arithmetic mean (CA) rounded to two decimal places.

The resulting value is converted into points on a multi-point scale as follows:

$$x = \frac{CA \times 200}{5}$$

Conversion of the average score for current activities into a multi-point scale for disciplines ending with a differentiated exam.

For convenience, a recalculation table is given on a 200-point scale:

| | | | | | | | |
|---------------|-----------------|---------------|-----------------|---------------|-----------------|---------------|------------------|
| 4- ball scale | 200- ball scale | 4- ball scale | 200- ball scale | 4- ball scale | 200- ball scale | 4- ball scale | 200- ball scale |
| 5 | 120 | 4.45 | 107 | 3.91 | 94 | 3.37 | 81 |
| 4.95 | 119 | 4.41 | 106 | 3.87 | 93 | 3.33 | 80 |
| 4.91 | 118 | 4.37 | 105 | 3.83 | 92 | 3.29 | 79 |
| 4.87 | 117 | 4.33 | 104 | 3.79 | 91 | 3.25 | 78 |
| 4.83 | 116 | 4.29 | 103 | 3.74 | 90 | 3.2 | 77 |
| 4.79 | 115 | 4.25 | 102 | 3.7 | 89 | 3.16 | 76 |
| 4.75 | 114 | 4.2 | 101 | 3.66 | 88 | 3.12 | 75 |
| 4.7 | 113 | 4.16 | 100 | 3.62 | 87 | 3.08 | 74 |
| 4.66 | 112 | 4.12 | 99 | 3.58 | 86 | 3.04 | 73 |
| 4.62 | 111 | 4.08 | 98 | 3.54 | 85 | 3 | 72 |
| 4.58 | 110 | 4.04 | 97 | 3.49 | 84 | Less 3 | It's a bad thing |
| 4.54 | 109 | 3.99 | 96 | 3.45 | 83 | | |
| 4.5 | 108 | 3.95 | 95 | 3.41 | 82 | | |

Independent work of students is evaluated during the current control of the topic in the corresponding lesson. The assimilation of topics that are submitted only to independent work is controlled during the final control.

An assessment from the discipline that completes the exam is defined as the sum of points for the current educational activity (not less than 72) and the marks for the exam (not less than 50).

The scores of disciplines are independently converted into both the ECTS and 4-point scale. The ECTS scores on the 4-point scale are not converted and vice versa.

Points of students studying in one specialty, taking into account the number of points scored from the discipline, are ranked on the ECTS scale as follows:

| Assessment of ECTS | The 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 last 10% of students |

Ranking with the assignment of grades "A", "B", "C", "D", "E" is carried out for students of this course who study in one specialty and have successfully completed the

study of the discipline. Students who received FX, F ("2") grades did not are included in the list of ranked students. Students with an FX score after retaking automatically receive an "E" score.

Score points for students who have successfully completed the program are converted to the traditional 4-point scale by the absolute criteria listed in the table below:

| Score points | Score on the 4- score scale |
|---|-----------------------------|
| From 170 to 200 points | 5 |
| From 140 to 169 points | 4 |
| From 139 points to the minimum number of points a student should get | 3 |
| Below is the minimum number of points that the student should collect | 2 |

The ECTS mark on a traditional scale is not converted because the ECTS scale and the four-point scale are independent.

Objectivity of assessment of students' educational activity is checked by statistical methods (correlation coefficient between ECTS assessment and national scale assessment).

12. Methodical support: methodological development of lectures and practical exercises, tasks for independent work, questions, test tasks, clinical tasks for the current and final control of students' knowledge and skills.

13. Recommended Books

Basic literature:

1. Phthysiology. nats textbook / edited by V. I. Petrenko,. - Kyiv .: VVV "Medicine", 2015. - 472 p.
2. Pulmonology and phthisiology: a textbook in 2 volumes / Ed. Yu.I.Feshchenko, V.P. Melnyk, I.G.Ilnitsky. - Kyiv, Lviv: Atlas, 2009 - 1336 p.
3. Phthysiology. Educational manual / edited by V.P. Melnik, I.G.Ilnitsky. - Kyiv - Lviv: Atlas, 2008. – 304 p.
4. Phthysiology. Textbook / Ed. acad. AND I. Tsyganenko, prof. SI. Zaitseva - X .: Fakty, 2004. 390s.
5. Savula M.M., Ladny O.Ya. Tuberculosis. Textbook. Ternopil: "UkrmedkNiga", 1999. - 323 p.
6. Order of the Ministry of Health of Ukraine 19.01.2023 № 102 "Standards of medical care"Tuberculosis".

Additional literature:

1. Mykolyshyn L.I., Piskur Z.I. Organization of detection and diagnosis of extrapulmonary tuberculosis in children. Tutorial. - Lviv: LNMU, 2016. – 108 p.
2. Tuberculosis prevention: a textbook for students, interns and doctors/B.I. Petrenko, M.G. Dolinskaya, A.V. Alexandrin, V.V. Petrenko. – Kiiiv:2Print, 2017. – 88 p.

3. Phthysiology: a teaching manual. Collection of tasks for test control of knowledge / Ed. V.F. Moskalenko, V.I. Petrenko - Vinnitsa: The New Book, 2005. 296 p.
4. Tuberculosis of extrapulmonary localization / Yu.I. Feshchenko, I.G. Ilnitsky, V.M. Melnik, O.V. Panasyuk; for ed. Yu.I. Feshchenko, I.G. Ilnitsky - Kyiv: Logos, 1998. - 376 p.
5. Diseases of the respiratory system. Reference book / Yu.I.Feshchenko, V.M.Melnyk, I.G.Ilnitsky. - Kyiv - Lviv: Atlas, 2008. - 497s.
6. Savula M.M., Ladny O.Ya., Kravchenko N.S., Slyvka Yu.I. Differential diagnostics of diseases of the lungs and pleura. Ternopil: "UkrmedkNiga", 2000 – 223 p.
7. Feshchenko Yu.I. Organization of control of chemo-resistant tuberculosis. Production edition. - Kyiv: Health, 2013. - 704 p.
8. Tuberculosis, HIV / AIDS: teaching. manual / R.G. Protsyuk, V.F.Moskalenko, V.I. Petrenko and others. Kyiv: Medicine, 2009. - 424 p.
9. Applied questions of phthysiology of children and adolescence: Textbook / Ed. Ilnitsky I.G., Kostyk A.P., Bilozir L.I., - Lviv: Atlas, 2013. - 731 p.

Information resources:

1. State institution "Ukrainian Center for the control of social diseases of the Ministry of Health of Ukraine": <http://ucdc.gov.ua>
2. The site of the National Institute of Phthysiology and Pulmonology named after FG Yanovsky: <http://www.ifp.kiev.ua/doc>
3. Tuberculosis, pulmonary diseases, HIV infection. Ukrainian Scientific and Practical Journal www.tubvil.com.ua
4. USAID "Strengthening TB Control in Ukraine" Website: <http://www.stbcu.com.ua>