Lviv National Medical University
Named by Danylo Halytsky

Department of Phthisiology and Pulmonology

"Approved" _____

The first vise-rector of scientific-pedagogical work

prof. M.R.Gzhegockiy

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«____»_____2018.

EXECUTABLE CODE OF EDUCATIONAL DISCIPLINE

PHTHISIOLOGY

Emergency states in phthisiology

Specialty - 7.12010001 medical practice

Faculty, medical course, VI

Discussed and accepted

on meeting of Department

of phthisiology and

pulmonology

Protocol №1 from

28.08.2018

Chief of Department

Prof. Kostik O.P. _____

Ratified a methodical commission of therapeutic disciplines

Protocol № «__»_____ in 2018

Head of methodical commission

Prof. Radchenko O.M. _____

2018

EXPLANATORY NOTE

The working program for phthysiology was developed on the basis of the supplement to the cross-cutting curriculum "Internal medicine with infections diseases and phthisiology" for students of higher medical educational institutions (VNMZ) of Ukraine of III-IV accreditation levels for the specialty "Medical case" 7.12010001, the direction of preparation 1201 "Medicine "Which is made in accordance with the current normative documents:

• Educational qualification characteristic (OS) and educational and professional program (OPP) of training of specialists approved by the order of the Ministry of Education and Science of Ukraine No. 219 of April 16, 2003 "On approval of the constituent branch standards of higher education in the field of training 1101 - Medicine";

• by the order of the Ministry of Health of Ukraine dated 19.10.2009 №749 "On approval and introduction of a curriculum for the training of specialists in educational qualification level" specialist "qualification" doctor "in higher educational institutions of the IV level of accreditation in the specialties" medical "," pediatrics "," medical -prophylactic business ";

by the order of the Ministry of Health of Ukraine No. 539 dated 07/08/2010 "On Amendments to the Curriculum for the Training of Specialists in the Educational-Qualification Level" Specialist "of the qualification" Doctor "in higher educational institutions of the IV level of accreditation in the specialties" medical "," pediatrics "," -profilective case ", approved by the order of the Ministry of Health of 19.10.2009 №749";

• recommendations for the development of educational curricula for educational disciplines, approved by the Order of the Ministry of Health of Ukraine dated March 24, 2004, No. 152 "On approval of recommendations for the development of educational curricula of educational disciplines", as amended by the Order of the MOH of Ukraine dated October 12, 2004, No. 492 "On Amendments and additions to the recommendations for the development of educational curricula of the disciplines ";

• by the Order of the Ministry of Health of Ukraine dated January 31, 2003 No. 148 "On Measures to Implement the Provisions of the Bologna Declaration in the System of Higher Medical and Pharmaceutical Education".

• a temporary instruction on the assessment of students' educational activity in implementing a credit-module system of educational process organization (Letter of the Ministry of Health of Ukraine dated January 21, 2008 No. 08.01-22 / 65).

Discipline "Internal Medicine with Infectious Diseases and Phthisiology":

• Based on knowledge and skills acquired by students in the study of phthisiology, propaedeutics of internal diseases, internal medicine disciplines in IV and V courses and other clinical disciplines, as well as other basic disciplines (medical biology, medical and biological physics, bioorganic and biological chemistry , histology, cytology, embryology, human anatomy, pathomorphology, physiology, pathophysiology, microbiology, virology and immunology, radiology, radiology, etc.) and integrates with these disciplines;

• completes mastering of skills and practical skills from specialized clinical professional-practical disciplines in higher education institutions for their application in the process of further non-university professional practice.
Types of educational activity of students according to the curriculum are:
a) practical classes,
b) independent work of students (CPs).
The curriculum on disciplines "Internal Medicine with Infectious Diseases and Phthisiology" is not foreseen at the VI course.

The duration of the practical training is 6 hours.
Description of the curriculum in discipline - Phthysiology
for students of medical faculties
on the specialty 7.12010001 "Medical business",
Qualification - Doctor

Structure	Amount of credits, hours, from them				A year of studies	Type of control
	At all	**Auditory**		**CPC**		
		Lecture	Practical classes			I
Module: Phthisiology Semantic	**1 credits** **ECTS/ 30**	**-**	**18**	**12**	**6 year course** **(XI або XII**	Credit

Auditory load - 60%, CPC - 40%

The purpose and tasks of the discipline

The purpose of the discipline - the study of the discipline "Internal medicine with infectious diseases and phthisiology" is established on the basis of OCh and OPP preparation of a doctor in the specialty and is the basis for constructing the content of the discipline.
Educational qualification characteristic of a specialist on the specialty 7.12010001 "Therapeutic Case" defines the following typical tasks of activity and skills, which should be held by a graduate of a higher educational institution, the assimilation of which must be provided by the departments of internal medicine.
Student should be able to:
1. Collect patient information.
Under the conditions of the in-patient department, the outpatient unit or the patient's home, using the results of the interview with the patient, according to the standard questionnaire of the patient, collect data about his complaints, medical history, medical history (including a professional history) and complaints from other organs and systems.
Under any circumstances (at a medical institution, at a patient's home, etc.), using knowledge about a person, his organs and systems, according to certain algorithms:

- to collect information about the general condition of the patient (consciousness, constitution, position in bed, fattening) and appearance (review of skin and mucous membranes, subcutaneous fat layer, palpation of lymph nodes, thyroid and mammary glands);
-examine the state of the cardiovascular system (examination and palpation of the area of the heart and available vessels, definition of the limits of the heart through percussion, auscultation of the heart and blood vessels);
-examine the state of the respiratory organs (examination of the chest and upper respiratory tract, palpation of the chest, percussion and auscultation of the lungs);
- examine the condition of the abdominal organs (abdominal examination, palpation and percussion of the intestine, stomach area, determination of the borders of the liver, its surface and lower edge, palpation and percussion of the spleen, palpation of the pancreas, palpation of the kidneys, bladder);
-examine the condition of the musculoskeletal system and joints (examination and palpation);

2. Establish a preliminary clinical diagnosis of the disease.

- By standard methods, using the patient's medical history, patient's examination data, knowledge of the person, its organs and systems, observing the relevant ethical and legal standards, by making a reasonable decision to be able to identify and fix the leading clinical symptom or syndrome.
- Using the patient's history and patient's data, based on the leading clinical symptom or syndrome, using the knowledge about the person, his organs and systems, put the most probable or syndromic diagnosis of the disease and compile the list of diseases with which differential diagnosis is necessary.
- To appoint a laboratory and instrumental examination of the patient.
-Using the data of anamnesis, clinical examination, data of laboratory and instrumental examination of a patient according to a certain algorithm, to carry out differential diagnostics of diseases.

3. Diagnose urgent conditions.

Under any circumstances (at home, on the street, at a medical institution), incl. in conditions of an emergency, in the absence of information and limited time, using the standard methods of clinical examination, knowledge of the person, its organs and systems, adhering to the relevant ethical and legal norms, to diagnose.

4. To evaluate the results of laboratory and instrumental research.

In the conditions of the medical institution, using knowledge about the person, its organs and systems, to evaluate the results of laboratory and instrumental research.

5. Determine the patient's treatment strategy.

In a hospital, at a patient's home based on a previous clinical diagnosis, using the knowledge about the person, its organs and systems, observing the relevant ethical and legal standards, determine the strategy of treatment of the disease (conservative, operative) by adopting a reasonable decision based on existing algorithms and standard schemes.

6. To determine the tactics of medical treatment of the patient.

In the hospital, at the patient's home, based on the previous clinical diagnosis, using the knowledge of evidence-based medicine, by making a reasonable decision, based on existing algorithms, protocols, and standards, appoint medical treatment for the patient, in particular, in order to improve the prognosis and eliminate the symptoms.

7. Define motor mode and performance.

In the medical institution, at the patient's home, based on the previous clinical diagnosis, determine the required motor status and the patient's working capacity.

8. Identify recommendations for the diet and nutrition of the patient.

In a hospital, at a patient's home based on a previous clinical diagnosis, determine the diet and nutrition recommendations.

9. To determine the tactics of maintaining contingent persons who are subject to dispensary supervision.

In medical institutions or at home, the patient, based on the received data on the patient's health and evidence-based medicine, must make a reasoned decision to determine the nature and frequency of the examination, non-pharmacological and medical primary and secondary prevention.

10. Determine the tactics of providing emergency medical care.

Under all circumstances, based on the diagnosis of urgent conditions in a limited time, using standard circuits to determine the tactics of emergency medical care.

11. Provide emergency medical care.

Under all circumstances, on the basis of a diagnosis of urgent condition, in conditions of limited time, according to the defined tactics, using standard algorithms and protocols, to provide emergency medical care.

12. Perform medical manipulations.

In the conditions of the medical institution and outside it, on the basis of the preliminary clinical diagnosis and indicators of the patient's condition, using standard techniques, perform medical manipulations.

13. Maintaining medical records.

In the conditions of a medical institution, using standard technology, on the basis of normative documents, keep medical records about the patient and the contingent of the population (a medical card of the inpatient patient, a sanatorium-resort card, a disability certificate, documentation for the MSEC, etc.).

The curriculum program

Content module 1.
TREATMENT OF PATIENTS WITH TUBERCULOSIS
Specific goals

Students should be able to:

- Determine the risk factors for tuberculosis.
- Conduct patient interviews to identify symptoms that may indicate tuberculosis.

• Apply an algorithm for testing patients with symptoms that can testify about tuberculosis, at the primary care stage, and develop a clinical route for the patient.
• Determine the options for tactical actions by the physician, depending on the data of bacterioscopic examination of sputum, X-ray examination and other diagnostic methods.
• To interpret data of microscopic, molecular-genetic, bacteriological methods of detecting a TB agent.
• Evaluate the results of basic laboratory, radiation, instrumental diagnostic methods and tuberculin diagnostics.
• Conduct differential diagnosis with cough.
To conduct differential diagnostics for intoxication, bronchopulmonary and radiological syndromes in patients with symptoms that can testify to tuberculosis.
• Formulate the diagnosis of tuberculosis according to the current classification.
• Organize tuberculosis treatment under direct supervision.
• To form and maintain the patient's commitment to TB treatment.
• To prescribe standardized medical treatment for patients with tuberculosis, depending on the category and determine the results of treatment.
• Assign treatment to patients with chemo-resistant tuberculosis.
• Appoint treatment for TB with HIV.
• To carry out chemoprophylaxis of tuberculosis.
• Conduct counseling and testing for HIV (counseling and testing on the initiative of a health worker and voluntary counseling and testing).
• Organize measures for the administrative control of infectious tuberculosis infection.
• Correct use and selection of individual respiratory protective equipment.

Theme 1: Driving TB patients. Detection, diagnosis of tuberculosis. Treatment regimens of patients for the first time diagnosed with tuberculosis and re-treatment. Infectious tuberculosis control.

International Standards for TB Control, 3rd edition. Modern approaches to the detection and diagnosis of tuberculosis. Implement a practical approach to lung health. Standardization of clinical care. Coordination within the health sector. Identification of symptoms that may indicate tuberculosis. Route of a patient with cough at the stage of primary care. Place of laboratory methods in detecting tuberculosis.
Bacteriological methods of diagnosis of tuberculosis. The role of express methods of molecular genetic diagnostics of tuberculosis, in particular, of the technology of Xpert MTB / RIF.
Application of X-ray examination in the diagnosis of tuberculosis. The role of computer and magnetic resonance imaging in the diagnosis and differential diagnosis of pulmonary and extrapulmonary tuberculosis.
The role of instrumental and invasive methods in confirming the diagnosis.

Treatment regimens of patients in cases of first-time diagnosis of tuberculosis and cases of re-treatment. Treatment under direct supervision and forming adherence to treatment.
Infectious control of tuberculosis infection.

Theme 2. Management of patients with chemo-resistant tuberculosis. Timely establishment of chemo-resistance. Diagrams of treatment of mono-resistant, polyresistant, multi-resistant tuberculosis, and tuberculosis with increased resistance. Peculiarities of management of infectious patients with tuberculosis. Application of palliative methods of treatment.

Determination of the risk of multi-resistant tuberculosis. Timely establishment of chemo-resistance. Preparation of diagnostic algorithm with rational application of methods of molecular genetic diagnostics and bacteriological research.
Standard and individualized regimens for the treatment of mono-resistant, multidrug-resistant, multidrug-resistant tuberculosis (MRTB) and advanced-resistance tuberculosis (RRTB). Diagnosis and management of adverse reactions to treatment.
Surgical treatment of MRTB and RRTB. Features of the management of incurable patients with tuberculosis. Application of palliative methods of treatment.

Topic 3. Emergency conditions in phthisiology. Complications of pulmonary tuberculosis: pulmonary haemorrhage, hemoptysis, spontaneous pneumothorax. Methods of diagnostics. Emergency assistance.

Determination of the risk of complications of the tuberculosis process.
Complications of primary tuberculosis: causes, pathogenesis, clinic, diagnostics, urgent therapy. Specific defeat of the bronchi, hematogenous or lymphatic-hematogenous dissemination, pleurisy, formation of the primary cavity: tactics of patient management. Hepatopathy and pulmonary haemorrhage in patients with tuberculosis: pathogenesis, classification, differentiation of bleeding (from the cavity of the nose and mouth, stomach or esophagus, bronchi or lungs), diagnostics of the source of bleeding. Coagulation methods of hemostasis. Types of spontaneous pneumothorax. Pathomorphology and clinical picture of atelectasis. The role of X-ray methods in confirming the diagnosis. Algorithms for providing urgent help with complications. Mechanism of development of amyloidosis of internal organs, bronchial and thoracic fistulas.

Structure of the discipline

TOPIC	Lectures	Practical training	CPC
Semantic module 1. DIRECTION OF PATIENTS WITH TUBERCULOSIS			
Topic 1. Keeping patients with tuberculosis. Detection, diagnosis of tuberculosis. Treatment regimens of patients for the first time diagnosed with tuberculosis and re-treatment. Infectious tuberculosis control. Differential diagnostics of root and paramediastinal processes, pulmonary dissemination, pulmonary infiltrates.	-	6	4
Theme 2. Management of patients with chemo-resistant tuberculosis. Timely establishment of chemo-resistance. Diagrams of treatment of mono-resistant, polyresistant, multi-resistant tuberculosis, and tuberculosis with increased resistance. Peculiarities of management of infectious patients with tuberculosis. Application of palliative methods of treatment. Differential diagnostics of spherical formations in the lungs, cavities in the lungs, pleurisies.	-	6	4
Topic 3. Emergency conditions in phthisiology. Complications of pulmonary tuberculosis: pulmonary haemorrhage, hemoptysis, spontaneous pneumothorax. Methods of diagnostics. Emergency assistance. Non-pulmonary tuberculosis: tuberculosis of the lymph nodes, bones, brains and other localizations. Diagnosis and treatment.	-	6	4
Total content module			
Total hours - 30/1 ECTS credits			
Final control			

Audit work - 60%, CPC - 40%

Thematic plan of practical classes

№	TOPIC	Number of hours
1.	Keeping patients with tuberculosis. Detection, diagnosis of tuberculosis. Treatment regimens of patients for the first time diagnosed with tuberculosis and re-treatment. Infectious tuberculosis control.	6
2.	Management of patients with chemo-resistant tuberculosis. Timely establishment of chemo-resistance. Diagrams of treatment of mono-resistant, polyresistant, multi-resistant tuberculosis, and tuberculosis with increased resistance. Peculiarities of management of	

	infectious patients with tuberculosis. Application of palliative methods of treatment.	6
3.	Emergency states in phthisiology. Complications of pulmonary tuberculosis: pulmonary haemorrhage, hemoptysis, spontaneous pneumothorax. Methods of diagnostics. Emergency assistance.	6
	Together:	18

Independent work

№	Theme of independent work	Number of hours	type of control
1.	Differential diagnostics of root and paramediastinal processes, pulmonary dissemination, pulmonary infiltrates.	4	Current control on practical classes
2.	Differential diagnostics of spherical formations in the lungs, cavities in the lungs, pleurisies.	4	
3.	Non-pulmonary tuberculosis: tuberculosis of the lymph nodes, bones, brains and other localizations. Diagnosis and treatment.	4	
	Together:	12	

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.

Methods of control

Current control is carried out on the basis of a comprehensive evaluation of the student's activities and competences acquired by him (knowledge, skills, skills, etc.), which includes control of the incoming level of knowledge, the quality of practical work, the level of theoretical training and the results of the initial control of the level of knowledge.

The results of current control (current progress) are an indicator of the level of students' learning of the curriculum and the fulfillment of the requirements of independent work of students. The results of current control are the basic information for determining the estimation during the offsetting and is 60%. Assessment of current students' progress is carried out on each practical (laboratory or seminar) session on a 4-point scale and recorded in the journal of academic progress. It takes into account all types of work and competencies provided by the curriculum and methodological development for the study of the topic. A student receives an assessment from each topic.

Criteria for evaluation

Assessment of the student's oral response			
"Perfectly"	"Good"	"Satisfactory"	"Unsatisfactory"
The student flawlessly mastered the theoretical material of the topic, demonstrates deep and comprehensive knowledge of the topic, the main provisions of the scientific sources and the recommended literature, logically thinks and builds the answer, freely uses theoretical knowledge in the analysis of practices -the material, expresses its attitude to certain problems, demonstrates a high level of mastering of practical skills.	The student has well mastered the theoretical material of the class, possesses the main aspects from the primary sources and the re-commended literary tour, reasonably teaches it, possesses practical skills, expresses his thoughts on certain problems, but assumes some inaccuracies and errors in the logic of presenting the theoretical content or in the practice of practical skills.	The student mainly mastered the theoretical knowledge of the educational subject, oriented in the primary sources and recommended summer-style, but not convincedly answers, plo-taye concepts, additional questions cause the student uncertainty or lack of stable knowledge; answering practical-nature queries, reveals inaccuracies in knowledge, does not know how to evaluate the facts and phenomena, to associate them with future activities, is supposed to be in the way of doing practical skills.	The student has not mastered the educational material of the topic, does not know the scientific facts, definitions, is almost not oriented in the primary sources and recommended literature, there is no scientific thinking, practical skills are not formed.
Assessment of the solution of test tasks			
"Perfectly"	"Good"	"Satisfactory"	"Unsatisfactory"
100-91%	90-76%	75-51%	50, less than%
Evaluating the clinical situation			

"Perfectly"	"Good"	"Satisfactory"	"Unsatisfactory"
Precisely formulated and fully substantiated clinical diagnosis in the patient and a plan of treatment.	Precisely formulated and partly substantiated clinical diagnosis in the patient, inaccuracies were made during the preparation of the treatment plan.	There were difficulties in substantiating the clinical diagnosis, drawing up a patient's treatment plan.	No answer to the task was given.
Assessment of the demonstration of practical skills			
"Perfectly"	"Good"	"Satisfactory"	"Unsatisfactory"
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.

The department informs students about the course of the course, the content and criteria of the current control in the first class on discipline.
In case of passing a practical lesson, the student is obliged to complete his full work within 2 weeks (14 calendar days) according to the schedule of practical training of the department, but not later than the last day of the graduation week in the corresponding semester. If a student misses more than 3 practical classes, he must obtain permission to work in the dean's office.

Distribution of points received by students

Types of control - current and final.
The form of final control in accordance with the curriculum is a credit
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 When assessing the mastering of each topic in the course of the current educational activity, the student is assessed on a 4-point (traditional) scale, taking into account the criteria for assessing the discipline. It takes into account all types of works provided for by the curriculum. A student receives an assessment from each topic. Forms of assessment of the current academic activity are standardized and include the control of theoretical and practical training. Shown on a traditional scale of evaluation are converted to points.

The maximum number of points that a student can gain for his current educational activity when studying a discipline is 200 points.
The minimum number of points that a student should collect for his current educational activity for enrollment of the discipline is 120 points.
The calculation of the number of points is based on the student's assessment of the traditional scale during the study of the discipline during the semester, by calculating the average arithmetic (CA) rounded up to two decimal places. The resulting value is converted to a score on a multi-scale scale in the following way:

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

Recalculation of the average for the current activity in the multi-scale scale for the disciplines ending with the score

4-score scale	200 score scale -	4-score scale	200 score scale -	4-score scale	200-score scale	4- score scale	200- score scale
5	200	4.45	178	3.92	157	3.37	135
4.97	199	4.42	177	3.98	156	3.35	134
4.95	198	4.4	176	3.87	155	3.32	133
4.92	197	4.37	175	3.84	154	3.3	132
4.9	196	4.35	174	3.82	153	3.27	131
4.87	195	4.32	173	3.79	152	3.25	130
4.85	194	4.3	172	3.77	151	3.22	129
4.82	193	4.27	171	3.74	150	3.2	128
4.8	192	4.24	170	3.72	149	3.17	127
4.77	191	4.22	169	3.7	148	3.15	126
4.75	190	4.19	168	3.67	147	3.12	125
4.72	189	4.17	167	3.65	146	3.1	124
4.7	188	4.14	166	3.62	145	3.07	123
4.67	187	4.12	165	3.57	143	3.02	121
4.65	186	4.09	164	3.55	142	3	120

4.62	185		4.07	163		3.52	141		Less than 3	Not enough
4.6	184		4.04	162		3.5	140			
4.57	183		4.02	161		3.47	139			
4.52	181		3.99	160		3.45	138			
4.5	180		3.97	159		3.42	137			
4.47	179		3.94	158		3.4	136			

Independent work of students is assessed during the current control of the topic in the relevant class.

The assessment of disciplines, the final form of which is a score, is based on the results of the assessment of the current academic activity and is expressed on a two-point scale: "enrolled" or "not enrolled".
In order to enroll in the discipline, the student must receive at least 60% of the maximum amount for the current academic activity (for a 200-point scale - not less than 120 points).
Scores and marks ("enrolled" or "not enrolled") are entered into the exam account and in the student's student book (with the exception of the rating "not credited".
Score points are converted to 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**

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
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).

Methodical support

Methodical developments of practical classes, test tasks, clinical situational tasks, orientational maps for the organization of independent work of students.
List of practical skills

1. Interrogate the patient with symptoms that may indicate tuberculosis.
2. Selection of patients who have shown microscopic examination of sputum.
3. Formulation and interpretation of a skin tuberculin test.
4. Formulation of the clinical diagnosis of tuberculosis according to the classification.
5. Appointment of standard treatment for patients with tuberculosis with cases of 1-4 categories.
6. Diagnosis and treatment of adverse reactions in the treatment of tuberculosis.
7. Monitoring the effectiveness of treatment.
8. Maintaining the primary accounting documentation (No. 081-1 / o "Medical card for TB patient treatment TB 01").
9. Emergency care in patients with tuberculosis (pulmonary haemorrhage, spontaneous pneumothorax, acute pulmonary insufficiency).
10. Training of patients on respiratory care and cough etiquette.

LIST OF QUESTIONS FOR PREPARING STUDENTS TO THE FINAL MODULE CONTROL

Standard diagnostic algorithms for the examination of a patient with cough and / or other symptoms that may indicate tuberculosis.
• Cases of first-time diagnosis of tuberculosis and cases of re-treatment.
• Managing a patient for polysaccharide tuberculosis: algorithms and standards for diagnosis and treatment.
• Patient management of multi-resistant tuberculosis: algorithms and standards for diagnosis and treatment.
• Conducting a patient with advanced resistance tuberculosis: algorithms and standards for diagnosis and treatment.
• The management of tuberculosis patients in combination with HIV: an algorithm and a standard for diagnosis and treatment.
• Requirements for infection control aimed at preventing intra-hospital transmission of infection and occupational disease of medical personnel.

Recommended Books

1. Phthysiology. nats textbook / edited by V. I. Petrenko,. - Kyiv .: VVV "Medicine", 2015. - 472 p.

2. Prevention of tuberculosis. A manual for students and doctors - interns of the VNMZ IV level of accreditation and doctors / V. I. Petrenko, M. G. Dolinskaya, A. V. Alexandrin, V. V. Petrenko - K.: "Ridzhi" LLC, 2017. - 88 p.
3. Feschenko Yu.I. Organization of control of chemo-resistant tuberculosis. Production edition. - K .: Health, 2013. - 704 pp.
4. Petrenko V.I. Phthysiology: Textbook. K .: Medicine, 2008. - 488 p.
5. Tuberculosis, HIV / AIDS. VF Moskalenko, RG Protsyuk, VI Petrenko et al. Medicine, Kyiv-2010, p.
6. Fundamentals of phthisiopathology of extrapulmonary localization. Textbook / Ed. Ilynitsky I.G., Kostik A.P., Bilozir L.I. - Lviv 2011. - 511 pp.
7. Pulmonology and phthisiology: a textbook in 2 volumes / Ed. Yu.I.Feshchenko, V.P. Melnyk, I.G.Ilnitsky. - Kyiv, Lviv: Atlas, 2009 - 1336 p.
8. Unified clinical protocol of primary, secondary (specialized) and tertiary (highly specialized) medical care to adults. Tuberculosis, Order of the Ministry of Health of Ukraine 04.09.2014 № 620.

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 Phthisiology 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