



THE MINISTRY OF SCIENCE AND HIGHER EDUCATION OF RUSSIAN FEDERATION
Federal state autonomous educational institution
of higher education
FAR EASTERN FEDERAL UNIVERSITY
(FEFU)

SCHOOL OF MEDICINE

" AGREED BY"

«General medicine» educational program
Supervising person

V.V. Usov
(FULL NAME.)



" APPROVED BY"

Clinical Medicine
Department Director

T.A. Brodskaya
(FULL NAME.)

" 13 » December 2021

" 13 » December 2021

WORKING PROGRAM OF ACADEMIC DISCIPLINE (WPAD)

Oncology, Radiation Therapy

Specialty 31.05.01 «General medicine»

Form of study: full time

year 6, semester C
lectures 18 hours
practical classes 36 hours
laboratory works not provided
total amount of in-classroom works 108 hours
including using ALM 34 hours
independent self-work 54 hours
control works is not provided
credit at the year 6, semester C
exam is not provided

The working program was drawn up in accordance with the requirements of the federal state educational standard of higher education 31.05.01 in the direction of training "General Medicine" (level of training specialist), approved by order of the Ministry of Science and Higher Education of the Russian Federation dated August 12, 2020 No. 988 and the Educational Plan in the direction of training "General Medicine".
The working program of the discipline was discussed at the meeting of the Department of the clinical medicine. Protocol No.4, 13 December 2021

Director of the Department of Clinical Medicine: Dr of science, professor Brodskaya T.A..
Prepared by: Usov VV, Kiselyov A.Yu.

Vladivostok
2022

Reverse side of the title page of the WPAD

I. The work program was revised at the meeting of the Department:

Protocol dated " ____ " _____ 20__ No. _____

Department Director _____

(signature)

(Full Name)

II. The work program was revised at the meeting of the Department:

Protocol dated " ____ " _____ 20__ No. _____

Department Director _____

(signature)

(Full Name)

III. The work program was revised at the meeting of the Department:

Protocol dated " ____ " _____ 20__ No. _____

Department Director _____

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IV. The work program was revised at the meeting of the Department:

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(Full Name)

V. The work program was revised at the meeting of the Department:

Protocol dated " ____ " _____ 20__ No. _____

Department Director _____

(signature)

(Full Name)

ANNOTATION

The discipline "Oncology, radiation therapy" is intended for students enrolled in the educational program of higher education on 31.05.01 "General Medicine", is included in the basic part of the curriculum, is implemented on the 6th course in the 12th semester. The total complexity of the discipline is 108 hours, 3 credit units.

In developing the work program of the discipline, the Federal State Educational Standard of Higher Education in the specialty 31.05.01 "General Medicine" (specialty level) has been used.

The course program is based on the basic medical knowledge gained by students:

the ability and willingness to implement the ethical and deontological principles in professional activities (GPC – 4)

- the readiness for medical use of drugs and other medical substances and their combinations in solving professional problems (GPC – 8)

the capacity for the assessment of morphological and physiological states and pathological processes in the human body for solving professional tasks (GPC – 9)

- the readiness to collect and to analyze patient complaints, data of its history, the results of laboratory, instrumental, postmortem and other examinations to recognize the incidence or the absence of diseases (PC – 5)

- the readiness for educational activities to eliminate the risk factors and promote healthy lifestyles (PC – 16)

The purpose of mastering the discipline "Oncology, radiation therapy" is: to teach students the theoretical and practical basics of prevention, diagnosis and treatment of oncological diseases

Tasks

1. To study the main nosological forms of oncological diseases
2. To teach the basics of early diagnosis of oncological diseases in the clinic and at home;

3. To teach the basics of carrying out a complex of treatment-and-prophylactic measures at the pre-hospital stage in an oncological clinic;
4. To study modern tactics in relation to oncological patients.
5. To study modern methods of treatment of oncological diseases, including radiation therapy
6. To study the features of medical care for oncological patients.

To solve these problems, a course of thematic lectures, clinical analyzes of patients, mastering of modern diagnostic methods and methods of treatment are planned.

As a result of studying this discipline, students form the following general professional and professional competencies:

Name of the category (group) of universal competencies	Code and name of general professional competence (result of development)	Code and name of the competency achievement indicator
Etiology and pathogenesis	GPC-5 Able to assess morphofunctional, physiological conditions and pathological processes in the human body to solve professional problems	GPC-5.3 He is proficient in the algorithm of physical examination, clinical, laboratory, instrumental diagnostics in solving professional problems
Treatment of diseases and conditions	GPC-7 Able to prescribe treatment and monitor its effectiveness and safety	GPC-7.1 Able to prescribe treatment based on knowledge of morphological and functional features, physiological conditions and pathological processes in the human body, based on the pharmacodynamics of drugs and the mechanism of action of other therapeutic agents and methods

Code and name of the competency achievement indicator	The name of the assessment indicator (the result of training in the discipline)
GPC-5.3	Knows the algorithm of physical examination of patients with cancer, the principles of clinical, laboratory and instrumental diagnostics

He is proficient in the algorithm of physical examination, clinical, laboratory, instrumental diagnostics in solving professional problems	Able to conduct physical examination of patients with cancer, diagnose clinical manifestations of diseases; make a plan for the necessary patients with cancer; interpret the results of laboratory and instrumental research methods
	He is proficient in methods of clinical and instrumental examination of patients with cancer
GPC-7.1 Able to prescribe treatment based on knowledge of morphological and functional features, physiological conditions and pathological processes in the human body, based on the pharmacodynamics of drugs and the mechanism of action of other therapeutic agents and methods	Knows the features of the pharmacodynamics of drugs, the mechanism of therapeutic agents and methods for physiological and pathological conditions of a person.
	Be able to draw up a treatment plan based on knowledge of morphological and functional features, physiological conditions and pathological processes in the human body, based on the pharmacodynamics of drugs and the mechanism of action of other therapeutic agents and methods.
	He is able to independently prescribe treatment based on knowledge of morphological and functional features, physiological conditions and pathological processes in the human body, based on the pharmacodynamics of drugs and the mechanism of action of other therapeutic agents and methods.

As a result of studying this discipline, students form the following professional competencies:

Task type	Code and name of professional competence (result of mastering)	Code and name of the competency achievement indicator
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<p>Type of tasks of professional activity: individual</p>	<p>PC-4 Ready to collect and analyze patient complaints, anamnesis data, results of physical examination, laboratory, instrumental, pathoanatomical and other studies in order to recognize the condition or establish the presence or absence of the disease in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care</p>	<p>PC-4.4 Able to determine the sequence of volume, content and sequence of diagnostic measures, taking into account the standards of medical care</p>
	<p>PC-5 Able to establish a diagnosis taking into account the current International Statistical Classification of Diseases and Related Health Problems (ICD)</p>	<p>PC-5.2 Able to carry out early diagnosis of diseases of internal organs</p>
	<p>PC-6 Able to develop a treatment plan for a disease or condition, taking into account the diagnosis, age and clinical picture in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care</p>	<p>PC-5.4 Knows how to use the International Statistical Classification of Diseases and Related Health Problems (ICD) for diagnosis</p> <p>PC-6.2 Knows the procedure for providing palliative care</p>

		<p>PC-6.3 Is able to draw up a treatment plan for the disease and the patient's condition, taking into account the diagnosis, age of the patient, the clinical picture of the disease in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care</p>
	<p>PC-7 Ready to prescribe medicines, medical devices and medical nutrition, taking into account the diagnosis, age and clinical picture of the disease and in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care</p>	<p>PC-7.2 Is able to prescribe medicines, medical devices and therapeutic nutrition, taking into account the diagnosis, age and clinical picture of the disease in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care</p>

Code and name of the competency achievement indicator	The name of the assessment indicator (the result of training in the discipline)
<p>PC-4.4 Able to determine the sequence of volume, content and sequence of diagnostic measures, taking into account the standards of medical care</p>	<p>Knows the scope, content and sequence of diagnostic measures, taking into account the standards of medical care in order to recognize the condition or establish the presence or absence of cancer</p>
	<p>Is able to determine the order of volume, content and sequence of diagnostic measures, taking into account the standards of medical care in order to recognize the condition or establish the presence or absence of cancer</p>
	<p>Possesses the skill of independently determining the sequence, volume, content and sequence of diagnostic measures, taking into account the standards of medical care in order to recognize the condition or establish the presence or absence of cancer</p>
<p>PC-5.2</p>	<p>Knows the principles of early diagnosis of diseases of internal organs in patients with cancer</p>

Able to carry out early diagnosis of diseases of internal organs	Knows how to draw up an action plan for early diagnosis of diseases of internal organs in patients with cancer
	Possesses the skill of early diagnosis of diseases of internal organs in patients with cancer
PC-5.4 Knows how to use the International Statistical Classification of Diseases and Related Health Problems (ICD) for diagnosis	Knows the necessary information about the development and course of the disease, according to the ICD-X revision
	Able to identify possible etiological factors, apply objective methods of examination of the patient, identify general and specific signs of cancer necessary for diagnosis
	Possesses the formed theoretical and practical skills that allow you to establish a diagnosis according to the ICD
PC-6.2 Knows the procedure for providing palliative care	Knows the diseases that need palliative care.
	Knows how to determine the indications and methods of palliative care in accordance with the procedures for the provision of palliative care.
	Has the skill of providing palliative care in accordance with the procedures for providing palliative care.
PC-6.3 Is able to draw up a treatment plan for the disease and the patient's condition, taking into account the diagnosis, age of the patient, the clinical picture of the disease in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care	Knows general and special methods of diagnosis and treatment of patients with cancer
	Knows how to apply objective methods of examination of patients with cancer, to identify general and specific signs of diseases; Determine the indications for the treatment of patients with cancer in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocol)
	Possesses the formed theoretical knowledge of drawing up a treatment plan for patients with cancer, taking into account the diagnosis, age of the patient, the clinical picture of the disease in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocol) on the provision of medical care, taking into account the standards of medical care
PC-7.2 Is able to prescribe medicines, medical devices and therapeutic nutrition, taking into account the diagnosis, age and clinical picture of the disease in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of	Knows modern medicines, medical devices used to treat patients with cancer in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocol)
	Able to determine indications for prescribing medicines, medical devices and medical nutrition, taking into account the standards of medical care

<p>medical care, taking into account the standards of medical care</p>	<p>Possesses theoretical knowledge about prescribing medicines, medical devices and therapeutic nutrition, taking into account the diagnosis, age of patients with oncological diseases with current procedures for the provision of medical care, clinical recommendations (treatment protocol) on the provision of medical care, taking into account the standards of medical care</p>
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III. STRUCTURE AND CONTENT OF THEORETICAL PART OF THE COURSE (34 HOURS)

Module 1 General problems of oncology (6 hours)

Topic 1 General problems of oncology (2 hours)

Modern problems of oncology. Incidence and mortality from malignant neoplasms. Organization of oncological service in Russia. Structure of oncological service. Oncology center, oncology room. Diagnostic centers. General characteristics of oncological care. The doctrine of tumors. The pathogenesis of clinical symptoms. Principles of diagnosis and treatment of malignant tumors. Etiology of tumors.

Topic 2 Modern principles and methods of treatment of oncological diseases (2 hours)

Classification of treatment methods. Principles of radical surgery. The concept of "anatomical zone", the principle of cladding. The concept of operability and resectability. Palliative surgery. Methods of radiation therapy of malignant tumors. The sensitivity of malignant tumors to chemotherapeutic drugs and radiation therapy

Topic 3 Pain syndrome in cancer. Pain management. (2 hours)

Pain and pain relief in cancer. Rehabilitation. Acute and chronic pain syndrome. Assessment of pain intensity and efficacy of pain relief. Treatment of acute and chronic pain syndromes. Principles of deontology in oncology. Basics of palliative medicine. Informing relatives. Carcinophobia.

MODULE 2 Radiation Therapy Basics (8 hours)

Topic 4 Physical fundamentals of radiation therapy (2 hours)

The structure of physical matter. Atom model: mass, charge, electron shells. Intraatomic bonds, energy levels. Radionuclides Natural and artificial radionuclides, Half-life. Types of interaction of ionizing radiation with matter. Leading radiation-chemical reaction and changes in cell structures. Radiation reactions, general and local. Factors affecting the body's response to radiation. Radiation dose Radiation safety. Determined and stochastic effects. Ionizing radiation dosimetry methods. Clinical dosimetry, protection dosimetry, individual dosimetry.

Topic 5 General questions of radiotherapy of malignant tumors (2 hours)

Requirements for radiotherapy of malignant tumors: the basic principle of radiotherapy of malignant tumors. Periods of radiation therapy: pre-radiation, radiation and postradiation. Indications for radiotherapy of malignant tumors. Contraindications to radiotherapy of malignant tumors. Preparing the patient for radiation therapy: physiological and psychological preparation. Radiation therapy planning. CT simulator, 3D planning system. Contouring the amount of exposure. Production of topographic and dosimetric maps on the planning system.

Topic 6 Radiotherapy of tumors of various localization (1) (2 hours)

Radiation therapy of malignant tumors of the head and neck. Features and place of radiation therapy in the treatment of squamous skin cancer, basal cell carcinoma and melanoma. Tactics of radiation therapy in the treatment of thyroid cancer. Cancer of the larynx. Tactics of radiation and combined treatment. Radiotherapy of tumors of the oral cavity and pharynx. Lung cancer. Indications for radiotherapy, combined and complex treatment. Complications of radiation therapy. Esophageal carcinoma. Radiation and combined treatment. Traditional and non-traditional dose fractionation regimes. Complications of radiation therapy.

Topic 7 Radiotherapy of tumors of various localization (2) (2 hours)

Mammary cancer. The place of radiation therapy in the combined and complex treatment of breast cancer.

Brain tumors. Radiation therapy of primary tumors and metastases. Radiation therapy in the combined treatment of CNS tumors. Dose fractionation modes. Complications of radiation therapy.

Stomach cancer. Tactics of radiation therapy in an independent and combined and complex treatment.

Determining the amount of radiation in the combined treatment of Hodgkin's lymphomas and non-Hodgkin's lymphomas.

Combined radiation therapy and combined treatment for cancer of the cervix and body of the uterus.

Radiotherapy of malignant tumors. Features, place and amount of radiation therapy in brain medulloblastoma. malignant lymphomas, neuroblastoma, Wilms tumors, osteogenic sarcoma, Ewing's sarcoma, soft tissue sarcomas, retinoblastoma.

MODULE 3 Private Oncology (20 hours)

Topic 8 Cancer of the esophagus (2 hours)

Esophageal carcinoma. Statistics and epidemiology. Pre-cancerous conditions. The clinical picture of esophageal cancer. The role of radiation and endoscopic methods in diagnosis. Differential diagnosis. Treatment methods (surgical, radiation, combined and complex treatment), indications depending on the location and extent of the tumor process. Long-term results and forecast.

Topic 9 Gastric cancer (2 hours)

Stomach cancer. Classification of gastric cancer. Ways of regional metastasis of gastric cancer (classification of the Japanese society for the study of gastric cancer). Primary and clarifying diagnostics. Surgical treatment: indications for certain types of surgical interventions. Treatment of early forms of gastric cancer. Complicated gastric cancer - clinic, treatment tactics. Stomach cancer recurrences. Treatment methods for primary liver cancer. Results and forecast.

Topic 10 Colon cancer (2 hours)

Cancer of the blind, colon and rectum. Statistics and epidemiology. Clinic of cancer of the blind, colon and rectum, depending on the location and form of tumor growth. Features of metastasis. Primary multiple colon cancer. Complicated cancer

of the colon, therapeutic tactics. Principles of surgical treatment of cancer of the blind, colon and rectum. The role of radiation therapy in the treatment of rectal cancer. Combined treatment of rectal cancer. Adjuvant chemotherapy for colon cancer. Long-term treatment results and prognosis. Medical tactics for solitary metastases to the liver and lungs.

Topic 11 Hepato-pancreato-biliary tumors (2 hours)

Tumors of the hepato-pancreato-biliary region. Statistical data. Syndrome of mechanical jaundice. Ultrasound, computed tomography and angiography in the differential diagnosis of tumors of the hepato-pancreato-biliary region. Methods for their treatment. Liver tumors. Statistical data. Primary and metastatic tumors of the liver. Epidemiology and histogenesis of primary liver cancer. The role of special methods in the diagnosis of liver tumors. The value of alpha-fetoprotein in the differential diagnosis. Treatment methods for primary liver cancer. Results and forecast.

Extraorganic retroperitoneal tumors. Classification histogenesis. Features of the clinical course. The role of ultrasound and computed tomography in the diagnosis. Methods of treatment of retroperitoneal unrobed tumors: surgical, radiation, drug. Therapeutic tactics in relapses of the disease. Long-term treatment results and prognosis.

Topic 12 Skin cancer and melanoma (2 hours)

Skin cancer and melanoma. Incidence. Contributing factors. Optional and obligatory precancer of the skin. Cancer prevention measures. Histological types (basal cell carcinoma, squamous cell carcinoma). Treatment of skin cancer (radiation, cryogenic, surgical, medicinal, etc.). Immediate and long-term results. Melanoma. Epidemiology of melanomas. Features of growth and metastasis. Stage. Clinical characteristic. Signs of nevus malignancy. Rule abcde. Methods of special examination (radioisotope diagnosis, thermography). Treatment. Results.

Topic 13 Malignant neoplasms of the chest (2 hours)

The concept of central and peripheral cancer. Histological structure. Patterns of metastasis. The division into stages. Clinical picture. Clinical variants of central

and peripheral cancer. Differential diagnosis. The main radiological symptoms. Signs of atelectasis. An additional examination system for suspected central and peripheral cancer. The value of tomography and bronchoscopy. CT scan. Bronchography Transthoracic puncture and catheterization of the bronchi. General principles of treatment: surgical, radiotherapy, chemotherapy. The choice of treatment depending on the location of the tumor, stage and histological structure. Combined and complex treatment.

Topic 14 Breast cancer (2 hours)

Mammary cancer. Incidence. The role of hormonal disorders. Other risk factors; Burdened history, poor nutrition. Mastopathy. Etiopathogenesis. Classification. Localized and diffuse forms. Clinical picture. Dividing the stage na. Clinic typical (nodal) form. Differential diagnosis with localized mastopathy and fibroadenoma. Special forms of cancer: edematous-infiltrative, mastitis-like, geriatric and armored, Pedzhet's cancer. Screening for breast cancer. The role of viewing rooms. Prophylactic examinations permitting mammography.

Principles of treatment of breast cancer. The choice of method depending on the stage and form of the tumor. Types of radical operations. Economical and advanced operations. Indications for combined and complex treatment. Long-term results. Dependence on the stage of the disease. The system of clinical examination, rehabilitation and examination of working capacity.

Topic 15 Malignant tumors of the thyroid gland (2 hours)

Malignant tumors of the thyroid gland. Clinical + morphological classification. Clinical course. Features of the course of various forms of cancer. Patterns of metastasis. Diagnostics (clinical, radiation, cytology), the use of other special methods of research. Methods of treatment and prognosis.

Topic 16 Malignant Lymphomas (2 hours)

Features of the clinical course. Classification. Diagnostic methods. Principles of treatment.

Hodgkin's lymphoma and NHL. Incidence. Classification. Clinic. Histological variants of Hodgkin's lymphoma and NHL. The role of modern

methods in the diagnosis and assessment of the prevalence of the process. Treatment. Forecast

Subject 17 Sarcoma of soft tissues and bones (2 hours)

Sarcoma of soft tissues and bones. Bone tumors. Classification. Incidence. Pathological characteristic. The main types of malignant tumors: osteogenic sarcoma, Ewing's sarcoma, chondrosarcoma, secondary malignant tumors. Clinical picture. Diagnostics. The main radiological symptoms. Radioisotope diagnosis. The value of morphological research. Surgical, radiation, combined and complex treatment. Safe operations. Long-term results.

II. STRUCTURE AND CONTENT OF PRACTICAL COURSE PART (34 hours)

Lesson 1 General questions of oncology (2 hours)

Modern problems of oncology. Structure incidence and mortality of malignant neoplasms. Organization of oncological service in Russia. Incidence and mortality from malignant neoplasms. Age and sex characteristics. Dynamics and structure of the incidence. Regional features of the spread of malignant neoplasms. Factors contributing to the occurrence of tumors. The most important scientific directions in oncology. Dynamics of indicators of treatment of cancer patients. Modern advances in oncology. Structure of oncological service. Oncology center, oncology room. Diagnostic centers. General characteristics of oncological care.

The study of tumors. The pathogenesis of clinical symptoms. Principles of diagnosis and treatment of malignant tumors. Etiology of tumors. Precancerous diseases. Dysplasia. The course of cancer. The concept of cancer in situ and early cancer. Forms of growth of malignant tumors. Evaluation of the prevalence of the process by stages and system TNM. Preclinical and clinical periods of cancer. Pathogenesis of symptoms of malignant neoplasms. The impact of previous diseases and joined the infection on the clinical picture of cancer.

Session 2 Modern principles and methods of treatment of oncological diseases (2 hours)

Classification of treatment methods. Principles of radical surgery. The concept of "anatomical zone", the principle of cladding. The concept of operability and resectability. Palliative surgery. Methods of radiation therapy of malignant tumors. Radiosensitive and radioresistant tumors. Classification of anticancer drugs - Mechanism of action. The sensitivity of malignant tumors to chemotherapeutic drugs. Indications for chemotherapy treatment. Contraindications to chemotherapy. Principles of chemotherapy. Adjuvant and non-adjuvant chemotherapy.

Lesson 3 Pain syndrome in cancer. Pain management (2 hours)

Pain and pain relief in cancer. Rehabilitation. Acute and chronic pain syndrome. Assessment of pain intensity and efficacy of pain relief. Treatment of acute and chronic pain syndromes. Principles of deontology in oncology. Types of higher nervous activity and behavioral reactions of the patient. The relationship of the doctor with different categories of cancer patients. Motives for patients to refuse treatment. Patients with common forms of malignant tumors. Basics of palliative medicine. Informing relatives. Carcinophobia

Lesson 4 Physical Basics of Radiotherapy (2 hours)

The structure of matter. Atom model: mass, charge, electron shells. Intraatomic bonds, energy levels. Radionuclides Open and closed radionuclides. Half life. Natural and artificial radionuclides. Types of interaction of ionizing radiation with matter. Characteristic $So60$. The spread of various types of ionizing radiation in matter and biological tissue. Leading radiation-chemical reaction and changes in cell structures. Lethal, sublethal and potentially lethal cell damage. Oxygen effect. Radiation reactions, general and local. Factors affecting the body's response to radiation. Radiation dose Exposure, equivalent, effective and absorbed dose units. Dose field. Isodose curves. Radiation safety. Deterministic and stochastic effects. Ionizing radiation dosimetry methods. Clinical dosimetry, protection dosimetry, individual dosimetry. Classification of methods of radiation therapy according to the method of summing the dose of ionizing radiation. Remote

and contact methods of radiation therapy. Features of the dose distribution in the human body with different methods of radiotherapy.

Lesson 5 General questions of radiotherapy of malignant tumors (2 hours)

Requirements for radiotherapy of malignant tumors: the basic principle of radiotherapy of malignant tumors is the summing up of the optimal possible dose to a tumor with minimal impact on the surrounding healthy tissue; timely start of treatment at the earliest possible stage; selection of the most optimal irradiation technique; simultaneous effects on the primary tumor and regional metastasis zones. The course of radiation therapy should be as radical as possible in order to avoid repeated courses. Periods of radiation therapy: pre-radiation, radiation and postbeam. Indications for radiotherapy of malignant tumors. Contraindications to radiotherapy of malignant tumors. Preparing the patient for radiation therapy: physiological and psychological preparation. Radiation therapy planning. CT simulator, 3D planning system. Contouring the amount of exposure. Production of topographic and dosimetric maps on the planning system. The goal of radiation therapy: radical, palliative and symptomatic. Combined and complex treatment of malignant neoplasms. Tasks of preoperative and postoperative irradiation. Determination of the total focal dose depending on the histological structure and characteristics of tumor growth. Assessment of tolerance of neighboring organs and tissues. Selection of the dose fractionation mode.

Lesson 6 Radiotherapy of tumors of various localization (1) (2 hours)

Radiation therapy of malignant tumors of the head and neck. Features and place of radiation therapy in the treatment of squamous skin cancer, basal cell carcinoma and melanoma. Tactics of radiation therapy in the treatment of thyroid cancer. Using the method of selective accumulation of isotopes. Cancer of the larynx. Tactics of radiation and combined treatment. Radiotherapy of tumors of the oral cavity and pharynx. Relief of the phenomena of radiation epitheliitis. Lung cancer. Indications for radiotherapy, combined and complex treatment. Traditional and non-traditional dose fractionation regimes. Complications of radiation therapy.

Esophageal carcinoma. Radiation and combined treatment. Traditional and non-traditional dose fractionation regimes. Complications of radiation therapy.

Lesson 7 Radiotherapy of tumors of various localization (2) (2 hours)

Mammary cancer. The place of radiation therapy in the combined and complex treatment of breast cancer. Brain tumors. Radiation therapy of primary tumors and metastases. Radiation therapy in the combined treatment of CNS tumors. Dose fractionation modes. Complications of radiation therapy. Stomach cancer. Tactics of radiation therapy in an independent and combined and complex treatment. Determining the amount of radiation in the combined treatment of Hodgkin's lymphomas and non-Hodgkin's lymphomas. Combined radiation therapy and combined treatment for cancer of the cervix and body of the uterus.

Radiotherapy of malignant tumors. Features, place and amount of radiation therapy in brain medulloblastoma, malignant lymphomas, neuroblastoma, Wilms tumors, osteogenic sarcoma, Ewing's sarcoma, soft tissue sarcomas, retinoblastoma.

Lesson 8 Cancer of the esophagus (2 hours)

Esophageal carcinoma. Statistics and epidemiology. Pre-cancerous conditions. The clinical picture of esophageal cancer. The role of radiation and endoscopic methods in diagnosis. Differential diagnosis. Treatment methods (surgical, radiation, combined and complex treatment), indications depending on the location and extent of the tumor process. Long-term results and forecast.

Lesson 9 Stomach Cancer (2 hours)

Stomach cancer. Statistics and epidemiology. Pretumor diseases of the stomach, therapeutic tactics. Classification of gastric cancer. Ways of regional metastasis of gastric cancer (classification of the Japanese society for the study of gastric cancer). Primary and clarifying diagnostics. Surgical treatment: indications for individual types of surgical interventions, their volume, combined operations. The role of extended lymphadenectomy. Treatment of early forms of gastric cancer (organ-sparing interventions, endoscopic treatment, PDT). Complicated gastric cancer - clinic, treatment tactics. Stomach cancer relapses - diagnostic and

treatment tactics. Cancer of the operated stomach. Possibilities of radiation and drug therapy for gastric cancer. Immediate and long-term results of treatment, prognosis.

Lesson 10 Colon Cancer (2 hours)

Cancer of the blind, colon and rectum. Statistics and epidemiology. Polyps and villous tumors of the colon as pretumor diseases, therapeutic tactics. Clinic of cancer of the blind, colon and rectum, depending on the location and form of tumor growth. Features of metastasis. Primary multiple colon cancer. Complicated cancer of the colon, therapeutic tactics. Principles of surgical treatment of cancer of the blind, colon and rectum. The volume of surgical interventions. Sphincter-preserving operations. The role of radiation therapy in the treatment of rectal cancer. Combined treatment of rectal cancer. Adjuvant chemotherapy for colon cancer. Long-term treatment results and prognosis. Medical tactics for solitary metastases to the liver and lungs.

Lesson 11 Hepato-Pancreato-Biliary Tumors (2 hours)

Tumors of the hepato-pancreato-biliary region. Statistical data. Syndrome of mechanical jaundice. Differential diagnosis of jaundice. Ultrasound, computed tomography and angiography in the differential diagnosis of tumors of the hepato-pancreato-biliary region. Methods for their treatment. Palliative and radical treatment of pancreatic head cancer. The possibilities of conservative therapy. Treatment results and prognosis.

Liver tumors. Statistical data. Primary and metastatic tumors of the liver. Epidemiology and histogenesis of primary liver cancer. The role of special methods in the diagnosis of liver tumors. The value of alpha-fetoprotein in the differential diagnosis. Treatment methods for primary liver cancer. Results and forecast.

Extraorganic retroperitoneal tumors. Classification histogenesis. Features of the clinical course. The role of ultrasound and computed tomography in the diagnosis. Methods of treatment of retroperitoneal unrobed tumors: surgical, radiation, drug. Therapeutic tactics in relapses of the disease. Long-term treatment results and prognosis.

Lesson 12 Skin Cancer and Melanoma (2 hours)

Skin cancer and melanoma. Incidence. Contributing factors. Optional and obligatory precancer of the skin. Cancer prevention measures. Histological types (basal cell carcinoma, squamous cell carcinoma). Stages of skin cancer. Clinical variants of basaliomas and squamous cell carcinoma. Methods of examination of patients (examination, palpation, biopsy). Treatment of skin cancer (radiation, cryogenic, surgical, medicinal, etc.). Immediate and long-term results. Melanoma. Epidemiology of melanomas. Factors contributing to the malignancy of pigment nevus, measures to prevent their malignancy, growth and metastasis. Stage. Clinical characteristic. Signs of nevus malignancy. Rule ABCDE Special examination methods (radioisotope diagnosis, thermography). Indications, contraindications and methods of sampling for cytological and histological studies. Treatment. Results.

Lesson 13 Malignant neoplasms of the chest (2 hours)

Malignant neoplasms of the chest. Incidence. Age and sex characteristics. Contributing factors. Prevention. Pathological characteristic. Forms of growth. The concept of central and peripheral cancer. Histological structure. Patterns of metastasis. The division into stages. Clinical picture. Preclinical and clinical periods. Semiotics of lung cancer. Clinical variants of central and peripheral cancer. Differential diagnosis. Diagnostics. Alarms Evaluation of anamnesis and physical examination. Cytological examination of sputum. The main radiological symptoms. Signs of atelectasis. An additional examination system for suspected central and peripheral cancer. The value of tomography and bronchoscopy. CT scan. Bronchography Transthoracic puncture and catheterization of the bronchi. Early detection of lung cancer, the value of fluorography. Screening organization. High risk groups. General principles of treatment: surgical, radiotherapy, chemotherapy. The choice of treatment depending on the location of the tumor, stage and histological structure. Combined and complex treatment.

Lesson 14 Breast Cancer (2 hours)

Mammary cancer. Incidence. The role of hormonal disorders. Other risk

factors; Burdened history, poor nutrition. Mastopathy. Etiopathogenesis. Classification. Localized and diffuse forms. Clinical picture. Dividing the stage na. Clinic typical (nodal) form. Differential diagnosis with localized mastopathy and fibroadenoma. Special forms of cancer: edematous-infiltrative, mastitis-like, geriatric and armored, Pedzhet's cancer. Features of the flow. Differential diagnosis. Examination of patients. Screening for breast cancer. The role of viewing rooms. Prophylactic examinations permitting mammography. Principles of treatment of breast cancer. The choice of method depending on the stage and form of the tumor. Types of radical operations. Economical and advanced operations. Indications for combined and complex treatment. The value of adjuvant chemotherapy. Treatment of infiltrative forms of cancer. Long-term results. Dependence on the stage of the disease. The system of clinical examination, rehabilitation and examination of working capacity.

Lesson 15 Malignant tumors of the thyroid gland (2 hours)

Malignant tumors of the thyroid gland. Clinical + morphological classification. Clinical course. Features of the course of various forms of cancer. Patterns of metastasis. Diagnostics (clinical, radiation, cytology), the use of other special methods of research. Methods of treatment and prognosis.

Neck tumors. Classification. Non-organ tumors of the neck (neurogenic, mesenchymal, disambrional). Diagnostics. Special diagnostic methods. Principles of treatment (surgical, radiation, combined). Cancer metastases in the lymph nodes of the neck without identifying the primary tumor. Diagnostic and treatment tactics. Angiography and morphological studies, treatment. Long-term results.

Lesson 16 Malignant Lymphomas (2 hours)

Features of the clinical course. Classification. Diagnostic methods. Principles of treatment. Hodgkin's lymphoma and NHL. Incidence. Classification. Clinic. Histological variants of Hodgkin's lymphoma and NHL. The role of modern

methods in the diagnosis and assessment of the prevalence of the process. Treatment. Forecast

Session 17 Sarcoma of Soft Tissues and Bones (2 hours)

Sarcoma of soft tissues and bones. Bone tumors. Classification. Incidence. Pathological characteristic. The main types of malignant tumors: osteogenic sarcoma, Ewing's sarcoma, chondrosarcoma, secondary malignant tumors. Clinical picture. Diagnostics. "Alarms". The main radiological symptoms. Radioisotope diagnosis. The value of morphological research. Surgical, radiation, combined and complex treatment. Safe operations. Long-term results. Clinical examination cured. Tumors of soft tissue. Incidence. Pathological characteristic. Localization. Clinical picture. "Alerts". Differential diagnosis. Examination methods: ultrasound, computed tomography and magnetic resonance. Value

III. TRAINING AND METHODOLOGICAL SUPPORT OF INDEPENDENT WORK OF STUDENTS

The main content of the topics, evaluation tools are presented in the WPAS: terms and concepts necessary for mastering the discipline.

In the course of mastering the course "Oncology, Radiotherapy", the student will have to do a large amount of independent work, which includes preparation for seminars and writing an essay.

Practical exercises help students to deeper learn the material, to acquire the skills of creative work on documents and primary sources.

Plans for practical classes, their topics, recommended literature, the purpose and objectives of its study are communicated by the teacher at the introductory classes or in the curriculum for the discipline.

Before proceeding to the study of the topic, it is necessary to familiarize yourself with the basic questions of the practical training plan and the list of recommended literature.

Starting the preparation for the practical lesson, it is necessary first of all to refer to the lecture notes, sections of textbooks and teaching aids in order to get a

general idea of the place and importance of the topic in the course being studied. Then work with additional literature, make notes on the recommended sources.

In the process of studying the recommended material, it is necessary to understand the construction of the topic being studied, to highlight the main points, to follow their logic and thereby to get into the essence of the problem being studied.

It is necessary to keep records of the material being studied in the form of an outline, which, along with the visual, includes the motor memory and allows you to accumulate an individual fund of auxiliary materials for a quick repetition of what you read, to mobilize accumulated knowledge. The main forms of record: a plan (simple and detailed), extracts, theses.

In the process of preparation, it is important to compare the sources, think over the material being studied and build an algorithm of actions, carefully consider your oral presentation.

At a practical lesson, each participant should be ready to speak on all the questions posed in the plan, to be as active as possible in their consideration. The speech should be convincing and reasoned, and simple reading of the abstract is not allowed. It is important to show your own attitude to what is being said, express your personal opinion, understanding, substantiate it and draw the right conclusions from what has been said. You can refer to notes of notes and lectures, directly to primary sources, use the knowledge of monographs and publications, facts and observations of modern life, etc.

A student who did not have time to speak at a practical lesson can present a prepared summary to the teacher for verification and, if necessary, answer the teacher's questions on the topic of the practical lesson in order to get a credit score on this topic.

Educational and methodological support of students' independent work in the discipline "Oncology, radiation therapy" is presented in Appendix 1 and includes:

- characteristics of tasks for independent work of students and methodological recommendations for their implementation;

- requirements for the presentation and presentation of the results of independent work;
- criteria for assessing the performance of independent work.

CONTROL OF ACHIEVEMENT OF COURSE GOALS

No p/n	Supervised modules / sections / topics of the discipline	Codes and stages of competency formation	Valuation tools - name		
			Current control	Intermediate certification	
1	Module 1 General Issues of Oncology Module 2 Fundamentals of Radiation Therapy Module 3 Private Oncology	GPC-5.3 He is proficient in the algorithm of physical examination, clinical, laboratory, instrumental diagnostics in solving professional problems	Knows	UO-1 Interview	Offset Questions Semester 1 -1-10
			Can	PR-1 Test	PR-1 Test
			Owens	UO-3 Report, report	UO-2 Colloquium
2	Module 1 General Issues of Oncology Module 2 Fundamentals of Radiation Therapy	GPC-7.1 Able to prescribe treatment based on knowledge of morphological and functional features, physiological conditions and pathological processes in the human body, based on the pharmacodynamics of drugs and the mechanism of action of other therapeutic agents and methods	Knows	UO-1 Interview	Offset Questions Semester 1 -11-36
			Can	PR-1 Test	PR-1 Test
			Owens	UO-3 Report, report	UO-2 Colloquium
3	Module 2 Fundamentals of Radiation Therapy Module 3 Private Oncology »	PC-4.4 Able to determine the sequence of volume, content and sequence of diagnostic measures, taking into account the standards of medical care	Knows	UO-1 Interview	Offset Questions Semester 1 -1-36
			Can	PR-1 Test	PR-1 Test
			Owens	UO-3 Report, report	UO-2 Colloquium
4	Module 2 Fundamentals of Radiation Therapy Module 3 Private Oncology	PC-5.2 Able to carry out early diagnosis of diseases of internal organs	Knows	UO-1 Interview	Offset Questions Semester 1 -15-30
			Can	PR-1 Test	PR-1 Test
			Owens	UO-3 Report, report	UO-2 Colloquium
5	Module 1 General Issues of Oncology	PC-5.4 Knows how to use the International Statistical	Knows	UO-1 Interview	Offset Questions Semester 1 -1-10

	Module 2 Fundamentals of Radiation Therapy	Classification of Diseases and Related Health Problems (ICD) for diagnosis	Can	PR-1 Test	PR-1 Test
			Owns	UO-3 Report, report	UO-2 Colloquium
6	Module 2 Fundamentals of Radiation Therapy Module 3 Private Oncology »	PC-6.2 Knows the procedure for providing palliative care	Knows	UO-1 Interview	Offset Questions Semester 1 -11-36
			Can	PR-1 Test	PR-1 Test
			Owns	UO-3 Report, report	UO-2 Colloquium
7	Module 2 Fundamentals of Radiation Therapy Module 3 Private Oncology	PC-6.3 Is able to draw up a treatment plan for the disease and the patient's condition, taking into account the diagnosis, age of the patient, the clinical picture of the disease in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care	Knows	UO-1 Interview	Offset Questions Semester 1 -1-36
			Can	PR-1 Test	PR-1 Test
			Owns	UO-3 Report, report	UO-2 Colloquium
8	Module 2 Fundamentals of Radiation Therapy Module 3 Private Oncology	PC-7.2 Is able to prescribe medicines, medical devices and therapeutic nutrition, taking into account the diagnosis, age and clinical picture of the disease in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care	Knows	UO-1 Interview	Offset Questions Semester 1 -15-30
			Can	PR-1 Test	PR-1 Test
			Owns	UO-3 Report, report	UO-2 Colloquium

Control and methodological materials, as well as criteria and indicators necessary for the assessment of knowledge and skills, and characterizing the stages

of the formation of competencies in the process of mastering the educational program are presented in Appendix 2.

V. LIST OF EDUCATIONAL LITERATURE AND INFORMATION SUPPORT OF DISCIPLINE

Main literature

1. Gynecological Cancers / Springer International Publishing Switzerland
2016 <https://link.springer.com/book/10.1007/978-3-319-32907-9#editorsandaffiliations>
2. Hepatocellular Carcinoma / Springer International Publishing Switzerland
2016 <https://link.springer.com/book/10.1007/978-3-319-34214-6#editorsandaffiliations>
3. Patient Surveillance After Cancer Treatment / Springer Science+Business
Media New York 2013 <https://link.springer.com/book/10.1007/978-1-60327-969-7#editorsandaffiliations>
4. Radiation Therapy Techniques and Treatment Planning for Breast Cancer
/ Springer International Publishing Switzerland 2016
<https://link.springer.com/book/10.1007/978-3-319-40392-2#editorsandaffiliations>

Additional literature

1. Target Volume Delineation and Treatment Planning for Particle Therapy /
Springer International Publishing Switzerland 2018
<https://link.springer.com/book/10.1007/978-3-319-42478-1#editorsandaffiliations>
2. Gastrointestinal Malignancies / Springer International Publishing AG
2018 <https://link.springer.com/book/10.1007/978-3-319-64900-9#editorsandaffiliations>

Electronic edition:

3. 1. www.pulmonology.ru online resource devoted to pulmonology.
4. 2. <http://www.goldcopd.org> Internet resource dedicated to COPD.
5. 3. www.ginasthma.com Internet resource dedicated to bronchial
asthma.

6. 4. www.elibrary.ru online library of educational journals, periodicals and scientific literature. Collected electronic textbooks, reference and training manuals. Search by specific topics and branches of knowledge.
7. 5. www.cardiosite.ru Internet library of educational publications on cardiology. Collected electronic textbooks, reference and training manuals.

VI. METHODOLOGICAL RECOMMENDATIONS ON THE COMPLETING THE DISCIPLINE

The purpose of the practical classes is to consolidate the knowledge gained by students in lectures, the modeling of practical situations, and also to test the effectiveness of students' independent work.

Practical lesson usually includes interviewing students for seminars. This allows the teacher to recognize the level of students' knowledge of lecture course materials, basic textbooks, knowledge of current problems and the current situation in the modern educational space. Further, the ability of students to apply their theoretical knowledge to solving practical problems is revealed.

It is advisable to begin the preparation for the practical lesson by repeating the material of the lectures. It should be borne in mind that the lecture course is limited in time and does not allow the lecturer to consider in detail all aspects of the issue being studied. Therefore, it is required to independently expand knowledge of both theoretical and practical nature. At the same time, the lectures provide a good guide for the student to search for additional materials, since they set a certain structure and logic for studying a particular question

When working independently, the student should first of all study the material presented in the recommended literature and / or teacher's educational literature and monographs. It is necessary to draw students' attention to the fact that not only basic

textbooks are included in the library list, but also more in-depth sources on each theme of the course. A consistent study of the subject allows the student to form a stable theoretical base.

An important part of the preparation for the practical class is the work of students with scientific and analytical articles that are published in specialized periodicals. They allow you to broaden your horizons and get an idea of current problems, possible ways to solve them and / or trends in the area under study.

The final step of preparing a student for practical training should be the acquaintance with the results of scientific research relevant to each topic.

Lecture - visualization

The lecture is accompanied by the display of tables, slides, which contributes to a better perception of the presented material. Lecture - visualization requires certain skills - verbal presentation of the material must be accompanied and combined with the visual form. The information presented in the form of charts on the board, tables, slides, allows you to formulate problematic issues, and contribute to the development of professional thinking of future professionals.

Lecture - conversation.

Lecture-conversation, or how else in pedagogy this form of education is called "dialogue with the audience," is the most common form of active learning and allows you to involve students in the learning process, as there is direct contact with the teacher audience. Such contact is achieved in the course of the lecture, when students are asked questions of a problem or informational nature, or when I ask students to ask me questions themselves. Questions are offered to the entire audience, and any student can offer his own answer, another can complement it. At the same time, from lecture to lecture I identify more active students and try to activate students who are not participating in the work. This form of lecture allows you to engage students in work, increase their attention, thinking, gain collective experience, learn how to formulate questions. The advantage of the lecture-conversation is that it allows you to draw students' attention to the most important issues of the topic, to determine the content and pace of presentation of educational material.

Lecture - press conference

At the beginning of the lesson, the teacher calls the topic of the lecture and asks students to ask him in writing questions on this topic. Each student must within 2-3 minutes formulate the most interesting questions on the topic of the lecture, write them on a piece of paper and pass the note to the teacher. The teacher within 3-5 minutes sorts the questions according to their semantic content and begins to give a lecture. The presentation of the material is presented in the form of a coherent disclosure of the topic, and not as an answer to each question asked, but during the lecture the corresponding answers are formulated. At the end of the lecture, the teacher conducts a final assessment of the questions, revealing the knowledge and interests of the students.

Practical training in the discipline "Hospital surgery, pediatric surgery"

Practical exercises - a collective form of consideration of educational material. Seminars, which are also one of the main types of practical exercises, intended for in-depth study of the discipline, held interactively. At the workshop on the topic of the seminar, questions are sorted out and then, together with the teacher, they hold a discussion, which is aimed at consolidating the material under discussion, developing skills to debate, develop independence and critical thinking, the students' ability to navigate through large information flows, to develop and defend their own position on problematic issues academic disciplines. As active learning methods are used in practical classes: a press conference, a detailed conversation, dispute. A detailed conversation involves preparing students for each issue of the lesson plan with a list of recommended compulsory and additional literature recommended for all. Reports are prepared by students on pre-proposed topics.

Dispute in the group has several advantages. The dispute may be called by the teacher during the course of the lesson or planned by him in advance. In the course of the controversy, students form resourcefulness, quick thinking reaction.

Press conference. The teacher instructs 3-4 students to prepare short reports. Then one of the participants in this group makes a report. After the report, students ask questions that are answered by the speaker and other members of the expert group.

Based on the questions and answers, a creative discussion takes place with the teacher.

VII. LIST OF INFORMATION TECHNOLOGIES AND SOFTWARE

The location of the computer equipment on which the software is installed, the number of jobs	List of licensed software
Multimedia auditorium Vladivostok Russian island, Ayaks 10, building 25.1, RM. M723 Area of 80.3 m2 (Room for independent work)	Windows Seven enterprice SP3x64 Operating System Microsoft Office Professional Plus 2010 office suite that includes software for working with various types of documents (texts, spreadsheets, databases, etc.); 7Zip 9.20 - free file archiver with a high degree of data compression; ABBYY FineReader 11 - a program for optical character recognition; Adobe Acrobat XI Pro 11.0.00 - software package for creating and viewing electronic publications in PDF; WinDjView 2.0.2 - a program for recognizing and viewing files with the same format DJV and DjVu.

In order to provide special conditions for the education of persons with disabilities all buildings are equipped with ramps, elevators, lifts, specialized places equipped with toilet rooms, information and navigation support signs

LOGISTICS DISCIPLINE

For practical work, as well as for the organization of independent work, students have access to the following laboratory equipment and specialized classrooms that meet the current sanitary and fire regulations, as well as safety requirements during training and scientific and industrial works:

Name of the equipped rooms and rooms for independent work	List of main equipment
690922, Primorsky Krai, Vladivostok, island Russian, the Saperny Peninsula, the village of ayaks, 10, RM. M 516	Class of topographic anatomy and operative surgery Set of surgical large (1 PC.) Package d / disposal CL. B (yellow) with screed, 50*60 cm Needles W 204/3 DS 70 (130) Disposable robe (sleeve: knitted cuff) Disposable gloves, non-sterile (size M) Disposable, non-sterile gloves (size S) Disposable, non-sterile gloves (size L) Pointed scissors (2 PCs.) Spatula neurosurgical 2-sided small (2 PCs .)

	<p>Suture Polyester braided M 3.5 (0) a coil of 10 meters PR-VA Russia</p> <p>Dacron braided white M 3 (2/0) 200 meters tape, PR-VA Russia</p> <p>Functional model of the knee joint "luxury" (1 PC .)</p> <p>Model of knee joint, 12 parts (1 PC.)</p> <p>Posters of the abdominal cavity – plastic) - laminated</p> <p>Chest posters (plastic) - laminated</p> <p>Fake hernia (1 PC .)</p> <p>Dummy brush (collapsible) (1 PC.)</p> <p>Laryngoscope intubation (1 PC.)</p>
Multimedia audience	<p>Monoblock Lenovo C360G-i34164G500UDK; projection Screen Projecta Elpro Electrol, 300x173 cm; Multimedia projector, Mitsubishi FD630U, 4000 ANSI Lumen 1920 x 1080; Flush interface with automatic retracting cables TLS TAM 201 Stan; Avervision CP355AF; lavalier Microphone system UHF band Sennheiser EW 122 G3 composed of a wireless microphone and receiver; Codec of videoconferencing LifeSizeExpress 220 - Codeonly - Non-AES; Network camera Multipix MP-HD718; Two LCD panel, 47", Full HD, LG M4716CCBA; Subsystem of audiocommentary and sound reinforcement; centralized uninterrupted power supply</p>
Reading rooms of the Scientific library of the University open access Fund (building a - 10)	<p>Monoblock HP Loope 400 All-in-One 19.5 in (1600x900), Core i3-4150T, 4GB DDR3-1600 (1x4GB), 1TB HDD 7200 SATA, DVD+/-RW,GigEth,wifi,BT,usb kbd/mse,Win7Pro (64-bit)+Win8.1Pro(64-bit),1-1-1 Wty Speed Internet access 500 Mbps. Jobs for people with disabilities equipped with displays and Braille printers.; equipped with: portable reading devices flatbed texts, scanning and reading machines videovelocity with adjustable color spectrums; increasing electronic loops and ultrasonic marker</p>
<p>690922, Primorsky Krai, Vladivostok, Aleutian street 57</p> <p>690049, Vladivostok, street Russian 55</p> <p>690034, Vladivostok, Voropaeva str., 5</p> <p>690922, Primorsky Krai, Vladivostok, island Russian, the Saperny Peninsula, the village of ayaks, 10</p>	<p>State budgetary institution of health care "Primorsky regional clinical hospital №1»</p> <p>Regional State Autonomous Health Institution " Regional Clinical Hospital №2»;</p> <p>Regional State Autonomous Healthcare Institution "Vladivostok Clinical Hospital № 4»;</p> <p>Medical center of the Federal state Autonomous educational institution of higher education "far Eastern Federal University".</p>

Practical training is conducted on a clinical basis.

Clinical bases:

Medical Center of the Federal State Autonomous Educational Institution
of Higher Professional Education "Far Eastern Federal University";
State Budgetary Institution of Health "Primorsky Regional Oncology Center



THE MINISTRY OF EDUCATION AND SCIENCE OF THE RUSSIAN FEDERATION
Federal State autonomous education institution of higher education
«Far Eastern Federal University»
(FEFU)

SCHOOL OF MEDICINE

**TRAINING AND METHODOLOGICAL SUPPORT
INDEPENDENT WORK OF TRAINEES**

in discipline « **Oncology, radiation therapy** »
Speciality 31.05.01 General Medicine
Full-time training

**Vladivostok
2022**

Independent work includes:

1. Library and homework with educational literature and lecture notes,
2. Preparation for practical exercises,
3. Performance of an individual task
4. Preparation of the essay
5. Preparation for testing and control interview.

The procedure for the performance of independent work by students is determined by the schedule of independent work on the academic discipline.

Schedule of independent work on the academic discipline

N p/p	Date / Deadline	Type of independent work	Estimated time to complete (hour)	Form of control
C semester				
1	1 week	Essay Individual task	10 hours	EO-3-Report, speaking on the practical class
2	1-2 week	Presentation on the essay Presentation of the results of an individual task	10 hours	EO-3-Report, speaking on the practical class
3	2 week	Preparation for pass-fail exam	20 hours	EO-1-Interview PW-1 - Test

Topics of reports and abstracts

For the discipline of 40 hours of independent work, within the framework of these hours 1 abstract is carried out on the proposed topics.

Essays

1. Hodgkin's lymphoma.
2. The place of radiation therapy in the treatment of Hodgkin's lymphoma
3. Non-Hodgkin's Lymphoma.
4. Place of radiation therapy in the treatment.
5. Screening for gastrointestinal cancer.
6. The role of nutrition in the development of malignant neoplasms.
7. Methods of treatment of onomatology of the gastrointestinal tract.
8. Liver cancer

9. Pancreatic cancer
10. Palliative and symptomatic treatment.
11. Markers of malignant neoplasms
12. Locally advanced basal cell carcinoma.
13. Border nevus.
14. Kaposi's sarcoma
15. Cancer of the tongue
16. Cancer of the larynx
17. Methods of diagnosis of oncological diseases
18. Metastases from an unexplained primary focus
19. Diagnosis of spinal cord tumors in the early stages.
20. Atypical forms of lung cancer (Pancosta Cancer).
21. Metastatic lung cancer.
22. The role of smoking in the etiology of lung cancer.
23. Breast cancer in men
24. Breast cancer associated with pregnancy and lactation.
25. Instrumental diagnosis of breast cancer.
26. Organ-preserving treatment for osteosarcoma
27. The problem of phantom pain after amputations

Guidelines for writing and design of the essay

Essay - the creative activity of the student, which reproduces in its structure the research activities to solve theoretical and applied problems in a particular branch of scientific knowledge.

The essay is a model of scientific research. It is an independent work in which a student solves a problem of a theoretical or practical nature, applying the scientific principles and methods of this branch of scientific knowledge. The result of this scientific search can have not only subjective, but also objective scientific novelty, and therefore can be presented for discussion by the scientific community in the

form of a scientific report or a message at a scientific-practical conference, as well as a scientific article.

The abstract is carried out under the direction of the supervisor and involves the acquisition of skills for building business cooperation based on ethical standards of scientific activity. Purposefulness, initiative, disinterested cognitive interest, responsibility for the results of their actions, conscientiousness, competence - personality traits that characterize the subject of research activities corresponding to the ideals and norms of modern science.

The essay is an independent educational and research activity of the student. The supervisor provides advisory assistance and evaluates the process and results of activities. He provides approximate themes of essay, clarifies with the student the problem and theme of research, helps to plan and organize research activities, assigns time and a minimum number of consultations.

Traditionally there was a certain structure of the abstract, the main elements of which in order of their location are the following:

1. Title page.
2. The task.
3. Table of Contents
4. List of symbols, symbols and terms (if necessary).
5. Introduction.
6. The main part.
7. Conclusion.
8. Bibliographic list.
9. Appendixes

The title page lists: educational institution, graduating department, author, scientific advisor, research theme, place and year of the essay.

The name of the essay should be as short as possible and fully comply with its content.

The table of contents reflects the names of the structural parts of the essay and the pages on which they are located. The table of contents should be placed at the beginning of work on one page.

The presence of a detailed introduction - an obligatory requirement for the abstract. Despite the small volume of this structural part, its writing causes considerable difficulties. However, a qualitatively executed introduction is the key to understanding the entire work, which testifies to the professionalism of the author.

Thus, the introduction is a very important part of the essay. The introduction should start with a justification of the relevance of the chosen theme. From how the author of the essay can choose a theme and how correctly he understands and evaluates this theme from the point of view of modernity and social significance, it characterizes his scientific maturity and professional preparedness.

In addition, in the introduction it is necessary to isolate the methodological basis of the essay, to name the authors, whose works constituted the theoretical basis of the study. A review of the literature on the theme should show the authors thorough acquaintance with special literature, his ability to systematize sources, critically examine them, highlight the essential, determine the most important in the current state of knowledge.

The introduction reflects the importance and relevance of the chosen topic, defines the object and subject, purpose and objectives, and the chronological framework of the study.

Introduction should be completed by setting out general conclusions about the scientific and practical significance of the theme, its degree of scrutiny and providing with sources, then hypothesis is proposed.

The main part describes the essence of the problem, reveals the theme, determines the author's position, factual material is given as an argument and for illustrations of put forward provisions. The author needs to demonstrate the ability of sequential presentation of material while its analysis. Preference is given to the main facts, rather than small details.

The essay ends with the final part, which is called "conclusion". This part of the essay synthesizes scientific information, which is accumulated in the main part. This synthesis is a consistent, coherent presentation of the results obtained and their relation to a common goal and specific tasks that were set and formulated in the introduction. It is here that contains the so-called "output" knowledge, which is new in relation to the original knowledge. The conclusion may include suggestions of a practical nature, thereby increasing the value of theoretical materials.

So, in conclusion, the student should a) present the findings of the study; b) reflect the theoretical and practical significance, the novelty of the abstract; c) indicate the possibility of applying the results of the study.

After the conclusion it is accepted to place the bibliographic list of the used literature. This list is one of the essential parts of the essay and reflects the independent creative work of the author.

The list of sources used is placed at the end of the work. It is made or in alphabetical order (by the name of the author or the name of the book), or in the order in which the references appear in the text of the written work. In all cases, the full title of the work, the names of the authors or the editor of the publication are indicated if the writing team involved a group of authors, data on the number of volumes, the name of the city and publisher in which the work was published, year of publication, number of pages.

Guidelines for writing and design of the presentations

For the preparation of the presentation is recommended to use: Power Point, MS Word, Acrobat Reader, LaTeX beamer. The simplest program for creating presentations is Microsoft PowerPoint. For the preparation of the presentation it is necessary to process the information collected when writing the essay.

The sequence of preparation of the presentation:

1. Clearly state the purpose of the presentation.
2. Determine what the presentation format will be: live presentation (then how long it will be) or e-mail (what the presentation context will be).

3. Select the entire content of the presentation and build a logical chain of presentation.

4. Identify key points in the content of the text and highlight them.

5. Determine the types of visualization (pictures) for displaying them on slides in accordance with the logic, purpose and specificity of the material.

6. Choose the design and format the slides (the number of pictures and text, their location, color and size).

7. Check the visual perception of the presentation.

The types of visualization include illustrations, images, charts, tables. The illustration is a representation of a real-life visual. The images - as opposed to illustrations - are a metaphor. Their purpose is to cause an emotion and create an attitude towards it, to influence the audience. With the help of well-designed and presented images, information can remain permanently in a person's memory. The diagram is a visualization of quantitative and qualitative relationships. They are used for convincing data demonstration, for spatial thinking in addition to the logical one. Table - specific, visual and accurate data display. Its main purpose is to structure information, which sometimes facilitates the perception of data by the audience.

Guidelines for writing and design of the practical class

Monitoring the results of independent work is carried out in the course of conducting practical exercises, oral surveys, interviews, solving situational problems, examinations, including through testing.

1. The student should prepare for the practical lesson: repeat the lecture material, read the necessary section on the topic in the textbook.

2. Lesson begins with a quick frontal oral survey on a given topic.

3. In the classroom students work with lecture notes, slides.

4. For classes, you must have a notebook for recording theoretical material, a textbook.

6. At the end of the lesson, homework is given on the new topic and it is proposed to compile tests on the material that has been studied, which were studied in the lesson (summary).
7. The presentations and the activity of the students in the classroom are evaluated by the current assessment.

Guidelines for the preparation of the report

1. Independent student selection of the report topic.
2. Selection of literary sources on the chosen topic from the recommended basic and additional literature offered in the work program of the discipline, as well as work with the resources of the Internet information and telecommunications network specified in the work program.
3. Work with the text of scientific books, textbooks is reduced not only to the reading of the material, it is also necessary to analyze the selected literature, compare the presentation of the material on the topic in different literary sources, pick up the material so that it reveals the topic of the report.
4. The analyzed material is outlined, the most important thing is that it should not be simply a conscientious rewriting of source texts from selected literary sources without any comments and analysis.
5. Based on the analysis and synthesis of literature, the student draws up a plan for the report, on the basis of which the text of the report is prepared.
6. The report should be structured logically, the material is presented in one piece, coherently and consistently, conclusions are drawn. It is desirable that the student could express his opinion on the formulated problem.
7. The report takes 7-10 minutes. The report is told, but not read on paper.

Guidelines for working with literature

1. It is necessary to make an initial list of sources. The basis may be a list of references recommended in the course work program. For convenience, you can create your own file of selected sources (authors' last name, title, publication characteristics) as a working file in a computer. This card index has the advantage, because it allows you to add sources, replace, if necessary, one with another, remove

those that were not relevant topics. The initial list of references can be supplemented using the electronic catalog of the FEFU library, and do not hesitate to contact the library staff for help.

2. Working with literature on one topic or another, one must not only read, but also learn the method of studying it: make a brief summary, algorithm, scheme of the read material, which allows it to be quickly understood and remembered. It is not recommended to literally rewrite the text.

Criteria for evaluation of the oral report

Oral report on the discipline "Hospital surgery, pediatric surgery" is evaluated by the point system: 5, 4, 3.

"5 points" is exposed to a student, if he expressed his opinion on the formulated problem, argued it, having precisely defined its content and components, is able to analyze, summarize the material and draw correct conclusions using basic and additional literature, freely answers questions, which indicates what he knows and owns the material.

"4 points" is given to a student if he presents material on the chosen topic coherently and consistently, gives arguments to prove one or another position in the report, demonstrates the ability to analyze the main and additional literature, but admits some inaccuracies in the wording of concepts.

"3 points" are given to a student if he has conducted an independent analysis of the main and additional literature, however, certain provisions of the report are not always sufficiently argued, mistakes are made in presenting the material and not always fully answering additional questions on the topic of the report.

Criteria for evaluation of the abstract

Evaluation criteria for the abstract: the novelty of the text; the validity of the choice of source; the degree of reveal of the essence of the issue; compliance to the design requirements.

The novelty of the text:

- a) the relevance of the research theme;
- b) novelty and independence in the formulation of the problem, the formulation of a new aspect of the well-known problem;
- c) the ability to work with research, critical literature, to systematize and structure the material;
- d) the appearance of the author's position, independence of assessments and judgments;
- e) stylistic unity of the text.

The degree of disclosure of the essence of the question:

- a) the plan compliance with the theme of the abstract;
- b) compliance of the content to the theme and plan of the essay;
- c) completeness and depth of knowledge on the theme;
- d) the validity of the methods and methods of working with the material;
- e) the ability to generalize, draw conclusions, compare different points of view on one issue (problem).

The validity of the choice of sources: a) evaluation of the used literature: the use of the most famous works on the research topic (including journal publications of recent years, recent statistics, summaries, references, etc.).

Compliance with the design requirements:

- a) the correctness of references to the used literature, references;
- b) assessment of literacy and presentation culture (including spelling, punctuation, stylistic culture), knowledge of terminology;
- c) compliance with the requirements for the volume of the abstract.

The reviewer should clearly state the remark and questions, preferably with references to the work (possible on specific pages of the work), to research and evidence that the author did not take into account.

The reviewer can also indicate whether the student has addressed the theme earlier (essays, written works, creative works, olympiad works, etc.).

The reviewer can also indicate whether the student has addressed the theme earlier (essays, written works, creative works, olympiad works, etc.).

The rating “Excellent” is set if all the requirements for writing and presenting the abstract are fulfilled: the problem is indicated and its relevance is justified, a brief analysis of various points of view on the problem under consideration is made and own position is logically presented, conclusions are formulated, the theme is fully revealed, the volume is met, the requirements are met to the external design, given the correct answers to additional questions.

Evaluation of “Good” - the basic requirements for the essay are met, but there are some shortcomings. In particular, there are inaccuracies in the presentation of the material; there is no logical sequence in the judgments; not sustained volume of the abstract; there are omissions in the design; Additional questions are incomplete answers.

Assessment “Satisfactory” - there are significant deviations from the requirements for essay. In particular, the theme is only partially revealed; factual errors in the content of the abstract or when answering additional questions; there is no output.

The rating of “Unsatisfactory” - the theme of the essay is not revealed, there is a significant lack of understanding of the problem or the student’s abstract is not presented.



THE MINISTRY OF EDUCATION AND SCIENCE OF THE RUSSIAN FEDERATION
Federal State autonomous education institution of higher education
«Far Eastern Federal University»
(FEFU)

SCHOOL OF MEDICINE

FUND ASSESSMENT TOOLS

TRAINING COMPLEX OF DISCIPLINE

«Oncology, radiation therapy»
Educational program
Preparation for 31.05.01. General Medicine
Form of training full-time

Vladivostok
2022

Passport of the Fund Assessment Tools is filled in accordance with the Regulations on the Funds of Evaluation Tools of Educational Programs of Higher Education – Bachelor’s Programs, Specialties, FEFU Magistrates, approved by order of the Rector on 12/05/2015 No. 12-13-850.

Code and name of the competency achievement indicator	The name of the assessment indicator (the result of training in the discipline)
<p>PC-4.4 Able to determine the sequence of volume, content and sequence of diagnostic measures, taking into account the standards of medical care</p>	<p>Knows the scope, content and sequence of diagnostic measures, taking into account the standards of medical care in order to recognize the condition or establish the presence or absence of cancer</p>
	<p>Is able to determine the order of volume, content and sequence of diagnostic measures, taking into account the standards of medical care in order to recognize the condition or establish the presence or absence of cancer</p>
	<p>Possesses the skill of independently determining the sequence, volume, content and sequence of diagnostic measures, taking into account the standards of medical care in order to recognize the condition or establish the presence or absence of cancer</p>
<p>PC-5.2 Able to carry out early diagnosis of diseases of internal organs</p>	<p>Knows the principles of early diagnosis of diseases of internal organs in patients with cancer</p>
	<p>Knows how to draw up an action plan for early diagnosis of diseases of internal organs in patients with cancer</p>
	<p>Possesses the skill of early diagnosis of diseases of internal organs in patients with cancer</p>
<p>PC-5.4 Knows how to use the International Statistical Classification of Diseases and Related Health Problems (ICD) for diagnosis</p>	<p>Knows the necessary information about the development and course of the disease, according to the ICD-X revision</p>
	<p>Able to identify possible etiological factors, apply objective methods of examination of the patient, identify general and specific signs of cancer necessary for diagnosis</p>
	<p>Possesses the formed theoretical and practical skills that allow you to establish a diagnosis according to the ICD</p>
<p>PC-6.2 Knows the procedure for providing palliative care</p>	<p>Knows the diseases that need palliative care.</p>
	<p>Knows how to determine the indications and methods of palliative care in accordance with the procedures for the provision of palliative care.</p>

	Hehas the skill of providing palliative care in accordance with the procedures for providing palliative care.
<p>PC-6.3</p> <p>Is able to draw up a treatment plan for the disease and the patient's condition, taking into account the diagnosis, age of the patient, the clinical picture of the disease in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care</p>	Knows general and special methods of diagnosis and treatment of patients with cancer
	Knows how to apply objective methods of examination of patients with cancer, to identify general and specific signs of diseases; Determine the indications for the treatment of patients with cancer in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocol)
	Possesses the formed theoretical knowledge of drawing up a treatment plan for patients with cancer, taking into account the diagnosis, age of the patient, the clinical picture of the disease in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocol) on the provision of medical care, taking into account the standards of medical care
<p>PC-7.2</p> <p>Is able to prescribe medicines, medical devices and therapeutic nutrition, taking into account the diagnosis, age and clinical picture of the disease in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care</p>	Knows modern medicines, medical devices used to treat patients with cancer in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocol)
	Able to determine indications for prescribing medicines, medical devices and medical nutrition, taking into account the standards of medical care
	Possesses theoretical knowledge about prescribing medicines, medical devices and therapeutic nutrition, taking into account the diagnosis, age of patients with oncological diseases with current procedures for the provision of medical care, clinical recommendations (treatment protocol) on the provision of medical care, taking into account the standards of medical care

CONTROL OF ACHIEVEMENT OF COURSE GOALS

No p/n	Supervised modules / sections / topics of the discipline	Codes and stages of competency formation	Valuation tools - name		
			Current control	Intermediate certification	
1	Module 1 General Issues of Oncology Module 2 Fundamentals of Radiation Therapy Module 3 Private Oncology	GPC-5.3 He is proficient in the algorithm of physical examination, clinical, laboratory, instrumental	Knows	UO-1 Interview	Offset Questions Semester 1 -1-10
			Can	PR-1 Test	PR-1 Test

		diagnostics in solving professional problems	Owns	UO-3 Report, report	UO-2 Colloquium
2	Module 1 General Issues of Oncology Module 2 Fundamentals of Radiation Therapy	GPC-7.1 Able to prescribe treatment based on knowledge of morphological and functional features, physiological conditions and pathological processes in the human body, based on the pharmacodynamics of drugs and the mechanism of action of other therapeutic agents and methods	Knows	UO-1 Interview	Offset Questions Semester 1 -11-36
			Can	PR-1 Test	PR-1 Test
			Owns	UO-3 Report, report	UO-2 Colloquium
3	Module 2 Fundamentals of Radiation Therapy Module 3 Private Oncology »	PC-4.4 Able to determine the sequence of volume, content and sequence of diagnostic measures, taking into account the standards of medical care	Knows	UO-1 Interview	Offset Questions Semester 1 -1-36
			Can	PR-1 Test	PR-1 Test
			Owns	UO-3 Report, report	UO-2 Colloquium
4	Module 2 Fundamentals of Radiation Therapy Module 3 Private Oncology	PC-5.2 Able to carry out early diagnosis of diseases of internal organs	Knows	UO-1 Interview	Offset Questions Semester 1 -15-30
			Can	PR-1 Test	PR-1 Test
			Owns	UO-3 Report, report	UO-2 Colloquium
5	Module 1 General Issues of Oncology Module 2 Fundamentals of Radiation Therapy	PC-5.4 Knows how to use the International Statistical Classification of Diseases and Related Health Problems (ICD) for diagnosis	Knows	UO-1 Interview	Offset Questions Semester 1 -1-10
			Can	PR-1 Test	PR-1 Test
			Owns	UO-3 Report, report	UO-2 Colloquium
6	Module 2 Fundamentals of Radiation Therapy Module 3 Private Oncology »	PC-6.2 Knows the procedure for providing palliative care	Knows	UO-1 Interview	Offset Questions Semester 1 -11-36
			Can	PR-1 Test	PR-1 Test
			Owns	UO-3 Report, report	UO-2 Colloquium

7	Module 2 Fundamentals of Radiation Therapy Module 3 Private Oncology	PC-6.3 Is able to draw up a treatment plan for the disease and the patient's condition, taking into account the diagnosis, age of the patient, the clinical picture of the disease in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care	Knows	UO-1 Interview	Offset Questions Semester 1 -1-36
			Can	PR-1 Test	PR-1 Test
			Owns	UO-3 Report, report	UO-2 Colloquium
8	Module 2 Fundamentals of Radiation Therapy Module 3 Private Oncology	PC-7.2 Is able to prescribe medicines, medical devices and therapeutic nutrition, taking into account the diagnosis, age and clinical picture of the disease in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care	Knows	UO-1 Interview	Offset Questions Semester 1 -15-30
			Can	PR-1 Test	PR-1 Test
			Owns	UO-3 Report, report	UO-2 Colloquium

The scale of assessment the level of formation of competences

Code and Statement of Competence	Stages of competence formation		criteria	Indicators	Points
GPC-5.3 He is proficient in the algorithm of physical examination, clinical, laboratory, instrumental diagnostics in solving professional problems	knows (threshold level)	Algorithm of physical examination, clinical, laboratory, instrumental diagnostics in cancer patients	Knowledge of the algorithm of physical examination, clinical, laboratory, instrumental diagnostics in cancer patients	Formed structured systematic knowledge of the algorithm of physical examination, clinical, laboratory, instrumental diagnostics in cancer patients	65-71
	Able (advanced)	Apply methods of physical examination, clinical, laboratory,	Ability to apply methods of physical examination, clinical, laboratory,	Knows how to apply methods of physical examination, clinical, laboratory,	71-84

		instrumental diagnostics in cancer patients	instrumental diagnostics in cancer patients	instrumental diagnostics in cancer patients	
	Owens (high)	The skill of physical examination, clinical, laboratory, instrumental diagnostics in cancer patients	Skill of physical examination, clinical, laboratory, instrumental diagnostics in cancer patients	Able to confidently conduct physical examination, clinical, laboratory, instrumental diagnostics in cancer patients	85-100
GPC-7.1 Able to prescribe treatment based on knowledge of morphological and functional features, physiological conditions and pathological processes in the human body, based on the pharmacodynamics of drugs and the mechanism of action of other therapeutic agents and methods	knows (threshold level)	Basics of cancer treatment	Knowledge of cancer treatment methods	Formed structured systematic knowledge of cancer treatment methods	65-71
	Able (advanced)	Pick up drugs that can be used to treat cancer patients	Ability to select drugs that can be used to treat cancer patients	Knows how to choose drugs that can be used to treat cancer patients	71-84
	Owens (high)	The skill of drawing up a treatment plan for cancer patients	The skill of drawing up a treatment plan for cancer patients	Able to make a treatment plan for cancer patients	85-100
PC-4.4 Able to determine the sequence of volume, content and sequence of diagnostic measures, taking into account the standards of medical care	knows (threshold level)	Methods for diagnosing oncological diseases	Knowledge of methods for diagnosing cancer	Formed structured systematic knowledge of methods for diagnosing oncological diseases	65-71
	Able (advanced)	Use standards of care to determine the scope, content and sequence of diagnostic measures in cancer patients	Ability to use standards of care to determine the scope, content and sequence of diagnostic measures in cancer patients	Knows how to confidently use the standards of medical care to determine the scope, content and sequence of diagnostic measures in cancer patients	71-84
	Owens (high)	The ability to draw up a plan for the examination of cancer patients using the standards of medical care	Skill in drawing up a plan for the examination of cancer patients using standards of care	Able to draw up a plan for the examination of cancer patients using the standards of medical care	85-100
PC-5.2 Able to carry out early diagnosis of diseases of internal organs	knows (threshold level)	Early risk groups and signs of cancer	Knowledge of risk groups and signs of cancer	Formed structured systematic knowledge of risk groups and signs of cancer	65-71
	Able (advanced)	Draw up a plan for a preventive examination for the	Ability to draw up a plan for preventive examination for the	Knows how, under the control, to draw up a plan for a	71-84

		purpose of early diagnosis of cancer	purpose of early diagnosis of cancer	preventive examination for the purpose of early diagnosis of cancer	
	Owens (high)	The skill of forming risk groups of patients for planning a preventive examination for the purpose of early diagnosis of cancer	The skill of forming risk groups of patients for planning a preventive examination for the purpose of early diagnosis of cancer	Able to form risk groups of patients under control for planning a preventive examination for the purpose of early diagnosis of cancer	85-100
PC-5.4 Knows how to use the International Statistical Classification of Diseases and Related Health Problems (ICD) for diagnosis	knows (threshold level)	The main pathological symptoms and syndromes of oncological diseases, their main forms, principles of clinical classification, principles of diagnosis of cancer.	Knowledge of the main pathological symptoms and syndromes of oncological diseases, their main forms, the principles of clinical classification, the principles of diagnosing cancer.	Formed structured systematic knowledge of the main pathological symptoms and syndromes of oncological diseases, their main forms, principles of clinical classification, principles of diagnosis of cancer.	65-71
	Able (advanced)	Identify pathological symptoms and syndromes of oncological diseases of various localization, formulate a clinical diagnosis of oncological diseases	The ability to identify pathological symptoms and syndromes of oncological diseases of various localization, to formulate a clinical diagnosis of cancer	Ready and able to identify pathological symptoms and syndromes of oncological diseases of various localization, to formulate a clinical diagnosis of oncological diseases	71-84
	Owens (high)	The skill of diagnostic search for symptoms and syndromes characteristic of oncological diseases of various localizations, making a clinical diagnosis of cancer.	The skill of diagnostic search for symptoms and syndromes characteristic of oncological diseases of various localizations, making a clinical diagnosis of oncological diseases	The ability to conduct a diagnostic search for symptoms and syndromes characteristic of oncological diseases of various localizations, making a clinical diagnosis of oncological diseases	85-100
PC-6.2 Knows the procedure for providing palliative care	knows (threshold level)	Documents defining the procedures for the provision of palliative care to cancer patients	Knowledge of documents defining the procedures for providing palliative care to cancer patients	Formed structured systematic knowledge of documents defining the procedures for providing palliative care to cancer patients	65-71
	Able (advanced)	Use standards of care to provide palliative care to cancer patients	Ability to use standards of care to provide palliative care to cancer patients	Knows how to confidently use the standards of care to provide palliative care to cancer patients	71-84
	Owens (high)	The skill of drawing up a plan for the provision of	The skill of drawing up a plan for the provision of palliative	Able to make a plan for the provision of palliative care to cancer patients	85-100

		palliative care to cancer patients	care to cancer patients		
<p>PC-6.3</p> <p>Is able to draw up a treatment plan for the disease and the patient's condition, taking into account the diagnosis, age of the patient, the clinical picture of the disease in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care</p>	knows (threshold level)	Standards, clinical guidelines for the provision of medical care to cancer patients	Knowledge of standards, clinical recommendations on the provision of medical care to cancer patients	Formed structured knowledge of standards, clinical recommendations on the provision of medical care to cancer patients	65-71
	Able (advanced)	Use standards, clinical recommendations on the provision of medical care to cancer patients	Ability to use standards, clinical recommendations on the provision of medical care to cancer patients	Knows how to confidently use standards, clinical recommendations on the provision of medical care to cancer patients	71-84
	Owens (high)	The skill of drawing up a treatment plan for cancer patients using standards, clinical guidelines for the provision of medical care	Skill in drawing up a treatment plan for cancer patients using standards, clinical guidelines for the provision of medical care	Able to draw up a treatment plan for cancer patients using standards, clinical guidelines for the provision of medical care	85-100
<p>PC-7.2</p> <p>Is able to prescribe medicines, medical devices and therapeutic nutrition, taking into account the diagnosis, age and clinical picture of the disease in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care</p>	knows (threshold level)	Medicines, medical devices and therapeutic nutrition used in the treatment of cancer patients	Knowledge of medicines, medical devices and therapeutic nutrition used in the treatment of cancer patients	Formed structured knowledge of medicines, medical devices and therapeutic nutrition used in the treatment of cancer patients	65-71
	Able (advanced)	Select medicines, medical devices and therapeutic nutrition used in the treatment of cancer patients in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care	Ability to select medicines, medical devices and therapeutic nutrition used in the treatment of cancer patients in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care	The ability to confidently select medicines, medical devices and therapeutic nutrition used in the treatment of cancer patients in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care	71-84
	Owens (high)	The ability to use the procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of	Skill in using the procedure for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the	Able to use the procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the	85-100

		medical care, taking into account the standards of medical care, to draw up a plan for the use of medicines, medical devices and therapeutic nutrition, for the treatment of cancer patients	standards of medical care for drawing up a plan for the use of medicines, medical devices and therapeutic nutrition for the treatment of cancer patients	standards of medical care, to draw up a plan for the use of medicines, medical devices and therapeutic nutrition, for the treatment of cancer patients	
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Questions for assessing prior competencies

1. Chemical elements and chemicals. The structure of the atomic nucleus. Protons and neutrons. Isotopes.
2. Radioactivity. The physical basis of radioactivity. Types of radioactive radiation.
3. Sources of penetrating radiation. The use of radioactive radiation in medical practice.
4. Types of tissues in the human body. Their importance in the occurrence of cancer
5. The concept of stem cell. The concept of stem cell differentiation. The difference between blast cells and mature cells.
6. Microcirculation. Exchange capillaries. The mechanism of transcapillary metabolism in tissues
7. Metabolism. The main processes occurring as a result of metabolism. Features of metabolism in hypoxia.
8. Elementary particles. Their varieties. Concept of positrons. The concept of substance annihilation.
9. Immunity cellular and humoral. Its value is in maintaining homeostasis in the body.

10. The concept of histocompatibility. Significance in oncology and maintenance of homeostasis in the body.

Control tests are designed for students studying the course "Oncology, radiation therapy"

Tests are necessary both for the control of knowledge in the process of the current intermediate certification, and for the assessment of knowledge, the result of which can be the setting of credit.

When working with tests, the student is invited to choose one option or a combination of answers from the answers given. At the same time, tests are unequal in complexity. Among the proposed there are tests that contain several options for correct answers. The student must specify all the correct answers.

Tests are designed for both individual and collective decision. They can be used in the process and classroom, and independent work. The selection of tests necessary for the control of knowledge in the process of intermediate certification is carried out by each teacher individually.

The results of the test tasks are assessed by the teacher on a five-point scale for issuing attestation or according to the "test" system - "no test". The mark "excellent" is set with the correct answer to more than 90% of the tests proposed by the teacher. A rating of "good" - with the correct answer to more than 70% of tests. A rating of "satisfactory" - with the correct answer to 50% of the tests proposed by the student.

Examples of test tasks.

1. IN THE ABSENCE OF MORPHOLOGICAL VERIFICATION OF A MALIGNANT NEOPLASM, THE FOLLOWING TREATMENT METHOD SHOULD BE PREFERRED:

- a. **Surgical** +
- b. laser
- c. radiation

- d. combined
- e. Chemotherapeutic

2. THE TERM "OPERABILITY" IS MOST CONSISTENT WITH:

- a. **the patient's condition, which allows the operation to be performed**
+
- b. the patient's condition, which allows performing a radical operation
- c. perform radical surgery
- d. There is no right answer

3. THE MAIN GOAL OF SYMPTOMATIC SURGERY IS:

- a. Removal of the organ affected by the tumor
- b. removal of regional lymphatic metastases of the tumor
- c. **elimination of complications that can lead the patient to death** +
- d. All answers are correct

4. COMPLIANCE WITH THE PRINCIPLES OF ZONING AND CASE WHEN PERFORMING ONCOLOGICAL OPERATIONS IS AIMED AT:

- a. to provide antiproliferatives
- b. **to provide antiproliferatives** +
- c. to reduce the risk of surgical interventions
- 5. for the maximum preservation of the function of the organ

6. FACTORS THAT MAY AFFECT THE SCOPE OF THE OPERATION ARE:

- a. Stages of the disease
- b. Age of the patient
- c. Comorbidities
- d. All answers are correct

7. THE TERM "NEOADJUVANT CHEMOTHERAPY" MEANS:
- a. Postoperative chemotherapy
 - b. prophylactic chemotherapy
 - c. **evaluation of the effectiveness of postoperative chemotherapy according to the degree of drug pathomorphosis to determine further treatment tactics +**
 - d. Preoperative chemotherapy
8. THE TERM "ADJUVANT CHEMOTHERAPY" MEANS:
- a. Postoperative chemotherapy
 - b. **preventive chemotherapy +**
 - c. evaluation of the effectiveness of postoperative chemotherapy according to the degree of drug pathomorphosis to determine further treatment tactics
 - d. Preoperative chemotherapy
9. THE BEST PROGNOSIS OF 5-YEAR SURVIVAL IS FOR PATIENTS WITH LUNG CANCER:
- a. **with stage I diseases +**
 - b. with stage II diseases
 - c. with stage III diseases
 - d. with stage IV diseases:
10. THE LONG-TERM RESULTS OF SURGICAL TREATMENT OF MALIGNANT DISEASES ARE LEAST AFFECTED BY:
- a. type of tumor growth
 - b. Histological structure of the tumor
 - c. the presence of metastases in regional lymph nodes
 - d. the presence of distant metastases

- e. **Age of the patient +**

11. THE MAIN GOAL OF RADICAL RADIATION THERAPY IS:

- a. summing up the maximum possible dose of radiation
- b. decrease in the biological activity of tumor cells
- c. Causing the death of the most sensitive tumor cells
- d. Achieving partial tumor regression
- e. **Achieving complete tumor regression +**

12. THE TERM "SYMPTOMATIC THERAPY" MEANS:

- a. **therapy aimed at eliminating the most painful manifestations of the disease associated with neoplasms and complications of specific therapy +**
- b. therapy aimed at reducing primary tumors
- c. therapy aimed at reducing distant metastases
- d. There is no right answer

13. COMBINED RADIATION THERAPY MEANS:

- a. **the use of two methods of irradiation or two types of radiation +**
- b. splitting the course of radiation therapy
- c. Irradiation with radiomodifiers
- d. radiation in combination with chemotherapy
- e. There is no right answer

14. URGENT HISTOLOGICAL EXAMINATION DURING SURGERY FOR A MALIGNANT NEOPLASM CAN NOT BE PERFORMED IF THE DIAGNOSIS IS CONFIRMED:

- a. Clinical data
- b. Radiographically

- c. CT scan data
- d. **morphological cytological examination +**
- e. endoscopically

15. THE TERM "RESECTABILITY" IS MOST CONSISTENT WITH:

- a. **the patient's condition, which allows the operation to be performed +**
- b. the patient's condition, which allows performing a radical operation
- c. the patient's condition, which allows palliative surgery
- d. There is no right answer

16. ANTIBLASTICA IS A SET OF MEASURES AIMED AT:

- a. **destruction of tumor cells that could get or got into the surgical wound+**
- b. preventing tumor cells from entering the surgical wound
- c. Compliance with asepsis
- d. compliance with antiseptics

17. ABLASTIKA IS A SET OF MEASURES AIMED AT:

- a. destruction of tumor cells that could get or have fallen into the surgical wound
- b. **preventing tumor cells from entering the surgical wound +**
- c. Compliance with asepsis
- d. compliance with antiseptics

18. REMOTE METHODS OF RADIATION THERAPY INCLUDE:

- a. intracavitary
- b. interstitial
- c. Appliqué
- d. **Gamma Therapy +**

19. IN GASTRIC CANCER WITH LIVER METASTASES, THE FOLLOWING IS INDICATED:

- a. Radical treatment
- b. Palliative care
- c. **symptomatic treatment +**

20. THE SENSITIVITY OF THE TUMOR TO CHEMOTHERAPY IS NOT AFFECTED BY:

- a. Histological structure of the tumor
- b. degree of tumor differentiation
- c. Blood supply to the tumor
- d. **Stage of the disease +**

21. AN EXPLORATORY OPERATION IS AN OPERATION IN WHICH

- a. Affected organs are removed according to oncological rules
- b. The affected organ is removed leaving part of the tumor
- c. The affected organ was not removed, but the operation eliminated the severe disorders caused by the tumor
- d. **The operation was limited to ascertaining the inoperability of the process +**

22. THE METHOD OF MORPHOLOGICAL VERIFICATION OF A MALIGNANT NEOPLASM IS:

- a. radioscopy
- b. **tumor biopsy +**
- c. ULTRASOUND
- d. Computer-aided examination
- e. Thermography

23. THE SYMBOL "M" IS USED TO DENOTE:

- a. metastases in distant organs
- b. **metastases to distant groups of lymph nodes**
- c. Both
- d. neither;

24. PROLONGED AND INTENSE INSOLATION CAN LEAD TO:

- a. **Skin Cancer** +
- b. lung cancer
- c. stomach cancer
- d. There is no right answer

25. In oncological diseases, the following is most often observed:

- a. Hypocoagulation
- b. normocoagulation
- c. **hypercoagulability** +
- d. All variants occur with the same frequency

26. KRUTENBERG'S METASTASIS IS LOCALIZED:

- a. in the rectal-vesicular fold
- b. in the navel
- c. **c) in the ovaries**
- d. between the legs of the nodding muscle
- e. in the liver

Clinical cases (examples)

Performed using basic knowledge of the discipline

Criteria for evaluation:

Read - the student solved the situational problem without errors

Not credited - the student could not solve the situational problem

Case 1

A 47-year-old woman addressed a surgeon complaining of an increase in the size of the axillary lymph nodes on the right. When viewed in the right axillary region, isolated dense lymph nodes with limited mobility were found; they were not welded together, measuring up to 1-1.5 cm. During physical examination in the mammary glands, the nodules are not defined. Nipples, areola not changed. Other groups of regional lymph nodes are not enlarged. Signs of inflammation in the right breast was not detected. The patient is directed to a mammogram study, in which a picture of moderate bilateral bilateral fibrocystic mastopathy was found in both mammary glands. Nodal lesions in the breast tissue were not detected. The patient was recommended control tests after 3 months.

1. Is the correct tactic chosen by the surgeon? 2. What additional examinations would you recommend? 3. What oncologic diseases can manifest lesions of axillary lymph nodes?

Case 2

Patient M., 39 years old. Complaints about the presence of tumors on the outer surface of the right shoulder, which has increased in size over the past 2 months. On examination: on the lateral surface of the shoulder there is a nodular formation, 3x4cm in size, on a broad base, with a pronounced vascular component, burgundy-brown, bleeds easily on palpation, painlessly. In the right axillary cavity, palpable lymph nodes increased to 2 cm. Distant metastases were not detected.

What is your presumptive diagnosis?

What is your treatment regimen for this patient?

What are the ways to metastasize this tumor?

Case 3

Patient N., 53 years old. Complains of choking, pain when swallowing, foreign body sensation in the throat, hoarseness. When viewed from the cervical lymph nodes are not enlarged. Fibrolaryngoscopy is performed: the mucosa of the posterior

pharyngeal wall is infiltrated with a tumor, there is ulceration, with instrumental palpation bleeds, vocal folds are fixed. Performed a biopsy. The histological conclusion: adenocarcinoma. When further examination of distant metastases were not detected.

Your diagnosis? What is the expected amount of treatment?

Case 4

The patient of 48 years old complained of swelling, pain of the left breast. Complaints occurred 2 weeks ago, symptoms gradually increased. Body temperature 36.6 C. On examination: The left mammary gland is larger than the left, the skin of the gland is diffusely swollen, hyperemic. There is an increase in local temperature. Palpation moderately painful, diffusely compacted due to edema. Nodal formations are not defined. In the left axillary region, enlarged axillary lymph nodes are determined, of a dense consistency, painless.

Tasks

1. Formulate and justify the presumptive diagnosis. With which diseases it is necessary to conduct a differential diagnosis.
2. What are the necessary additional research?
3. Determine your tactics in relation to the patient, tell us about the principles of treatment.

Case 5

Patient A., 58 years old, mechanic, 40 years old, smokes 45 years. Father died of lung cancer. Complaints of cough with streaks of blood in sputum, pain in the right side, shortness of breath. Lose weight in 3 months at 8 kg. Objectively: peripheral lymph nodes are not enlarged, percussion of the chest is determined by the dullness of percussion sound to the right behind the 4 ribs down; auscultatory: weakened breathing in the lower right. Radiographically: right - homogeneous darkening in the lower parts of the chest, volume reduction of the right lung. Bronchoscopy: the trachea and bronchi are left without pathology, on the right, the lumen of the intermediate bronchus is fissured. Histological examination: squamous cell low-grade cancer. Ultrasound of the abdominal organs: liver, kidneys - without

pathology. Scanning the skeleton: foci of drug accumulation was not detected. CT of the brain - without pathology. Diagnosis? Treatment tactics?

Case 6

Patient G., 45 years old, builder, mother died of stomach cancer. In history for 10 years he was treated for peptic ulcer 12 duodenal ulcer. I lost weight over the past 3 months at 5 kg. Objectively: peripheral lymph nodes are not enlarged. The tongue is lined, the abdomen is soft, moderately painful in the epigastric region. Radiographically: in the lungs without pathology, the esophagus is not changed, in the upper third of the stomach on the lesser curvature there is a filling defect, a violation of the mucosal architectonics. Gastroscopy: esophagus without pathology. On the lesser curvature of the stomach is determined exophytic tumor reaching to the cardiac sphincter. Biopsy. Histological examination: adenocarcinoma. Ultrasound of the abdominal organs: liver, kidney without pathology. The enlarged lymph nodes of the omentum are determined. Diagnosis? Medical tactics?

Case 7

Patient N. 70 years. Complaints of nausea, weight loss, pain in the epigastric region, radiating to the back, aversion to food, over the past two weeks, noted yellow skin, itching. Lose weight in 2 months by 9 kg. A history of chronic pancreatitis. Objectively: the skin and sclera are icteric, peripheral lymph nodes are not enlarged, the abdomen is soft, palpation is available, there is pain in the epigastric region. Ultrasound of the abdominal organs: liver without focal lesions, there is a compression of the common bile duct, the pancreas of a heterogeneous structure, edematous, the Wirsung duct is dilated, in the region of the pancreatic head the volume formation is determined 3x4cm; free fluid in the abdomen; retroperitoneal lymph nodes are not enlarged. CT of the abdominal cavity: a volume is determined in the region of the pancreatic head, measuring 3x4 cm. Histological conclusion: adenocarcinoma. CA marker 19-9 700 U / ml. Diagnosis? Treatment tactics?

Case 8

Patient S. 60 years. Complaints of dull pain in the upper abdomen, loss of appetite, yellowness of the skin. A history of hepatitis B. Objectively: the skin is yellow,

peripheral lymph nodes are not enlarged, the abdomen is soft, increased in volume, hepatomegaly is noted. Ultrasound, CT scan of the abdominal cavity: 4,5,6 segments of the liver takes volume education 4x5 cm in diameter with fuzzy borders, enlarged lymph nodes in the gate of the liver, ascites. Marker: AFP 700 ng / ml. The histological conclusion: hepatocellular carcinoma.

Diagnosis? Treatment tactics?

Case 9

Patient E., 41 years old. Complaints about the presence of tumor formation in the upper third of the left thigh. Objectively: on the lateral surface of the upper third of the left thigh, the tumor-like formation of a dense-elastic consistency, 5x6 cm in size, limited mobility is determined, the skin over it is hyperemic. The patient underwent CT, MRI, ultrasound: the tumor is located in the soft tissues of the middle third of the thigh, up to 5 cm in diameter, there is no germination of the femur, the vascular component is pronounced. An X-ray examination of the chest organs revealed metastases in the right lung.

Your diagnosis? What research should be performed for morphological verification of the tumor? What is the treatment regimen?

Case 10

Patient B., 36 years old. Complains of abdominal pain, mainly in the lumbar region, often occurring at night, swelling of the lower extremities. Examined by a gastroenterologist: pathology of the gastrointestinal tract was not detected. Ultrasound of the abdominal organs revealed enlarged paraaortic lymph nodes, splenomegaly. With CT of the pelvic organs: enlarged ileal lymph nodes. In the blood analysis: ESR 35 mm \ h, lymphopenia.

What is your presumptive diagnosis? What is your treatment regimen for this patient?

Case 11

Patient I.E.D. 60 years, pain in the lower abdomen and bleeding from the genital tract on the background of menopause. Appealed to the gynecologist at the place of residence. Gynecological examination: external genital organs are formed correctly. Female hair growth. The mucosa of the cervix and vagina is not changed. The body of the uterus is not enlarged, mobile, painless. In the field of appendages without features. The arches are deep. Parameters are free. Produced separate diagnostic curettage. The histological conclusion: adenocarcinoma. The operation was performed in the amount of hysterectomy with appendages. The result of histological examination: well-differentiated adenocarcinoma, germinating more? thickness myometrium. A) Formulate a final diagnosis, stage? B) Your recommendations? Metastases were not found in this patient.

Case 12

Patient E., 35 years old, turned to a surgeon in a polyclinic in the community where he complained of swelling in the neck after a sore throat 3 months ago. On examination: the neck area on the right is enlarged due to a painless, sedentary formation. T body in the normal range. The surgeon was diagnosed with cervical lymphadenitis and prescribed antibiotic therapy. However, the effect of antibacterial therapy was not observed for 7 days, the formation in the neck increased and the patient was referred for consultation to the district oncologist.

Questions: 1. What is the tactical mistake of the surgeon polyclinic? 2. What complex of diagnostic measures to clarify the diagnosis can be used by the district oncologist? 3. What diagnosis can be made to a patient at this stage?

Questions to pass-fail exam

1. Etiology and pathogenesis of malignant tumors. Theory of malignant tumors.

2. Mechanisms of carcinogenesis. Habitat and carcinogenesis. The internal environment of the body and carcinogenesis.
3. Classification of tumors. What is the stage and clinical group? TNM system?
4. Morbidity and mortality in malignant tumors. The structure of cancer incidence. The concept of the epidemiology of malignant tumors.
5. Modern ideas about precancerous conditions. Dysplasia.
6. Principles of organization of cancer care. The structure of the oncological service of the Russian Federation.
7. Early diagnosis of malignant neoplasms. Screening programs.
8. Prevention of oncological diseases.
9. General principles of diagnosis of malignant tumors.
10. The role of morphological research methods in oncology. Ways of taking material for cytological and histological studies.
11. Locoregional methods of treatment of malignant neoplasms.
12. Systemic treatment of malignant neoplasms.
13. Principles of palliative treatment of malignant neoplasms.
14. Deontological approaches in dealing with cancer patients.
15. Skin cancer. Epidemiology. Etiopathogenetic factors. Precancerous diseases.
16. Skin cancer. Morphology and clinic. Diagnosis and treatment.
17. Melanoma. Epidemiology. Risk factors. Pigmented nevi. Symptoms of nevus malignancy.
18. Clinic for melanoma, diagnosis and treatment.
19. Thyroid cancer, etiological factors, pathological and anatomical characteristics.
20. Clinic and diagnosis of thyroid cancer.
21. Principles of radical and palliative treatment of thyroid cancer.
22. Malignant soft tissue tumors. Clinic, diagnosis and treatment.
23. Malignant bone tumors. Clinic, diagnosis and treatment.

24. General information about mediastinal tumors. Basics of their diagnosis, clinic and treatment.
25. Epidemiology of lung cancer in Russia, the CIS countries and the industrialized countries of the West, the USA and Canada. Morbidity and mortality in lung cancer.
26. Lung cancer. Etiopathogenetic factors. Morphogenesis and its impact on the tactics and results of treatment.
27. General principles for the diagnosis of lung cancer. Possibilities for early detection and prophylaxis.
28. Lung cancer. Clinical options (central, peripheral, atypical forms).
29. Principles of radical and palliative treatment of lung cancer.
30. Cancer of the esophagus. Epidemiology. Etiological factors. Anatomical growth and metastasis.
31. Features of the clinic, diagnosis and treatment of esophageal cancer.
32. Stomach cancer. Epidemiology. Etiology and pathogenesis.
33. Stomach cancer. Morphological classification. Forms of growth. Features of metastasis.
34. Diagnosis of gastric cancer. Syndrome of small signs.
35. Clinic of gastric cancer, depending on the location of the tumor process and the form of growth.
36. The main types of radical surgery for gastric cancer.
37. Palliative treatment of gastric cancer.
38. Colon cancer. Etiological factors. Precancerous diseases. Pathological characteristic.
39. Colon cancer clinic. Symptoms of cancer of the right and left half of the colon. The main clinical forms.
40. Diagnosis of colon cancer.
41. Principles of radical treatment of colon cancer.
42. Palliative treatment of colon cancer. The concept of cytoreductive operations.

43. Cancer of the rectum. Etiological factors. Precancerous diseases.
44. Pathological anatomy of colorectal cancer, growth forms and features of metastasis.
45. Clinic and diagnosis of rectal cancer.
46. Principles of radical and palliative treatment of colorectal cancer. Рак печени. Этиологические факторы. Клиника, диагностика, лечение.
47. Pancreatic cancer. Clinic, diagnosis, treatment.
48. Breast cancer. Epidemiology. Morbidity and mortality. The possibility of early diagnosis.
49. Pre-cancerous breast diseases.
50. Etiology and pathogenesis of breast cancer.
51. Nodular form of breast cancer, the main symptoms and the mechanism of their formation.
52. Diffuse options for breast cancer.
53. Special options for breast cancer: pedzhoidnoy cancer, occult cancer.
54. Diagnosis of breast cancer. Screening programs.
55. Breast cancer. Loco-regional treatment methods.
56. Breast cancer. Systemic treatment methods.
57. Palliative treatment of breast cancer.
58. Cervical cancer, epidemiology, morbidity and mortality.
59. Etiology of cervical cancer. Pre-cure and background diseases.
60. Pathological anatomy of cervical cancer. Variants of cervical cancer. Ways of metastasis.
61. Diagnosis of cervical cancer. Possibilities of early diagnosis.
62. Clinic for cervical cancer.
63. Principles of radical and palliative treatment of cervical cancer.
64. Etiology of endometrial cancer. Pathogenetic options.
65. Endometrial cancer clinic.
66. Diagnosis of endometrial cancer. Possibilities of early diagnosis.
67. Principles of radical and palliative treatment of endometrial cancer.

68. Benign ovarian tumors.
69. Etiology of ovarian cancer. Precancerous diseases.
70. Pathological anatomy of ovarian cancer.
71. Ovarian cancer clinic.
72. Diagnosis of ovarian cancer.
73. Principles of radical treatment of ovarian cancer.
74. Metastatic ovarian cancer. Are radical approaches possible in the treatment of advanced forms of ovarian cancer?
75. Etiopathogenesis of lymphoproliferative diseases.
76. Clinical and morphological classification of Hodgkin's disease.
77. Clinic of Hodgkin's disease.
78. Diagnosis of Hodgkin's disease.
79. Principles of treatment of Hodgkin's disease.
80. Morphological characteristics of lymphosarcoma.
81. Principles of treatment for lymphosarcoma.
82. Kidney cancer. Etiology. Clinic and diagnosis.
83. Principles of radical and palliative treatment of kidney cancer.
84. Bladder cancer. Predisposing factors.
85. Clinic and diagnosis of bladder cancer.
86. The principles of radical and palliative treatment of bladder cancer.
87. Prostate cancer. Predisposing factors.
88. Clinic, diagnosis and treatment of prostate cancer.
89. The concept of radiation therapy, the main stages of development.
90. The place of radiation therapy in the treatment of cancer patients.
91. The concept of ionizing radiation, the types of AI used in radiation therapy.
92. The concept of dosimetry, the basic dosimetric units.
93. Ionizing radiation sources.
94. The physical effect of ionizing radiation.
95. The biological effect of ionizing radiation.

96. The concept of radio sensitivity. Factors affecting the radiosensitivity of systems: 4 "P" clinical radiobiology.
97. Factors affecting the radiosensitivity of the systems: Bergonier – Tribondo postulate, “oxygen effect”, influence of the cell cycle phase.
98. The concept of radio modification. Physical methods of radio modification and their characteristics.
99. The concept of radio modification. Chemical methods of radio modification and their characteristics.
100. Classification of methods of radiation therapy.
101. Remote radiation therapy: the essence, the classification of methods, the main equipment.
102. Contact radiation therapy: essence, classification of methods, scope.
103. Systemic radiation therapy: the concept, nature, basic indications for use.
104. The structure of the course of radiation therapy: the main stages.
105. Pre-radiation period: clinical topometry, essence, necessary equipment.
106. Pre-radiation period: planning radiotherapy.
107. The ray period, its features. Postradiation period: radiation complications and their classification.
108. Post radiation period: radiation complications and their classification.
109. Early radiation complications: the characteristics of general radiation reactions, the fight against them.
110. Early radiation complications: local radiation reactions from the skin, classification, methods of dealing with them.
111. Early radiation complications: local radiation reactions from the mucous membranes: classification, methods of dealing with them.
112. Late radiation complications: classification.
113. Dose fractionation regimens of radiotherapy.

114. Intracavitary radiotherapy: essence of the method, indications.
115. Interstitial radiation therapy, the essence of the method, indications.
116. MRI diagnosis of diseases of the spine and spinal cord: degenerative changes in the spine, trauma.
117. Radiation therapy application method: essence, indications.