**Ministry of healthcare of the Republic of Kazakhstan**

**The Kazakh Scientific Research Institute of Oncology and Radiology**

 **SILLABUS**

**for students of the residency on the specialty 6R112000 "Radiation therapy"**

**Discipline**

**«Radiation therapy in hospital»**

The amount of teaching hours-2115 hours/47 credits

including:

Practical training-705 hours

Independent work -1410 hours

Form of control: examination

**Almaty, 2017**

The syllabus is compiled according to the Model curriculum, the Residency Educational Program for the specialty "Radiation Therapy", the Instruction Letter No. 8 for the development of educational and methodological documentation in the organizations of the Republic of Kazakhstan, which are preparing for the residency approved by the Republican Center for Innovative Technologies of Medical Education and Science of the Ministry of Health of the Republic of Kazakhstan on April 27 2010 (Protocol No. 4).

Approved at the meetingRadiological Board

(Protocol №7 of "August" 25, 2017)

**Responsible for discipline: DMSTelguziyevaZh.A.**

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**1.** **General information**

1.1 The Kazakh Scientific Research Institute of Oncology and Radiology (address: Almaty, Abai Ave., 91)

1.2 Clinical base (clinical and diagnostic subdivisions of KazNIIOiR): department Day hospital for radiotherapy, Department of Clinical dosimetry and physical and technical support of radiotherapy, Center for Head and Neck Tumors, Neurooncology Center, Mammology Center, Thoracic Oncology Center, Abdominal Oncology Center, Oncogynecology Center, Oncourology Center, Children's Oncology Center, Department of Hemoblastoses, Center for Tumors of Bones and Soft Tissues, Department of Radiation Diagnostics.

1.3 Specialty: 6R112000 "Radiation therapy"

1.4 Discipline: «Radiation therapy in hospital»

1.5 The amount of teaching hours: 2115 hours/47 credits

1.6 Information about the teachers

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **№** | **First and last name** | **Post** | **Academic degree** | **Priority** **interests** |
| 1 | TelguziyevaZhannatAhmetbekovna | Chairman of the Radiological Board | Doctor of Medical Sciences | radiation therapy |
| 2 | SavkhatovaAkmaralDosbolovna | Head of the department Day hospital of radiotherapy | PhD | radiation therapy |
| 3 | IshkininYevgenyIvanovich | Radiation TherapistOncourology Center | Assistant | radiation therapy |

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1.8 Policies and Procedures. The policy of discipline consists in the consistent and purposeful implementation of the educational process. Teachers' requirements for residents are based on general principles of education in higher educational institutions of the Republic of Kazakhstan:

* compulsory clothing: standard medical gown or surgical form; indoor shoes; medical mask (carry)
* strict observance of labor discipline in basic institutions
* active participation in the educational process (preparation of theoretical material, solving situational problems and tests, mastering practical skills); attendance of classes, participation in pre-radial treatment of patients (including stage of ultrasound, CT-topometry), in planning and conducting radiotherapy sessions
* mandatory night duty in accordance with the approved plan
* compulsory maintenance of general and specialized medical documentation
* regular self-improvement (working in the library and with the Internet)
* adherence to the principles of medical ethics and deontology in relation to patients and colleagues
* timely informing mentors and the head of the department about temporary incapacity for work or other reasons for absence from the workplace
* penalties: if you miss 3 lessons for disrespectful reasons, work off in the form of night duty and prepare presentations on the topics of missed classes with subsequent protection. Passes of classes for valid reasons are worked out by self-preparation with protection of presentation on missed topics.

**2 Program**

**2.1 Introduction**

The training of highly qualified medical personnel with modern knowledge, skills and practical skills sufficient to provide qualified medical and diagnostic care is an important state task, the solution of which is possible only in the conditions of continuous postgraduate education. The training of qualified physicians - ray therapists is a complex and urgent problem.

This program includes the amount of modern knowledge, skills and habits of the resident in the main specialty (radiation therapy) on the basis of the principles of evidence-based medicine with the training of qualified radiological medical personnel. The present discipline reflects the possibilities of radiation therapy at the present stage. Questions of the organization of radiotherapy in medical institutions of the Republic of Kazakhstan are presented. The questions of radiotherapy planning and their preparation for radiotherapy, issues of radiotherapy in an independent regimen, or a combination with other methods of antitumor treatment within the medical specialty for radiotherapy are discussed in detail. Indications and contraindications to the use of radiation methods for the treatment of oncological diseases of various localizations, reactions and complications during radiotherapy are indicated. Sanctified indications and contraindications for radiation therapy of non-tumor diseases.

**2.2 The purpose of the discipline** is the acquisition and improvement of special theoretical and practical knowledge on radiation therapy.

* 1. **Tasks of the discipline:**
* To form special knowledge on the physical, chemical, radiobiological basis of radiation therapy and its technical support
* To develop knowledge of nuclear physics and clinical dosimetry, the hygienic fundamentals of radiation safety in radiation therapy
* Mastering the basic methods of radiation therapy and its hardware

**2.4** **Independent work**

|  |  |  |
| --- | --- | --- |
| **№** | **Table of contents** | **Number** **of hours** |
| 1 | Participation in polyclinic reception of patients with registration of directions for radiotherapy in the receiving and advisory department of the Institute | 83 |
| 2 | Participation in clinical analysis of patients | 83 |
| 3 | Stationary reception and supervision of patients with a radiological profile | 83 |
| 4 | Participation in the conduct of medical documentation on the specialty profile (outpatient and inpatient medical records of the patient, filling out radiation cards) | 83 |
| 5 | The study of individual topics with the help of slides and other teaching aids: "Radiation therapy of tumors of the gastrointestinal tract", "Radiation therapy of bone tumors", "Radiation therapy of tumors of soft tissues", "Radiation therapy of malignant tumors of the breast", "Radiation therapy of tumors of the respiratory organs" , "Radiation therapy of malignant tumors of female genital organs", "Radiation therapy of tumors of the urinary system". | 83 |
| 6 | Abstracts: 1) Fundamentals of radiology. 2) The fundamentals of radiotherapy.3) Biological fundamentals of radiation therapy. 4) Acute radiation sickness. 4) Chronic radiation sickness. 5) Features of radiotherapy in pediatrics. 6) Radiation therapy for neoplasm of the breast. 7) Radionuclide diagnosis in cardiology. 8) Radionuclide diagnosis in endocrinology. 9) Positron emission tomography, bases, combination with CT. | 83 |
| 7 | Solution of clinical situational problems in radiotherapy | 83 |
| 8 | Reports of residents on the educational troupe with the subsequent discussion of individual topics on radiotherapy | 83 |
| 9 | Participation in the creation of training sets, albums, tables. | 83 |
| 10 | Preparation of reports, presentations at clinical, pathological and anatomical conferences | 83 |
| 11 | Participation in consultations, consultations in other clinical units | 83 |
| 12 | Participation, and subsequently independent (under the supervision of the curator / teacher) the implementation of pre-radial topometry with the selection of individual fixation facilities for the immobilization of an oncological patient in the implementation of the radiation plan | 83 |
| 13 | Participation in reports and discussions of complex clinical cases with the demonstration of the forthcoming radiotherapy plan at the planning stage | 83 |
| 14 | Visits in the department of radiotherapy | 83 |
| 15 | Work in the library, with the Internet | 83 |
| 16 | Participation in the development of materials in the performance of scientific research in the department | 83 |
| 17 | Forming the resident listener's portfolio | 82 |
|  | **Total hours** | **1410** |

**2.5 Material and technical equipment of the clinical base**

• CT 64-cut Somatom Definition AS with virtual simulation function

• Magnetic resonance imaging (3 Tesla)

• Ultrasound devices of expert class

• Digital X-ray machines

• Radioisotope laboratory

• Linear Accelerators "Сlinac 2100 С/D" and "TrueBeam"

• Remote gamma device "Teragam" with Co60 source

• Brachytherapy apparatus "GammaMed Plus" with source Ir192

• Apparatus for close-focus X-ray therapy "Gulmay"

• X-ray computer simulator "Acuity SSTT"

**2.6** **Recommended literature**

Main literature:

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31. Nuclear medicine. Translated from German by ShlyginojO.e., Borisenko A., 2008

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The syllabus was developed in accordance with the working curriculum, discussed at the meeting of the Scientific Council of KazNIIOiR(Protocol №7from «August» 25, 2017).

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