

To the Accreditation Council
of the Eurasian Center for
Accreditation and Quality Assurance
in Education and Health Care
June 20, 2024

REPORT
OF THE EXTERNAL EXPERT COMMISSION ON THE RESULTS OF THE
EVALUATION OF THE EDUCATIONAL PROGRAM 7R01104 "RADIOLOGY"
OF THE REPUBLICAN STATE ENTERPRISE ON THE RIGHT OF ECONOMIC
MANAGEMENT "NATIONAL SCIENTIFIC CENTER OF
PHTHISIOPULMONOLOGY OF THE REPUBLIC OF KAZAKHSTAN" OF THE
MINISTRY OF HEALTH OF THE REPUBLIC OF KAZAKHSTAN
FOR COMPLIANCE WITH THE STANDARDS FOR ACCREDITATION OF
POSTGRADUATE EDUCATION PROGRAMMES (RESIDENCY SPECIALTY) OF
MEDICAL EDUCATIONAL ORGANIZATIONS

Period of external expert evaluation: June 11-13, 2024

Almaty, 2024

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LIST OF SYMBOLS AND ABBREVIATIONS

Abbreviation	Designation
RSE on the REM «NSCP RK»	Republican State Enterprise on the Right of Economic Management "National Scientific Centre of Phthisiopulmonology of the Republic of Kazakhstan"
SCES	State Compulsory Educational Standard
ECAQA	Eurasian Centre for Accreditation and Quality Assurance in Education and Health Care
MDR TB	Multidrug-resistant tuberculosis
MOH RK	Ministry of Health of the Republic of Kazakhstan
PHC	Primary Health Care
GP	General Practitioners
EMA	Educational and Methodological Association
FSC	Final State Certification
WHO	World Health Organization
PE	Postgraduate Education
CPE	Continuous Professional Education
EP	Educational Program
Academic staff	Academic Staff
LSI	Laws and Statutory Instruments
TC	Typical Curriculum
IWS	Independent Work of a Student
IWST	Independent Work of a Student with a Teacher
EMCD	Educational and Methodological Complex of Disciplines
HEI	Higher Education Institution
UPHE	Unified Portal of Higher Education
GF PIG	Global Fund Grant Project Implementation Group
NCTP	National Centre for Tuberculosis Problems
NJSC “KazNMU”	Non-profit Joint Stock Company "Kazakh National Medical University"
NEI “KRMU”	Non-Governmental Educational Institution "Kazakh-Russian Medical University"
JSC	Joint Stock Company
PA	Public Association
NGO	Non-Governmental Organizations
NCPH	National Centre for Public Health
NPC SEEM	Scientific and Practical Center for Sanitary-Epidemiological Expertise and Monitoring
TBL	Team Based Learning (team learning method)
CBL	Case Based Learning (training based on a clinical case)
BCG	Bacillus Calmette-Guerin
HIV	Human Immunodeficiency Virus
PICO	PICO (patient or population, intervention, comparison, outcomes) - a method for formulating a clinical question in evidence-based medicine
KPI	Key Performance Indicators
OSCE	Objective Structured Clinical Examination
AIS	Automated Information System
CCES	Committee for Control of Education and Science

MSHE RK	Ministry of Science and Higher Education of the Republic of Kazakhstan
STP	Scientific and technical project
GPA	Grade point average
RBP	Republican budget program
ECTS	ECTS (European Credit Transfer and Accumulation System)
DET	Distance education technologies
MRI	Magnetic resonance imaging
CT	Computer tomography
U/S	Ultrasound examination
ECG	Electrocardiography
FG	Fluorography
CPR	Cardiopulmonary resuscitation
ICT	Information and communication technologies
NRTP	National registry of tuberculosis patients
SOP	Standard operating procedures
MEDIA	Mass media
USA	United States of America
XUAR PRC	Xinjiang Uyghur Autonomous Region of the People's Republic of China
EMC	Educational and Methodological Council
AC	Academic Council
SCO	Shanghai Cooperation Organization
Research Institute	Research Institute

1. Composition of the External Expert Commission

In accordance with the ECAQA Order No._ dated 2024, the External Expert Commission (hereinafter referred to as the EEC) was formed to conduct an external evaluation of the educational program of residency in the specialty "7R01104 "Radiology" of the National Scientific Centre of Phthisiopulmonology of the Republic of Kazakhstan in the period 2023-2024 in the following composition:

№	Status as part of the EEC	Full name	Academic degree/title, position, place of work/place of study, year, specialty
1	Chairman	IMASHEVA BAGDAT SAKENOVNA	Doctor of Biological Sciences, Professor, Head of the Science and Education Department of the National Centre for Children's Rehabilitation of the Ministry of Health of the Republic of Tatarstan, Member of the EMA in the field of: "Healthcare", Scientific Editor of the journal "Central Asian Bulletin of Medical Rehabilitation"
2	International Expert	RYZHKIN SERGEY ALEKSANDROVICH	Corresponding Member of the Academy of Sciences of the Republic of Tatarstan, Doctor of Medical Sciences, Head of the Department of Radiology, Radiotherapy, Radiation Hygiene and Radiation Safety named after Academicians A.S. Pavlov and F.G. Krotkov of the Russian Medical Academy of Continuous Professional Education (Moscow, Russian Federation), Scientific Secretary of the Division of Biological and Medical Sciences of the Academy of Sciences of the Republic of Tatarstan, Accredited Expert of the Federal Education and Science Supervision Service
3	Academic Expert	Iztleuov Yerbolat Maratovich	Candidate of Medical Sciences, Head of the Department of Radiology of the NJSC "West Kazakhstan Medical University named after Marat Ospanov", Internal Auditor of the quality management service.
4	Academic Expert	KURMANOVA ALMAGUL MEDEUBAYEVNA	Doctor of Medical Sciences, Professor of the Department of Clinical Specialties of the Higher School of Medicine of the NJSC "Kazakh National University named after Al-Farabi"
5	Academic Expert	RAMAZANOVA SHOLPAN KHAMZAEVNA	Candidate of Medical Sciences, Associate Professor of the Department of Children's Diseases named after N.A. Barlybaeva of the NJSC "Kazakh National Medical University named after S.D. Asfendiyarov" 2
6	Academic Expert	BUGAKOV ANATOLY ALEKSEEVICH	Candidate of Medical Sciences, Associate Professor, Head of the Department of Phthisiology of NJSC "Astana Medical

			University"
7	Employer Expert	UTESHEVA GULMIRA SAYINBAEVNA	Head of the Department of Science and Professional Development of the RSE on the REM "National Centre for Public Health Development" of the Ministry of Health of the Republic of Kazakhstan.
8	Student Expert	TERTYUBAEVA ZHAZIRA ORUMBEOVNA	Director of the Department of Postgraduate Education and Regional Development of the LLP "Scientific Research International Institute of Postgraduate Education".

The EEC report contains a description of the results and the conclusion of the external evaluation of the educational program "7R01104 "Radiology" of the National Scientific Center of Phthiopulmonology of the Republic of Kazakhstan for compliance with the Accreditation Standards of postgraduate education programs (residency specialty) of medical educational organizations and conclusions (hereinafter referred to as the Accreditation Standards), EEC recommendations for further improvement of approaches and conditions for the implementation of the above-mentioned educational program and recommendations for the ECAQA Accreditation Council for Accreditation.

2. General part of the final report

2.1 Presentation of the educational residency program in the specialty "7R01104 "Radiology" of the National Scientific Centre of Phthiopulmonology of the Republic of Kazakhstan

Name of the organization, legal form of ownership, BIN	Name of the educational organization: in the state/Kazakh language – Қазақстан Республикасы Денсаулық сақтау министрлігінің «Қазақстан Республикасы Ұлттық фтизиопульмонология ғылыми орталығы» шаруашылық жүргізу құқығындағы республикалық мемлекеттік кәсіпорны In Russian – Республиканское государственное предприятие на праве хозяйственного ведения "Национальный научный центр фтизиопульмонологии Республики Казахстан" Министерства здравоохранения Республики Казахстан in English - Republican state enterprise with the right of economic management "National Scientific Center of Phthiopulmonology of the Republic of Kazakhstan" Ministry of Healthcare of the Republic of Kazakhstan
Full name of the first director	Full name Head of the department: Adenov Malik Moldabekovich Position: Director Academic degree, academic title: candidate of medical sciences Work phone: +7 (727) 291-86-92 E-mail: malikadenov@mail.ru
Date of establishment	1932
Location and contact details	Country, region/area: Republic of Kazakhstan, Postal index, city, street: 050100, Almaty, street

	Bekhozhina, house 5. Phone: +7 (727) 339-16-30 E-mail: priemnaya@nncf.kz Official website: https://www.nncf.kz
State license for educational activities in residency (date, number)	License for educational activities KZ02LAA00009671, issued by the Committee for Control of Education and Science of the Ministry of Education and Science of the Republic of Kazakhstan on July 4, 2017
Information on branches, subsidiaries (if any)	no
Year of commencement of the accredited educational program (EP)	2024
Duration of study	2 yers
Total number of graduates since the beginning of the EP	<i>none</i>
Number of residents in the EP since the beginning of the current academic year	<i>None</i>
Full-time teachers/part-time workers involved in the implementation of the EP	Total number of teachers - 10, including full-time - 3, part-time - 7 Sedateness, % - 60%
Website Instagram Facebook with active pages	https://www.nncf.kz https://www.instagram.com/nncf_mz_rk/ https://www.facebook.com/nncf.kz

2.2 Information on previous accreditation

Until now, the educational program has not been accredited.

2.3 Brief description of the results of the analysis of the self-assessment report of the educational residency program in the specialty "7R01104 "Radiology" and conclusions on the completeness

The self-assessment report of the educational residency program in the specialty "7R01104 "Radiology" (hereinafter referred to as the report) is presented on 95 pages of the main text, annexes on 28 pages, copies or electronic versions of documents.

The report is characterized by the completeness of answers to all 9 main accreditation standards and criteria, structuring taking into account the recommendations of the Guidelines for conducting self-assessment of the educational program, provided to the educational organization by the accreditation centre - ECAQA, as well as the internal unity of information. The report is accompanied by a cover letter signed by the director, Malik Moldabekovich Adenov, who confirms the accuracy of the quantitative information and data included in the self-assessment report.

The report contains a list of 17 members of the internal self-assessment commission indicating the responsibility of each employee, information about the representative of the organization responsible for conducting the self-assessment of the educational program - Ryskulov Galymzhan Pernebekovich, Acting Deputy Director.

The self-assessment of the educational program was carried out on the basis of Order No. 90-o dated March 6, 2024 "On the establishment of a commission for institutional and specialized accreditation and approval of responsible persons".

All standards provide the actual practice of the NSCP in training residents in the specialty "7R01104 "Radiology", substantiated data, examples of the implementation of the objectives of the educational program, national and international events, methodological support, confirming

compliance with the requirements of accreditation standards. The description in the self-assessment report is sufficiently complete and updated in terms of the number of residents, teachers, administration, information on selection and admission, training results, knowledge and skills assessment results, the material and technical base of the university and clinical sites, contractual obligations with partners (universities, associations, bases), financial information, development and improvement plans, etc.

The report is submitted to the ECAQA in its completed form, with data adjustments based on the above recommendations, written in literate language, the wording for each standard is clear and understandable and described in accordance with the criteria of the standards, tables and figures (diagrams, photographs) contain references in the text and are numbered sequentially.

3. Description of the external expert evaluation

The external expert work within the framework of the evaluation of the educational program 7R01104 "Radiology" was organized in accordance with the Guidelines for the external evaluation of educational organizations and educational programs of the ECAQA / Dates of the visit to the organization: June 11-13, 2024. The sequence of the visit over 3 days is presented in detail in Annex 3 to this report

To obtain objective information, the EEC members used the following methods and their results:

- interviews with management and administrative staff - 23 people;
- study of the website <https://www.nncf.kz/>;
- interviews of 23 employees, 19 teachers, 3 mentors;
- questionnaires of 19 teachers, respectively;
- review of resources in the context of fulfilling accreditation standards: 2 clinical practice/clinical engagement bases were visited, including the Kazakh Research Institute of Oncology and Radiology (KazIOR) and the Scientific Center for Pediatrics and Pediatric Surgery (SCPPS), where training is conducted on educational programs with the participation of 3 part-time teachers;
- study of educational and methodological documents in the amount of 18 units both before the visit to the organization and during the visit to the departments (the list of documents studied is in **Annex 2**).

The staff of the accredited organization ensured the presence of all persons specified in the visit program and in the lists of interview sites and interviews (Table 1).

Table 1 - Information on the number and category of participants in meetings, interviews, conversations with members of the EEC

№	Position	Quantity
1.	Members of the Board	1
2.	Heads of structural divisions	9
3.	Heads of educational institutions	11
4.	Teachers	19
5.	Students	7
6.	Employers	11
7.	Graduates	8
	Total	56

On the last day of the visit to the organization, a meeting of the EEC members was held on the results of the external evaluation. A final discussion of the results of the external evaluation of the educational program, examination of documents, interview results, and questionnaires was held. The EEC members began drafting the final report of the EEC. Generalizations of the external evaluation results were made. The experts individually filled out the "Quality Profile and Criteria for External Evaluation of the Educational Program 7R01104 "Radiology" for Compliance with the ECAQA

Accreditation Standards". The EEC members made no comments. Recommendations for improving the educational program were discussed and the chairman held a final open vote on the recommendations for the ECAQA Accreditation Council.

Comfortable conditions were created for the work of the EEC; access to all necessary information and material resources was organized. The Commission notes the high level of corporate culture of the HEI, the high degree of openness of the team in providing information to the ECAQA members.

According to 100% of teachers, the survey conducted by the ECAQA is useful for developing recommendations for improving key areas of activity of the accredited educational organization.

At the end of the visit, the Chairman of the EEC announced recommendations for the management and employees of the educational organization based on the results of the external evaluation as part of the specialized accreditation.

4. Analysis of compliance with accreditation standards based on the results of the external evaluation of the educational program of residency in the specialty 7R01104 "Radiology"

Standard 1: MISSION AND FINAL OUTCOMES

1.1 Mission statement

NSCP received a State License to engage in educational activities in the direction of "Residency" on July 4, 2017. Also, in 2019, it received a certificate of institutional accreditation for compliance with the standards of additional education.

The mission of the educational program "Radiology" is to provide the healthcare system with highly qualified radiologists capable of identifying, diagnosing various diseases and improving the health of patients using radiological examination methods based on the principles of evidence-based medicine.

NSCP has not previously undergone specialized accreditation in the specialty "Radiology" and does not have a contingent of residency students.

In order to systematize the process of managing educational activities, in 2007, a Training Center was created, the staff of which consists of the head of the training center, deputy head, manager and methodologist. The composition of the teachers of the NSCP RK is updated and approved annually by the order of the director of the NSCP RK. To date, the composition of the teachers in the specialty "Radiology" is represented by: 2 candidates of medical sciences.

All participants in the educational process know the mission of the educational program, took part in the formation of proposals for formulating the mission, while the mission is communicated to potential residents through the website, social networks, information letters to medical organizations. During the visit to the educational organization's departments, the experts noted the educational organization's strengths in relation to the accredited educational program, including: 1. Strong teaching staff with experience in educational, scientific and clinical activities. 2. A powerful clinical base for conducting diagnostic studies, as well as strong partner organizations for mastering additional disciplines of the EP.

The NSCP has departments that are directly related to the educational program "7R01104 "Radiology".

The results of the documentation study demonstrate that the mission of the organization and the mission of the educational program correspond to reality, and the educational process is built in accordance with the State Compulsory Educational Standard and current Laws and Statutory Instruments (LSI) in postgraduate education and healthcare.

The educational organization conducts training for residents in the following clinical sites and departments: NSCP, KazIOR, Scientific Center of Pediatrics and Pediatric Surgery, where it provides a patient-oriented approach through the JCI system. The educational organization pays due attention to the safety and autonomy of patients by means of JCI standards.

Residents are planned to be trained at the Department of Radiation, Functional and Instrumental Diagnostics of the NSCP of the RK, and at the Department of KazIOR. Residents are provided with

full access to patients in the above-mentioned clinical sites to implement patient-oriented training. In this approach to training, the clinical mentor is given the role of an observer coordinator, and the resident directly contacts the patient and carries out all medical procedures under the supervision of mentors. In order to implement the mentoring principle at the level of the NSCP of the RK, the composition of clinical mentors is approved in agreement with the clinical site.

Patient safety and autonomy are supposed to be implemented through mentors monitoring the practical activities of residents, briefing students and teachers on infection safety, compliance with safety precautions, and obtaining informed consent from the patient for medical procedures to be performed by residency students.

Also, before undergoing practical training, residency students' health records are checked for examination and absence of diseases.

Residents who actively participate in the decision-making process to improve the educational process will have an advantage when recruiting students for academic mobility. Also, these residents will have the advantage of studying in additional education courses in their specialty.

Participation in academic events of residents is provided if the topic of the organized events corresponds to the working curriculum and the formed competencies of residents. In this case, upon agreement with the teacher and the head of the scientific and educational center (SEC), residents can attend these events under the supervision of the teacher.

1.2 Professionalism and professional autonomy

In accordance with the order of the Minister of Health of the Republic of Kazakhstan dated July 4, 2022 No RK MOH-63 "On approval of state compulsory standards for levels of education in the field of healthcare" and the order of the Minister of Science and Higher Education of the Republic of Kazakhstan dated July 20, 2022 No. 2 "On approval of state compulsory standards of higher and postgraduate education" OHPE, research institutes / scientific centres independently develop educational programs in accordance with the requirements of the standard and TC for residency specialties. In accordance with the order of the Minister of Health of the Republic of Kazakhstan dated December 15, 2020 No RK MOH-270/2020 "On approval of the rules for placing a state order, admission to training and training of medical personnel in residency", admission to the residency of educational organizations is carried out on a competitive basis based on the results of entrance examinations, the procedure for which educational organizations approve and conduct independently.

The selection of teachers is carried out by the educational organization independently in accordance with the Labour Code and the Personnel Policy of the NSCP.

All of the above LSI determine the independence of the NSCP in making decisions in such key areas as the development of educational programs, the selection and admission of students and listeners, the selection / admission of teachers, employment conditions and the allocation of resources.

At the NSCP, the implementation of the policy on the development of educational programs, the admission of residency students and additional education is carried out by the National Training Centre. Review and approval of residency educational programs is carried out at the level of the Academic Council of the NSCP in accordance with the Standard for the Development and Approval of Educational Programs. Review and approval of educational programs of additional education is carried out at the level of the educational and methodological council.

The HR department of the NSCP is responsible for the selection of teachers and for the implementation of personnel policy in general.

The powers of these structural divisions and advisory bodies are defined by the Regulations of the National Training Centre, the Regulations of the HR department and the Regulations of the Academic Council of the NSCP.

The surveyed teachers (21 questions of the questionnaire) also answered that they are satisfied with the organization of work and the workplace in this educational organization. The experts determined that the organization has a healthy microclimate, since the manager is quite accessible to both residents and employees, and responds promptly to applications. In the questionnaire, the teachers are satisfied with the microclimate of the organization. In the educational organization, the teacher has the opportunity to realize himself as a professional in his specialty.

1.3 Final learning outcomes

The NSCP defines the final learning outcomes in accordance with the professional standard for the specialty "Radiology" and the order of the Minister of Health of the Republic of Kazakhstan dated July 4, 2022 No RK MOH-63 "On approval of state mandatory standards for levels of education in the field of healthcare".

The educational program of residency in the specialty "Radiology" forms the following learning outcomes:

- 1) is able to conduct radiological studies of organs and systems of the human body (radiology, ultrasound diagnostics, computed tomography, magnetic resonance imaging, nuclear medicine) in adults and children
- 2) is able to interpret the results of radiological studies (radiology, ultrasound diagnostics, computed tomography, magnetic resonance imaging, nuclear medicine) in adults and children;
- 3) is able to ensure and comply with the requirement of radiation safety in radiological studies;
- 4) is able to provide emergency medical care during radiological examinations, in accordance with clinical protocols and standards of medical care;
- 5) is able to organize and conduct screening studies, educational, upbringing and propaganda activities aimed at disease prevention, the formation of a healthy lifestyle, the preservation and promotion of health;
- 6) is able to interact effectively with patients, their relatives or legal representatives;
- 7) is able to collaborate with other specialists and health services on issues of diagnosis, treatment, rehabilitation, ensuring an integrated approach to preventing the spread of infections and the formation of a healthy lifestyle;
- 8) is able to keep records and documentation in medical practice;
- 9) is able to act within the legal and organizational framework of the healthcare system of the Republic of Kazakhstan in his specialty;
- 10) is able to formulate adequate research questions, critically evaluate professional literature, effectively use international databases in his daily activities, participate in the work of a research team;
- 11) is able to study independently and train other members of the professional team, actively participate in discussions, conferences and other forms of continuous professional development.

Continuity between the basic and postgraduate education programs is ensured by the development and approval of pre- and post-requisites for each residency specialty. This allows harmonizing the volume, content, and sequence of studying the educational program between different levels of education. Pre- and post-requisites are analysed and approved during the development of the educational program at a meeting of the educational and methodological council of the NSCP RK.

A prerequisite for admission to residency in the specialty "Radiology" is that the applicant has the qualification of "doctor" and has completed the following disciplines in the amount of at least 3 credits:

1. A graduate in the specialty "Therapy" must complete the discipline "Pediatrics";
2. A graduate in the specialty "Paediatrics" must complete the discipline "Internal Medicine".

The final learning outcomes of residents are regulated by the educational program, syllabi of disciplines. Educational programs, syllabi are developed by teachers of the NSCP RK, reviewed at the level of the educational-methodical and academic council. Before review at the level of the educational-methodical and academic council, all educational programs and syllabi undergo a procedure of internal and external review.

Informing residents about the final learning outcomes is carried out by teachers. In addition, in order to inform the main and other stakeholders about the learning outcomes of residents, the head of the educational program makes a presentation at the annual international conference on combating tuberculosis. In this way, all stakeholders are informed.

1.4 Participation in the formulation of the mission and final results

The main and other stakeholders participate in the development of the mission and final learning outcomes for the residency program "Radiology". Before developing the mission and final learning outcomes for the residency program "Radiology", the main stakeholders in the development of the

mission and final learning outcomes, the degree of their influence, capabilities and contribution were identified (table to standard 1, paragraph 1.4.1).

While developing the mission and final outcomes of postgraduate educational programs, the NSCP RK involves key and other stakeholders by considering the issue of program approval at a meeting of the Academic Council of the NSCP RK. The Academic Council consists of the administration and staff of the NSCP RK, representatives of the Association of Phthisiopulmonologists and representatives of employees of universities (KazNMU and KRMU).

The process of developing the mission and final results of postgraduate programs consists of three stages:

1. Development of the mission and final outcomes of educational programs by specialized specialists of the NSCP RK
2. Consideration of the mission and final outcomes of educational programs at a meeting of the educational and methodological council
3. Consideration and approval of the mission and final outcomes of educational programs at a meeting of the Academic Council of the NSCP (additional education courses are considered and approved at a meeting of the EMA of Healthcare).

Due to the absence of students in postgraduate education programs, residents were not included in the development and approval of educational programs. After the admission of residents, it is planned to include the chairman of the residents' council in the educational and methodological and academic council, who will participate in the development and approval of educational and methodological documentation.

Conclusions of the EEC on the criteria. Comply out of 14 standards (including 9 basic, 5 improvement standards): fully - 14.

Standard 2: EDUCATIONAL PROGRAMME

2.1 Framework parameters of the postgraduate medical education program

The final outcomes and content of the educational programs of the residency of the NSCP RK were developed in accordance with the Order of the Minister of Health of the Republic of Kazakhstan dated July 4, 2022 No RK MOH -63 "On approval of state mandatory standards for levels of education in the field of healthcare", and the structure of the residency programs was developed in accordance with the Order of the Minister of Health of the Republic of Kazakhstan dated January 9, 2023 No. 4 "On approval of standard curricula in medical and pharmaceutical specialties". The developed educational programs undergo internal and external examination for compliance with LSI and are approved by the Academic Council of the NSCP RK. After approval, the educational programs are posted in the Register of Educational Programs, where they also undergo examination for compliance with LSI.

NSCP RK has a State License for educational activities in the direction of "Residency" on July 4, 2017 (link: <https://www.nncf.kz/deyatelnost-nncf-mz-rk>). Also, in 2019, it received a certificate of institutional accreditation for compliance with the standards of additional education (link: <https://www.nncf.kz/informaciya-o-centre>).

In-depth study of disciplines by residents is achieved through the choice of elective disciplines, academic mobility in other universities of the Republic of Kazakhstan, participation in domestic and international conferences.

The qualifications obtained as a result of mastering the educational programs of the residency of the NSCP RK correspond to the level of the industry qualification framework - 7, therefore, correspond to the structure of qualifications in the European Higher Education Area.

Residency students, teachers and other interested parties receive an explanation of the qualifications for the residency programs by contacting the training centre of the NSCP RK, visiting the NSCP RK website, visiting the EHEA website, where educational programs of all levels are posted.

Residency graduates in the specialty "Radiology" receive a diploma indicating the qualification:
[ECAQA_ Eurasian Center for Accreditation and Quality Assurance in Education and Healthcare](#)

radiologist.

Quality principles for the management of the NSCP RK are a set of fundamental requirements for educational activities to meet the needs of consumers in educational services.

While implementing the educational residency program in the specialty "Radiology", the NSCP RK adheres to the following principles:

1. Consumer focus;
2. Leadership;
3. Employee involvement;
4. Process approach to management;
5. Continuous renewal;
6. Fact-based decision making;
7. Mutually beneficial relationships with stakeholders.

Ethical standards are the values and rules of ethics that employees of organizations must adhere to in their activities. NSCP adheres to the "Code of Honour for Teachers", "Code of Honour for Residents and Academic Integrity". The Code of Honour for Teachers of NSCP RK describes the ethical standards of behaviour of teachers of NSCP RK.

Mentoring and consulting of residents will be carried out in accordance with the regulation on mentoring. In order to implement the clinical practice of residents, NSCP RK concludes an agreement on joint activities with clinical bases. The teacher/tutor organizes clinical practice, instructs, monitors and participates together with the mentor in assessing the knowledge, skills and abilities of residency students.

The composition of clinical mentors is formed from among practicing doctors with at least 5 years of experience in practical healthcare in the specialty being trained. The workload of one mentor is up to five residency students. The composition of mentors and scientific supervisors of residents of the NSCP RK for 2024 includes 3 employees of the NSCP RK, including 2 mentors and 2 scientific supervisors. All employees have more than 10 years of experience in practical healthcare in a certain specialty (Table B to Standard 5, paragraph 5.1.2).

The effectiveness of the mentors' work will be assessed through a survey of students of the NSCP RK residency.

The principle of equality in education is ensuring equal opportunities for all students to receive educational services. One of the mechanisms of the NSCP RK to ensure equality of residents, rapid adaptation of residents to the conditions of the NSCP RK is the appointment of a mentor adviser for each residency student. This will ensure equal opportunities for all residents.

In addition, the NSCP RK plans to gradually create opportunities for inclusive education of residents. As part of the formation of legal competencies, residents will be prepared for various relationships with patients, including taking into account the gender, cultural and religious characteristics of patients.

Violations of the principle of equality of residents, oppression based on race, gender, and nationality will be considered by a special commission.

2.2 Scientific method

Skills in scientific approaches are formed in residency students both within the framework of the disciplines of the compulsory component and the elective component of the educational program. Within the framework of the disciplines of the compulsory component, a residency student conducts scientific research, based on the results of which he publishes articles in scientific journals. The student's work, carried out according to scientific methodology, is checked and evaluated by the Training Centre during the session. In the elective component, residents are offered a discipline to develop skills in evidence-based medicine.

In addition, based on the experience of doctors of the NSCP RK, clinical situations have been prepared for the solution of which residents will have to search for scientific literature in databases and draw certain conclusions. Students of the educational program of residency in the specialty "Radiology" will be involved in the implementation of scientific and technical projects carried out on the basis of the NSCP RK.

The scientific component of the disciplines of the educational program of residency is carried out in the process of residents' practical training at clinical sites, during which residents collect information and data they need to write a selected research topic. The research topic is selected in consultation with mentors and approved at the level of the training centre.

The system of clinical mentoring, the rights and responsibilities of mentors are defined in the regulation on clinical mentoring.

Information on rights and responsibilities is communicated to residents by teachers and mentors through familiarization with educational and methodological documentation, by employees of the national training centre through familiarization with the academic policy.

The teaching methods used in the process of training residents are defined in the regulation on methods of teaching and assessing the knowledge of residents. According to the regulations, the following teaching methods are used in the NSCP RK:

1. Lecture
2. Debates and discussions
3. Case-study
4. PBL
5. CBL
6. TBL
7. Bedside teaching.

In order to ensure the quality of education, according to internal regulatory documents, no more than 5 residents are provided under the supervision of one resident.

The educational program of the residency in the specialty "Radiology" includes the discipline "Evidence-based medicine in radiology". The discipline consists of 4 credits and is a discipline of the elective component. Teaching in this discipline is carried out by teachers who have completed a master's degree in the scientific and pedagogical direction.

The discipline includes special assignments for students in the form of clinical questions. In order to find solutions to clinical problems, residency students need to formulate questions on PICO, search scientific databases, analyse information, and formulate conclusions. The results of the work are submitted as a project.

The discipline includes the following topics: "Principles and methods of clinical epidemiology", "The concept of the design of scientific research in the field of radiology; Classification of scientific research in the field of radiology", "Design of a clinical study. The pyramid of clinical studies", "Searching for information on the Internet using filters of evidence-based Medicine (PUBMED, Cochranlibrary). Boolean terminology."

2.3 Structure, content, and duration of the residency program

The educational program of the residency in the specialty "Radiology" consists of a cycle of major disciplines of the mandatory component in the amount of 134 credits, an elective component in the amount of 4 credits, and a final certification in the amount of 2 credits. The major disciplines of the mandatory component are regulated by the order of the Minister of Health of the Republic of Kazakhstan dated January 9, 2023 No. 4 "On approval of standard curricula for medical and pharmaceutical specialties".

The content of the program is distinguished by its integration, which is ensured by the presence of clinical situations and teachers from practical healthcare.

The structure of the disciplines consists of 10% classroom work (theoretical part), 75% independent work of the resident under the guidance of a clinical mentor (practical part). Also, within the framework of the educational program of residency in the specialty "Radiology" at least 11 credits of clinical practice are provided.

The content of the disciplines of the educational program consists of topics aimed at studying radiological diagnostic methods and interpreting their results. Teaching methods used in the process of training residents such as PBL, CBL, inter-professional training, bedside training contribute to the formation of such skills as decision-making, communication skills, responsibility for one's own health.

In forming the topics of the disciplines of the educational program, modern scientific

achievements in radiological methods of diagnosing various diseases, updated clinical protocols and LSI governing activities in radiology were used. The educational program of residency in the specialty "Radiology" was approved at the meeting of the Academic Council of the NSCP No. 4 on December 13, 2023.

The organization has its own clinical base, and also concluded agreements with medical organizations).

The content of educational programs corresponds to the needs of practical healthcare and is compiled according to the learning outcomes of the educational program, taking into account the functions and skills reflected in the professional standard Radiology (approved on January 25, 2024).

The main areas of research in the field of radiology at the NSCP will be:

1. Radiation diagnostic methods in phthisiology
2. Radiation diagnostic methods of respiratory organs
3. Radiation diagnostic methods of oncological diseases

The above specifics of scientific research show that the main goal of scientific and technical projects is to improve diagnostic methods in phthisiopulmonology, differential diagnostics of tuberculosis and respiratory diseases with oncological diseases.

The scientific component of the educational program is formed from research work, which the resident will conduct under the guidance of a mentor and an elective component of the program.

2.4 Organization of training and the relationship between postgraduate medical education and the provision of medical care

The total duration of the residency educational program is determined by the State Compulsory Educational Standard and the TC in healthcare specialties and is 140 credits/2 years of study. The educational program includes 134 credits of core disciplines of the compulsory component, 4 credits of disciplines of the elective component, 2 credits of end-of-course assessment.

While forming the content of the educational program, such learning outcomes as the ability to diagnose and effectively treat tuberculosis, ensure patient safety, communicate with colleagues, patients and their relatives, study and apply in practice LSI in the field of radiology, conduct scientific research and speak at meetings and conferences were taken into account.

As part of the educational program, there is an opportunity to practice outside the NSCP RK.

The educational program of residency in the specialty "Radiology" consists of a mandatory and an elective component. The mandatory component includes the following disciplines:

1. Radiology – 30 credits;
2. Pediatric radiology – 12 credits;
3. Radiology in mammology – 10 credits;
4. Ultrasound diagnostics – 20 credits;
5. Computed tomography – 20 credits;
6. Nuclear medicine – 20 credits;
7. Comprehensive radiation diagnostics of diseases of organs and systems – 12 credits

The elective component of the educational program consists of the following disciplines:

1. Differential diagnostics of oncological diseases – 4 credits;
2. Differential diagnostics in phthisiology – 4 credits;
3. Evidence-based medicine in radiology – 4 credits.

The disciplines of the component selection are aimed at ensuring patient safety, as well as the use of modern components.

All disciplines have prerequisites that ensure the rotation of the major disciplines and establish the procedure for their training.

The structure of the discipline consists of 10% classroom work, 75% independent work of the resident under the guidance of a leading clinical mentor, 15% independent work.

Today, the healthcare system has a high demand for radiation diagnostics doctors. According to the report of the Observatory of Human Resources for Healthcare of the Republic of Kazakhstan (2023), the need for phthisiologists and radiologists from 2019 to 2021 has a change in numbers:

Names of specialties	2019	2020	2021
Radiology doctors	254	291	388
Phthisiologists	84	102	124

The peculiarity of the educational program Radiology on the basis of the NSCP RK is that the teachers are practicing doctors, there is an archive of X-ray images. In addition, in order to ensure access to high-tech equipment, the NSCP RK has concluded an agreement with KazIOR and in the future plans to cooperate with this organization in the field of postgraduate education and science.

The educational residency program in the specialty "Radiology" consists of disciplines in general radiological diagnostic methods (X-ray diagnostics of adults and children, comprehensive radiation diagnostics, computer diagnostics, magnetic resonance diagnostics) and disciplines that affect oncology (radiology in mammology, nuclear medicine, differential diagnostics of oncology). The disciplines of X-ray diagnostics of adults and children, comprehensive radiation diagnostics, computer diagnostics, magnetic resonance diagnostics are implemented on the basis of the NSCPF RK, the disciplines of radiology in mammology, nuclear medicine, differential diagnostics of oncological diseases are developing in the country with KazIOR.

Training of coordinators in the specialty "Radiology" will be carried out on the terms of the NSCP RK and KazIOR. All organizations are accredited in accordance with the standards of quality of medical care. Coordination of training and quality control will be ensured by the management of the training centers, teachers, mentors by concluding contracts.

Conclusions of the EEC on the criteria. Comply with 22 standards (including 19 basic, 3 improvement standards): fully - 22.

Standard 3: ASSESSMENT OF RESIDENTS

1.1 Methods of assessment

The policy of knowledge and skills of residency students is carried out in accordance with the Academic Policy of the NSCPH RK. In addition, the policy of knowledge and skills assessment is reflected in the syllabus of the disciplinary educational program of residency in the specialty "Radiology". Students are familiarized with the political assessment of knowledge and skills at the beginning of the training. After familiarization, students sign a sheet of familiarization with the Syllabus.

The academic policy is developed by specialists of the Training Centre, submitted for consideration to the meeting of the Academic Council and approved by the order of the Director of the NSCP RK.

The composition of the educational and methodological and Academic Council of the NSCP RK consists of specialists in the specialties of "Phthisiology" and "Radiology".

The syllabi of the discipline are developed by the teachers of the NSCP RK; research is conducted and held regularly on the basis of educational and methodological meetings. The Training Centre and the faculty of the NSCP RK are responsible for the implementation of the knowledge and skills assessment policy.

Upon completion of the entire duration of training, the end-of-course assessment will be carried out in accordance with the Order of the Minister of Health of the Republic of Kazakhstan dated December 11, 2020 No RK MOH-249/2020 "On approval of the rules for assessing the knowledge and skills of students, assessing the professional training of graduates of educational programs in the field of health care and specialization". The end-of-course assessment is carried out in two stages: 1 testing - to assess the theoretical knowledge of the student and 2 exam using simulation technologies and mannequins - to assess clinical skills.

Current monitoring of academic performance on the topic/section of the academic discipline is [ECAQA_ Eurasian Center for Accreditation and Quality Assurance in Education and Healthcare](#) 15

posted in the electronic journal by the Teacher according to the approved schedule.

Monitoring of the assignment of grades for current monitoring, midterm monitoring and final monitoring is carried out by the Registrar's Office.

The assessment of the admission rating is made up of the assessments of the current and midterm monitoring in classroom and extracurricular classes. The assessment of the admission rating is carried out by the teacher of the discipline.

To ensure the transparency of the assessment for each discipline, assessment sheets are developed (Annex 1-5 to this policy). Assessment sheets are developed by the teacher, reviewed and approved at a meeting of the educational and methodological council of the NSCP RK.

Current monitoring assessments are a set of assessments for the period of study in a certain discipline and constitute 40% of the admission rating assessment.

Midterm monitoring constitutes 60% of the admission rating assessment. If the admission rating is less than 50%, the residency student is not allowed to take the final exam in the discipline and, for an additional fee, takes the course again in the summer semester or in the repeat year of study.

Midterm control is conducted in the form of an exam by an examiner after completing training in the discipline. Midterm control consists of 2 parts: theoretical and practical. An independent examiner determined by the NTC is involved in conducting midterm control.

Before being introduced into the educational process, control and measuring tools are tested for validity and reliability among teachers using the expert assessment method.

The following checklists for assessing the skills of students have been developed at the NSCP of the Republic of Kazakhstan:

1. Clinical Case Analysis Assessment Sheet
2. Assessment Sheet for Performing a Practical Skill (DOPS)
3. Duty Assessment Sheet
4. Mini-Clinical Exam Assessment Sheet.

1.2 Relationship between assessment and training

The management of the NSCP RK considers the results of training of residents, methods of assessment and methods of training as interrelated components of the educational process. Based on the formed results of training for each discipline, methods of training of residents and methods of assessment are formed.

Table. Relationship between the results of training, methods of training and assessment of residents in the educational program "Radiology"

№	Results of training	Methods of training	Assessment methods
1	To be able to perform radiological examinations (radiology, ultrasound diagnostics, computed tomography, magnetic resonance imaging, nuclear medicine) and interpret their results in adults and children, select optimal radiological	Practical classes PBL, CBL Bedside training	Oral questioning, test Clinical case assessment OSCE, mini-clinical exam, duty assessment

	examination methods in accordance with the clinical task, justify additional radiological examinations, prepare the patient for radiological examination, provide emergency care to adults and children during radiological examinations, compare the results of radiological examinations.		
2	To be able to maintain medical records	Practical classes Training at the patient's bedside	Oral survey, test OSCE, mini-clinical exam, duty assessment
3	To be able to act within the legal and organizational framework of the healthcare system of the Republic of Kazakhstan in his/her specialty;	Practical classes PBL, CBL Training at the patient's bedside Interprofessional training	Oral survey, test Clinical case assessment OSCE, mini-clinical exam, duty assessment Communication skills assessment
4	To be able to communicate with colleagues, patients and their relatives;	Training at the patient's bedside Inter-professional training	OSCE, mini-clinical exam, duty assessment Communication skills assessment
5	To be able to formulate adequate research questions, critically evaluate professional literature, effectively use international databases in his/her daily activities, participate in the work of a research team;	Practical classes Participation in scientific projects, conferences	PICO question formulation skills Assessment of skills in searching for information in databases Portfolio assessment
6	To be able to study independently and train other members of a professional team, actively participate in discussions, conferences and	Participation in scientific projects, conferences Participation in seminars	Portfolio assessment

	other forms of continuous professional development		
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The above table - 4 shows the relationship between learning outcomes, teaching methods and assessment. For example, to form theoretical knowledge on radiological diagnostic methods and interpretation of their results, practical classes are used, the mastery of which is checked by testing or an oral exam. In the case of using interactive teaching methods such as CBL, the assessment methods are checklists for clinical cases. Practical skills of residents are formed at the patient's bedside, through practice and duty, the mastery of practical skills is assessed by OSCE, mini-clinical exams, etc.

The integration of training of residents in the NSCP RK is ensured by the developed database of clinical cases in radiology, teachers from practical healthcare, provision of the educational program with clinical bases with access to patients, the presence of various residency specialties to ensure interprofessional training.

In order to implement the principle of interprofessional training, the NSCP RK provides for academic mobility of residents in the specialty "Radiology" in other educational organizations. Academic mobility of students is carried out on the basis of international treaties and treaties between educational organizations of the Republic of Kazakhstan and foreign countries. Applicants for academic mobility are selected on a competitive basis. The main criteria for competitive selection are: completion of one academic semester at the NSCP RK, GPA above the established score, good proficiency in the relevant foreign language (a certificate of passing a foreign language test is preferable). Residents sent to other organizations as part of academic mobility must be familiar with the rules for transferring credits and be aware that the disciplines studied during mobility programs must be from related specialties or disciplines. Upon arrival of residents from academic mobility, the training center transfers the acquired learning outcomes.

Feedback from residents on the results of their assessment is carried out after the completion of each discipline.

Feedback from employers on the assessment of the skills and knowledge of a resident trained at the NSCP RK will be carried out annually.

Conclusions of the EEC on the criteria correspond to 9 standards (including 6 basic, 3 improvement standards): fully - 8, partially - 1, do not correspond - 0.

Recommendations for improvement:

- 1) It is necessary to refine the checklists for conducting current, midterm and end-of-course assessment in the disciplines of the program (3.1.4).
- 2) To develop and apply mechanisms for studying and documenting the reliability, validity and fairness of assessment methods (3.1.4).

Standard 4: RESIDENTS

4.1 Admission and selection policy

In order to train highly qualified radiologists, the NSCP establishes:

1. Requirements for applicants for a passing score of at least 75 points;

Requirements for the number of residents accepted in order to ensure the quality of training and the capabilities of the NSCP RK. While analysing the capabilities of the NSCP RK, the availability of teachers, mentors, clinical facilities with access to patients, classroom space for classes, textbooks and literature, etc. are taken into account. For the 2024-2025 academic year, the maximum number of residents admitted in the specialty "Radiology" is set at 15 residents.

The admission of residents is regulated by the Order of the Minister of Health of the Republic of Kazakhstan dated December 15, 2020 No RK MOH-270/2020 "On approval of the rules for placing a state order, admission to training and training of medical personnel in residency".

At the level of the NSCP RK, the Academic Policy defines the policy for the admission of residents. Admission of residency students to the NSCP RK is carried out by placing a state

educational order, as well as paying for tuition at the expense of the students' own funds and other sources on a competitive basis based on the results of entrance examinations, in accordance with the admission plan determined by the authorized body in the field of healthcare. The tuition fee for the 2024-2025 academic year for applicants to residency in the specialty "Radiology" is set at 1,300,000 (one million three hundred thousand) tenge (table to standard 4, paragraph 4.1.3.).

Persons with a document indicating the qualification of "Doctor" are admitted to residency.

An Admission committee is created to accept documents and organize entrance examinations at the NSCP RK. Persons entering residency in the specialty "Radiology" submit the following documents to the NSCP RK and (or) through the information system (*web portal of the "electronic government"* www.egov.kz):

- 1) an application in any form addressed to the Director of the NSCP RK;
- 2) a document on higher education;
- 3) a copy of the certificate of completion of internship;
- 4) a copy of the certificate of a specialist in the field of healthcare;
- 5) a copy of an identity document;
- 6) a copy of the employment book (if any);
- 7) six photographs measuring 3x4 centimeters;
- 8) a medical certificate in accordance with subparagraph 31) of Article 7 of the Code.

Persons entering residency in the specialty "Radiology" take a combined exam, which includes 3 sections assessed on a 100-point assessment scale, where:

1. 20% is the sum of the GPA for the period of study in internship + GPA for the period of study in the bachelor's degree;

For graduates of previous years who do not have a GPA in the transcript, the average score of the grades in the diploma supplement is calculated with recalculation on a 4-point system.

2. 30% - the result of computer testing on the end-of-course assessment of the outgoing year;
3. 50% - oral exam on the educational program.

For the period of entrance examinations to residency, examination committees are created in specialties, which include - teachers with the academic degree of Doctor of Medical Sciences and (or) Candidate of Medical Sciences and (or) PhD, practicing doctors with at least 5 years of work experience, having the highest and (or) first qualification category in the specialty.

The principle of transparency of the admission procedure to residency is implemented by creating an admission committee for accepting documents of residents and an examination committee for taking the exam. All decisions of the committee are made by a majority vote, and the results are recorded in the form of minutes of the committee meeting.

While organizing the admission of residents with special needs to the program "Radiology" NSCP RK provides the following conditions for persons with disabilities:

1. In-person exam for applicants with disabilities is held in a separate classroom;
2. The duration of the entrance examination for applicants with disabilities is increased by the decision of the Admissions Committee of the NSCP RK, but not more than by 1.5 hours;
3. Applicants with disabilities are provided with instructions on the procedure for conducting entrance examinations in a form accessible to them;
4. The presence of an assistant in the classroom during the entrance examination from among the NSCP RK employees is ensured, who provides applicants with disabilities with the necessary technical assistance, taking into account their individual characteristics;
5. Material and technical conditions are created that ensure unimpeded access for applicants with disabilities to classrooms, toilets and other premises, as well as their stay in the specified premises (including the presence of ramps, widened doorways, elevators);
6. While conducting entrance examinations for the visually impaired, the tasks to be completed, as well as the instructions on the procedure for conducting entrance examinations, are drawn up in large font; for persons with severe speech impairments, deaf, hard of hearing, entrance examinations conducted orally are conducted in writing; for persons with impaired motor functions of the upper

limbs or absence of upper limbs, entrance examinations conducted in written form are conducted orally.

An appeals commission is created to consider applications from persons who disagree with the results of the entrance examinations. The chairman and composition of the appeals commission are approved by the order of the director of the NSCP RK. The appeals commission accepts and considers applications from persons applying for residency, on the content of examination materials and technical reasons. The appeals commission decides to add points to the person appealing the results of the entrance examination in specialties.

An application for appeal is submitted to the chairman of the appeals commission by the person applying for residency. Applications on the content of examination materials and for technical reasons are accepted until 13:00 the next day after the announcement of the results of the entrance examinations and are considered by the appeals commission within one day from the date of filing the application.

The appeal commission works with each person individually. If a person fails to appear at a meeting of the appeal commission, his/her appeal application will not be considered. While the appeal commission considers the application, the person who filed the appeal provides an identity document.

Decisions of appeal commissions are made by a majority vote of the total number of commission members. In the event of a tie, the vote of the commission chairman is decisive. The work of appeal commissions is formalized in a protocol signed by the chairman and all members of the commission.

The NSCP RK plans to include the Chairman of the Resident Council in the process of developing the resident admission policy, after admitting residents and creating the NSCP RK Resident Council.

The admission and selection policy, the number of students for postgraduate education programs of the NSCP RK is revised in the following cases:

1. In the event of changes in LSI in the field of education and healthcare regulating the activities for the admission and selection of students.

2. In the event of proposals and recommendations from members of the Academic and Educational and Methodological Council of the NSCP RK on improving the admission and selection process.

3. In the event of a change in the material and technical equipment of the NSCP RK, this affects the calculation of the ability to accept a certain number of students.

4.2 Number of residents

The NSCP RK has a methodology for calculating the number of residents accepted. The calculation methodology is defined in the Standard for the Development and Approval of Educational Programs. The calculation is carried out by the Training Centre, staff and teachers of the NSCP RK taking into account the following quantitative indicators:

1. Availability of teachers in the accepted specialty: at least one qualified teacher per 15 residents. The criterion is based on the fact that the teacher performs only 10% of the academic load of the educational program (classroom work). For one academic year, the academic load is 70 credits or 2100 hours, 10% of which is 210 hours. The teacher's load is calculated for one group with 5 residents. This yields an indicator of 15 residents per one teacher of the main staff of the NSCP RK.

2. Availability of mentors in the accepted specialty: no more than 5 residents per mentor. The criterion is based on the provisions of the academic policy of the NSCP RK, which approves the number of 5 residents per mentor.

3. Availability of classroom space: 2.5 square meters per student. The criterion is established based on the study of LSI on the organization of educational activities

4. Availability of computers for access to international databases. At the rate of 3 residents per specialty per computer.

In addition, determining the feasibility of implementing the residency educational program includes studying the following quality indicators, without which it is impossible to launch the residency:

5. Availability of departments, a clinical base with access to patients in the relevant specialty to ensure practice;

6. Availability of a library with literature on the educational program;
7. Availability of simulation equipment for practicing skills;
8. Availability of an automated information system for maintaining and recording assessments of residents' knowledge and skills;
9. Availability of the EP in the register of educational programs;
10. Availability of an institutional accreditation certificate.

Analysis of the educational potential of the NSCP RK shows that the personnel, classroom, clinical/practical resources of the NSCP RK allow accepting 15 residents in the program "Radiology" in the 2024-2025 academic year (link to the analysis:

<https://drive.google.com/file/d/1H6IDfl3mfBFnlro4DZ5NfhRix-WQL56/view?usp=sharing>).

4.3 Resident support and consulting

Support for students will be provided by studying resident satisfaction, obtaining information upon direct contact with the resident. The resident receives information about the support service from the publication on the stands of the educational department, through the website www.nncf.kz.

On the basis of the NSCP RK, the resident can receive medical care, consultation on academic issues, advisory assistance for participation in conferences, seminars and trainings, etc. Consulting and support for residency students are carried out in a confidential form in accordance with LSI.

It is planned to provide social benefits to socially vulnerable categories of residents with good academic performance. The amount and decisions on payment are made at a meeting of the Economic Council of the NSCP RK.

To date, the NSCP RK has developed a Regulation on support and incentives for residents, which defines the types of social, material, academic, and advisory assistance. It is planned to develop a program for social support for residency students after the admission and recruitment of residency students in 2024 (to form a program for the next year, it is necessary to determine the need for individual types of assistance for planning financial resources).

According to the regulation, the following types of incentive assistance are provided for residents:

- 1) Financial assistance to socially vulnerable groups of residents in the form of tuition fees (10-20%);
- 2) Financial assistance to residents in the form of payment for dormitory accommodation.
- 3) Payments to residents who have published an article in journals recommended by the CCES of Higher Education of the MSHE of the Republic of Kazakhstan;
- 4) Providing opportunities to participate in training seminars and conferences;
- 5) Providing opportunities to study within the framework of academic mobility.

4.4 Representation of residents

The NSCP RK has developed a Regulation on the Council of Residents, which defines the goals and functions of the council. In accordance with the Regulation, the Council of Residents is formed from among the students of the residency. The Chairman of the Council is determined by a general vote of the Council members. The main goal of the Council is to ensure due participation of residents in formulating the mission and final outcomes of training, in developing training programs, planning working conditions, evaluating training programs, managing the training program, in making decisions on the processes, conditions and rules of training and preparation. The Council meets on a scheduled basis every 6 months and unscheduled meetings can be organized at the request of at least 1/3 of the Council members. The Chairman of the Council of Residents of the NSCP RK will be included in the educational, methodological and Academic Council of the NSCP RK for interaction with the structural divisions of the NSCP RK. Proposals submitted by the Council of Residents are subject to consideration at a meeting of the EMC and Academic Council of the NSCP RK.

4.5 Working conditions

At the NSCP RK, residents are allowed to combine training with work only during their free time. Residents are provided with 6 contact hours of training and 3 hours of independent work. In accordance with the Law on Education, NSCP RK residents are allowed to work outside of academic

hours.

According to the academic policy of the NSCP RK, in case of forced interruptions in training, NSCP RK residents are given the opportunity to take an academic leave and study according to an individual training plan.

To apply for an academic leave, a residency student submits an application to the Director of the NSCP RK and presents documents confirming the validity of the temporary interruption of training.

Academic leave for medical reasons is granted to residency students based on:

- 1) the conclusion of the medical advisory commission at an outpatient clinic for a period of 6 to 12 months due to illness;
- 2) the conclusion of the medical advisory commission at an anti-tuberculosis medical organization in the event of tuberculosis.

Academic leave may also be granted to a residency student based on:

- 1) a summons to join the Armed Forces of the Republic of Kazakhstan for the period of conscription for military service, in cases established by law;
- 2) the birth, adoption of a child under 3 years of age, in cases established by law;
- 3) in other cases provided for by law.

Based on the submitted documents, the head of the NSCP RK issues an order within three working days to grant the residency student an academic leave, indicating its start and end dates.

After returning from academic leave, the residency student submits an application to the head of the NSCP RK and presents a certificate from the medical advisory commission on the state of health from the medical organization that observed the patient, with a conclusion on the possibility of continuing training in this specialty (if the student is on academic leave due to illness). After returning from academic leave, the residency student studies on the basis of an individual training plan, together with the group currently undergoing training, taking into account changes in the requirements of the current State Compulsory Educational Standard (the difference in subjects and hours is eliminated).

If the date of leaving academic leave or going on academic leave does not coincide with the beginning or end of the academic period, then the resident, according to an individual schedule, completes all educational tasks and earns points required for the admission rating, or enrolls in the summer semester of study for the disciplines for which the difference has arisen.

Conclusions of the EEC on the criteria. Compliant out of 20 standards (including 14 basic, 6 improvement standards): fully - 19, partially - 1, do not comply - 0

Recommendations for improvement:

- 1) To provide for the inclusion of residents in the process of developing the admission policy (4.1.6).
- 2) To ensure adequate representation of residents in advisory bodies (4.4)

Standard 5: ACADEMIC STAFF

5.1 Admission and selection policy

The NSCP RK has developed, approved and implemented a personnel policy (link: https://drive.google.com/file/d/1kPckKZMxt2nkZMwt5QazP2jnpHvDvLvg/view?usp=drive_link) for the recruitment, hiring and motivation of teachers and clinical mentors, aimed at ensuring the required number of teachers in the relevant area of training. The procedure for searching and selecting employees of the NSCP RK has also been approved. The personnel policy of the NSCP RK is based on the following principles:

- ensuring the effective and appropriate use of human resources to achieve the goals and objectives of the NSCP RK;
- ensuring a high level of human resources as the most important element of production in order to improve the medical activities of the NSCP RK;
- bringing all areas of organizational human resources management in line with modern requirements;

- increasing the positive image and trust of clients and partners in the NSCP RK.

While recruiting and hiring teachers and mentors in the specialty of radiology, the administration of the NSCP RK is guided by the following requirements established by job descriptions:

1. Correspondence of the teacher's specialty to the profile of the disciplines taught;
2. Availability of advanced training in pedagogy over the past 5 years;
3. Availability of an academic degree (desirable);
4. Availability of an academic title (desirable);
5. Availability of work experience in the specialty of at least 10 years;
6. Availability of experience in scientific and pedagogical activity of at least 3 years.

In order to ensure openness of the selection criteria, the requirement for teachers is posted on the website of the NSCP RK before the competition. The selection criteria are reviewed every three years (unless there are changes in the LSI).

The share of NSCP RK teachers with a PhD in the specialty of radiology is 67% of the total Academic staff. The Academic staff in the specialty of Radiology is represented by 3 employees of the NSCP RK, of which 2 are candidates of science. 100% of the teachers are specialists of the main staff of the NSCP RK (table to standard 5 of annex 4). All disciplines of the educational program of residency in the specialty "Radiology" are provided by teachers in the profiles of the taught disciplines (Table to Standard 5, clause 5.1.2).

The number of mentors in the NTC in the specialty "Radiology" is 3 employees. Incentives for teachers to implement postgraduate education will be provided in accordance with the regulations on paid services (teachers are paid at least 20% of their income), regulations on KPI (it is planned to provide for payments to teachers who have achieved high results in KPI activities), regulations on stimulating scientific results.

In addition, full-time teachers who have published scientific articles in the journals of the CCES MSHE RK and in peer-reviewed foreign journals will be provided with payments in accordance with the rules for stimulating scientific activity.

Mentors participating in the implementation of the residency program in the specialty are provided with hourly pay.

While questioning teachers, it was found that the majority are completely satisfied with the organization of work and the workplace in this educational organization. In this educational organization, teachers have the opportunity to engage in scientific work and publish the results of R&D. They are satisfied with the work of the HR service. They are satisfied with the salary - 75% completely agree, 25% partially.

5.2 Commitments and development of teachers

In order to verify the data of standard 5, during a meeting with the head of the HR department and during interviews with teachers, experts received opinions on approaches to developing the pedagogical competence of teachers, motivation to work with residents, and mentoring.

The experts determined that teachers and residents have enough time for teaching, mentoring, and training.

The experts received responses about the teacher training program, which is held annually.

According to the regulation, the average annual workload of residency teachers who are full-time employees on 1 rate is set at 1664 hours, of which 40% of the time is allocated to the teaching load - 680 hours (classroom classes, IWSST, IWT), 20% methodological work - 328 hours, 20% research work - 328 hours, 20% educational work - 328 hours.

Based on this, the teaching load is calculated annually:

1. Teachers and mentors with 1 full-time position - 680 hours, of which the teacher's workload is 170 hours, the mentor's workload is 510 hours;
2. Teachers and mentors with 0.5 full-time positions - 340 hours, of which the teacher's workload is 85 hours, the mentor's workload is 255 hours;
3. Teachers and mentors with 0.25 full-time positions - 170 hours, of which the teacher's

workload is 43 hours, the mentor's workload is 127 hours;

Based on the structure of the distribution of teaching time in residency educational programs (only 10% classroom work, 75% practice (on duty, clinical rounds) and 15% IWS), the workload of a full-time teacher on 1 position per month is no more than 19 hours, and the mentor's load is no more than 57 hours. The workload of a teacher and a mentor is calculated for one group, the number of which does not exceed 5 students.

The salary fund for teachers is formed from receipts for educational services in the amount of 20% of all receipts.

In addition, teachers and mentors who have published articles in journals are provided with payments in accordance with the regulations on stimulating scientific activity.

The educational organization has opportunities for career growth and development of teacher competencies. Studied in programs for improving professional qualifications - 40% less than 1 year ago, 30% during the current year, 30% more than 3 years ago.

The organization implements social support programs for teachers - 85% answered that "yes, such programs exist", 15% "I have already used this".

Conclusions of the EEC on the criteria. Comply with out of 8 standards (including 7 basic, 1 Standard of improvement): fully - 7, partially - 1, do not comply – 0.

Recommendations for improvement:

1) To develop a program for the development of professional and pedagogical competencies of teachers and clinical mentors (basic and advanced levels) (5.2.2).

Standard 6: EDUCATIONAL RESOURCES

6.1 Material and technical support and equipment

The administration of the NSCP RK allocates the necessary funds from the budget for the continuous improvement of the material and technical base, which are spent on: major and current repairs, technical equipment for educational, scientific and information activities, the purchase of furniture and educational equipment, maintaining utilities and networks of buildings and structures in working condition, registration of buildings and structures. In accordance with the allocated funds, computer and office equipment, office supplies, dummies, phantoms, laboratory and medical equipment, consumables, etc. are purchased.

The NSCP RK has a developed material and technical base for the implementation of the educational program. The material and technical base includes: lecture halls, classrooms, a library, information technology, clinical bases (department of radiation, instrumental, functional diagnostics), the Kazakh National Scientific Centre of Oncology and Radiology.

The NSCP RK has its own classrooms in the administrative and educational building, which is located at 5 Bekhozhina Street.

Classroom fund. The total classroom fund has increased by 60% since 2019 and currently amounts to 201 m2 (Table to Standard 6, clause 6.1.1.).

The small and large conference rooms are equipped with stationary multimedia projectors. The classrooms are designed for 8 to 30 seats and are located in the main and therapeutic buildings of the NSCP RK, they are fully equipped for conducting seminars/practical classes, they have the necessary cabinet furniture, educational and methodological equipment and manuals.

The development of communication and practical skills will be carried out on the basis of the simulation centre, planned for creation in September-November 2024. For this purpose, it is planned to purchase 12 mannequins and simulators as part of the construction of a new infectious disease centre. The purchased mannequins and simulators allow developing the communicative and practical skills of students in all programs of the NSCP RK (Table B to Standard 6, paragraph 6.1.1).

The adequacy of the material and technical base for the implementation of the educational program is checked annually, including through a survey of residency students and teachers.

6.2 Clinical bases

The NSCP RK provides all the conditions for conducting innovative forms of training, since the [ECAQA_ Eurasian Center for Accreditation and Quality Assurance in Education and Healthcare](#)

NSCP is the leading Republican centre for phthisiopulmonology and strives to become a flagship in the transfer of innovative technologies to medical organizations of the country. The clinical base and material and technical base of the NSCP RK contribute to the effective implementation of the educational program of residency in the specialty "Radiology".

The structure of the NSCP RK includes the Department of Differential Diagnostics and Treatment of Patients without Bacteriosis No. 4, the Department of Radiation, Instrumental, and Functional Diagnostics. All teachers of the NSCP RK have access to patients of the TB, pulmonology (differential diagnostics department), anaesthesiology (anesthesiology department), radiology (radiology department) profile.

In the clinical departments of the NSCP RK, teachers and staff have access to bacteriological and PCR diagnostic methods (G-Xpert / Ultra. HAIN-test Bioneer), cultural methods (BACTEC Mgit-960, sowing on the Lowenstein-Jensen medium), sequencing, devices for bronchoscopy and gastroscopy, FG and X-ray machines, CT, ultrasound, ECG, etc.

The category of patients for the implementation of the resident's practice is determined on the basis of the nosology and skills specified in the typical curriculum for the specialty "Radiology". The resident's practice is supervised by a mentor on the basis of an agreement concluded between the mentor and the NSCP RK. The development of skills by residents is carried out jointly by the mentor and the teacher. Provision of clinical bases and relevant resources for residents and students is carried out on the basis of official agreements ([link to agreements: https://drive.google.com/file/d/1Wg3puwc_CXPTIUaO2xa6h3sjdLq8AyHu/view?usp=drive_link](https://drive.google.com/file/d/1Wg3puwc_CXPTIUaO2xa6h3sjdLq8AyHu/view?usp=drive_link))

The educational program of residency in the specialty "Radiology" consists of disciplines on general radiological diagnostic methods (X-ray diagnostics of adults and children, comprehensive radiation diagnostics, computer diagnostics, magnetic resonance diagnostics) and disciplines related to oncology (radiology in mammology, nuclear medicine, differential diagnostics in oncology). Disciplines such as X-ray diagnostics of adults and children, comprehensive radiation diagnostics, computer diagnostics, magnetic resonance diagnostics are planned to be implemented on the basis of the NSCP RK, and the disciplines of radiology in mammology, nuclear medicine, differential diagnostics in oncology are planned to be implemented in cooperation with KaziOR (Table to Standard 6, clause 6.2.1).

The above-mentioned medical organizations provide the NSCP RK with access to patients in the radiology profile, a classroom for training organizations and a conference room.

6.3 Information technology

The NSCP has a library, founded in 1933. The total area of the library is 119 square meters, which includes: a subscription, a reading room with 6 seats, a catalogue room, a book depository (Table A to Standard 6, clause 6.3.1).

The library collection contains 60 textbooks (5 in Kazakh, 55 in Russian), including 24 textbooks, 24 sources of scientific literature, 12 sources of periodicals (Tables B to Standard 6, p. 6.3.1).

The specialized journal "Tuberculosis and Lung Diseases" is subscribed to on a regular basis. There are also archives of the journals "Pulmonology" and "Nurse" (until 2022). Along with modern scientific medical literature, the library also provides users with a collection of rare books: fundamental works of the luminaries of Soviet medicine (Krasnobaev T.P., Rabukhin A.Ye., Pomeltsov K.V., Pavlov I.P.). The works of the NSCP employees are stored and in demand: monographs, scientific collections, methodological materials, the journal "Phthisiopulmonology" published by the Centre.

The reference and bibliographic apparatus of the library consists of alphabetical, systematic, and subject catalogues. Card indexes of the Proceedings of the NSCP RK, Dissertations and Abstracts of Dissertations received by the library are maintained. The library has a reading room, a room for catalogues and card indexes, a book depository, and a computer with Internet access. The users of the library funds are doctors and employees of the NSCP, students of the National Training Centre, teachers and students of the KazNMU named after S. D. Asfendiyarov, KRMU.

To register in the library, a student must present a "Student's Pass" and a document with a photograph confirming the identity (or a copy). Registration of residents and students in the library is

carried out upon presentation of an ID. Books are issued for a period of 10 calendar days. Books available in the library in single copies and scientific medical journals are issued to the reading room and used during the working day.

The NSCP RK has agreements on mutual cooperation in the field of library and information services:

1. NJSC "KazNMU named after S.D. Asfendiyarov" (agreement number 228 - P dated August 3, 2023);
2. Non-Governmental Educational Institution "Kazakhstan-Russian Medical University";
3. NJSC "Republican Scientific and Technical Library" (agreement No. 33 dated February 23, 2022).

In connection with the planned expansion of educational programs implemented on the basis of the NSCP RK, the organization's needs for scientific literature and textbooks are increasing.

In this regard, the NSCP RK annually expands the collection of educational and scientific literature. Over the past 5 years, the Library's collection has been replenished with 20 textbooks in residency areas and 12 dissertation abstracts.

By concluding an agreement with KazNMU named after S.D. Asfendiyarov, NSCP received access to the following databases:

1. Cochrane Collection Plus
2. eBooks Clinical Collection
3. JoVe Research
4. CiNaHe Complete
5. Scopus
6. Web of Science
7. Sciencedirect
8. Wiley online Leibrary com

Access to the above databases will significantly expand the capabilities of residents of NSCP the RK.

In addition, the NSCP RK has free electronic access to the unified bibliographic and abstract database Scopus (<https://www.scopus.com/home.uri>) and the full-text database Sciencedirect (<https://www.sciencedirect.com/>). Residents of the NSCP RK receive access to the above databases after registering in the databases through computers installed in the NSCP RK (access is given to the IP address of the organization). After registration, access to the databases for residents of the NSCP RK will be available from any computer / laptop. Residents will use the scientific data obtained from international databases in all educational programs of the residency.

In order to ensure high-quality work of residents in obtaining the necessary scientific data, sources of literature, a computer room with Internet access has been opened in the NSCP RK. The computer room provides 5 working computers for residents from where they can access international databases. In addition, the Training Centre and the library have created a portfolio for each educational residency program, which contains clinical protocols and guidelines, articles and theses necessary for the practical activities of the resident physician.

6.4 Clinical teams

The NSCP RK plans to launch residency in three specialties: "Phthiology for adults, children", "Pulmonology for adults, children", and "Radiology". This allows the management of the NSCP RK to create inter-professional teams during the training process with the participation of residents of different but interrelated specialties. The creation of inter-professional teams should contribute to the development of residents' skills in solving professional problems, communication and analytical skills.

In addition, it is planned to train residents through their participation in consultations, a centralized medical advisory commission, which will contribute to the development of expert skills in solving complex situations in radiology. To implement these methods of inter-professional training, the NSCP RK has full personnel, material and technical, and educational and methodological support (complex clinical cases).

6.5 Medical scientific research and achievements

The RSE on the REM "National Scientific Centre of Phthisiopulmonology of the Republic of Kazakhstan" of the Ministry of Health of the Republic of Kazakhstan is one of the leading organizations of the Republic of Kazakhstan conducting scientific research in the field of phthisiopulmonology. Priority areas in the field of scientific research are phthisiology and pulmonology, for which the centre currently implements 48 scientific and technical projects.

One of the tasks that the NSCP RK sets for itself is to intensify scientific research in the field of "Radiology" after the launch of the residency.

To date, the NSCP RK has a certificate of accreditation as a subject of scientific and (or) scientific and technical activity for a period of five years (Series MK No. 00047 dated August 19, 2022).

By order No. 343 dated July 14, 2023, the scientific and practical journal "Phthisiopulmonology" was included in the List of publications recommended by the CCES of the Ministry of Science and Higher Education of the Republic of Kazakhstan.

All scientific research and its results are important for postgraduate, additional and non-formal education, since the teaching and methodological materials of teachers are updated based on the results of these studies.

Today, the main focus of scientific and practical projects is the study of effective methods for diagnosing and treating tuberculosis. After the launch of the residency, it is planned to launch research projects on radiation methods for diagnosing tuberculosis, respiratory diseases and involve residents in the implementation.

6.6 Expertise in the field of education

Over the past 5 years, teachers of the NSCP RK have developed 1 educational and methodological product (Table B, to standard 6, paragraph 6.6.1.). The educational and methodological products were developed based on scientific research within the framework of scientific and technical projects in the direction of "Phthisiology". The developers of the products are the Academic staff of the residency.

In order to improve the provision of the healthcare system with human resources, in 2023, the teachers of the NSCP RK developed an educational residency program in the specialty "Radiology" and entered it into the Register of educational programs.

The educational program has an internal and external review, and also undergoes an examination by two independent experts in the process of entering the programs into the register.

Internal quality evaluation and examination of educational residency programs is carried out by the assessment commission and the results obtained are considered by the EMC and Academic Council of the NSCP RK.

The Academic Council meetings consider issues related to the quality of education, approval of documentation on planning and organization of the educational process.

Procedurally, the process of evaluating the quality of programs will be presented in three stages:

First stage: The Assessment Commission evaluates the training programs and the results are considered by the EMC and Academic Council.

Second stage: Current monitoring of the quality of educational programs, including mechanisms for monitoring and evaluating quality in accordance with the working curricula.

Third stage: Monitoring and evaluating the quality of the results of educational services.

The implementation of the process of monitoring and controlling educational programs of postgraduate and additional education is assigned to the Training Centre.

In order to implement a new approach to evaluating educational programs, a Standard for the development of educational programs for residency has been developed.

After the launch of the residency, it is planned to develop scientific and technical projects in the field of improving educational activities in the specialty "Radiology".

In order to increase the motivation of teachers to engage in scientific research, the NSCP RK has developed a Regulation to stimulate employees who publish scientific articles in journals recommended by the CCES MSHE RK and international peer-reviewed journals.

In order to increase motivation, teachers involved in scientific projects on postgraduate education will be paid based on the results of the research work carried out. It is planned to introduce KPI indicators for teachers, where one of the indicators is participation in scientific and technical progress.

6.7 Training in other institutions

The process of academic exchange of students and teachers is determined by the Academic Policy of the NSCP RK. Academic exchange of students is carried out on the basis of international treaties and agreements between educational organizations of the Republic of Kazakhstan.

In postgraduate education programs, for sending a resident for academic exchange, it is mandatory that the educational program of the NSCP RK and the host party comply. In this regard, according to the policy, before the start of the academic mobility procedure, the National Training Centre will determine to what extent the disciplines offered by the host university for study correlate with the curriculum for a similar period of study. If the program corresponds, the Training Centre forms a commission and holds a competition for the academic exchange of a residency student. The main criteria for the competitive selection are: completion of one academic semester at the NSCP RK, academic performance GPA above the established score, good proficiency in the relevant foreign language (a certificate of passing a foreign language test is preferable).

Also, the NSCP RK, on the basis of concluded agreements, carries out an exchange of experience between teachers and employees of foreign partners.

To date, the NSCP RK has agreements with 10 organizations in the field of science and education (5 foreign and 5 domestic).

To date, academic mobility of residents and Academic staff is not carried out due to the lack of residency students.

NSCP is constantly expanding cooperation with leading centres of near and far abroad on issues of phthisiopulmonology and radiology. To date, NSCP RK has cooperation agreements with 5 foreign organizations and 5 domestic organizations (Table to Standard 6, p. 6.7.3):

1. National Center for Tuberculosis and Lung Diseases, country: Georgia, Tbilisi;
2. Republican Specialized Scientific and Practical Medical Center of Phthisiology and Pulmonology of the Ministry of Health of the Republic of Uzbekistan, country: Tashkent, Uzbekistan;
3. Republican Center for the Protection of the Population from Tuberculosis of the Ministry of Health and Social Protection of the Republic of Tajikistan, country: Dushanbe, Tajikistan;
4. The 8th Hospital of Xinjiang Medical University of XUAR PRC, country: XUAR, China;
5. Center for the Study of Global Health in Central Asia at Columbia University, country: USA;
6. Research Institute of Biological Safety Problems of the Ministry of Education and Science of the Republic of Kazakhstan, country: Almaty, Kazakhstan;
7. NJSC “Kazakh National University named after Al-Farabi” of the Ministry of Education and Science of the Republic of Kazakhstan, country: Almaty, Kazakhstan;
8. Institute of Molecular Biology and Biochemistry named after M.A. Aitkhozhin, country: Almaty, Kazakhstan;
9. National Scientific Center of Pediatrics and Pediatric Surgery;
10. Kazakh Research Institute of Oncology and Radiology;

Informally, the NSPC RK maintains cooperation with all medical education and science organizations of the Republic of Kazakhstan

Conclusions of the EEC on the criteria. Compliant with 18 standards (including 11 basic, 7 improvement standards): fully - 16, partially - 2, do not comply - 0

Recommendations for improvement:

- 1) To provide residents with access to the latest literature, subscriptions to electronic resources,

international sources and equipment for theoretical training and mastering practical skills. To provide a safe environment for self-education (6.1.1).

- 2) To implement the Radiology program, it is necessary to provide access to laboratory and instrumental diagnostics of patients, improve the material and technical base, and include training using simulations as an integrated part of the educational program (6.2.2).
- 3) To create the necessary conditions for placing a scientific library, regularly replenish the library with modern educational and scientific literature on phthisiology based on an analysis of needs, feedback from teachers and residents (6.3).

Standard 7: EVALUATION OF THE EDUCATIONAL PROGRAMME

7.1 Monitoring and evaluation mechanisms

Implementation of the policy on monitoring and evaluation of the educational program of residency in the specialty "Radiology" is assigned to the Training Centre of the NSCP RK. In order to implement the policy on evaluation of the educational program, the head of the training centre creates a commission for evaluation of the quality of the educational program. The commission carries out an evaluation based on the following criteria: compliance of the passport, structure, content of the educational program and teaching methods with the requirements of the LSI of the authorized body, definition of learning outcomes, availability of principles of modular training, relevance of the educational program and its compliance with the requirements of the healthcare system, availability of a university component and an optional component, maintaining a balance of educational program components (classroom classes, IWS, IWS), maintaining constructive consistency of goals, planned learning outcomes, formulation of learning outcomes both at the level of the entire educational program and at the level of individual modules or academic discipline, achievability of learning outcomes and their description in the form of knowledge, skills and abilities, teaching methods and assessment policy, adequacy of human resources, adequacy of material and technical resources, availability of international cooperation, participation of stakeholders in the development of educational programs.

In addition, the quality evaluation of educational programs is analysed based on the results of the end-of-course assessment of residents, a survey of residency students and employers, using the benchmarking method.

In accordance with the standard for the development of educational programs, the evaluation and monitoring of residency educational programs will be carried out annually. In order to conduct monitoring, the Training Centre creates a program evaluation committee, which includes heads of structural divisions, employees and Academic staff, and students of the NSCP RK programs. On behalf of the students, the chairman of the Resident's Council participates in the program evaluation.

The responsibility for developing the evaluation sheet, evaluation criteria, and forming the end-of-course assessment is assigned to the Training Centre. In order to ensure transparency, monitoring is carried out by the committee from January to March, where the results of the previous academic year are evaluated.

The results of the evaluation of the quality of educational programs are reported by the chairman of the evaluation committee at the level of the Educational and Methodological Council and the Academic Council of the NSCP RK. The decisions taken are formalized in the minutes of the Academic Council and measures are taken to improve the educational programs.

This process is regulated by the Standard for the Development and Approval of Educational Programs.

The current evaluation of the quality of educational programs is carried out by the Training Centre through a questionnaire. Also, in order to improve educational programs, benchmarking will be carried out with other educational organizations. During the benchmarking of the educational program of the NSCP and medical universities (KazNMU and KRMU), it was revealed that the universities have a high level of access to international databases, modular training organizations (where applicable), an interdisciplinary approach in the learning process, and simulation technologies in the

learning process. As a result of the benchmarking, the NSCP RK signed an agreement with the libraries of KazNMU and KRMU and plans to introduce inter-professional teaching methods into the training process for residents.

7.2 Feedback from teachers and residents

In order to receive feedback, the management of the NSCP RK plans to conduct a survey of students, teachers, and employers annually. The analysis of the results is communicated to all structural divisions, and an action plan is developed to eliminate comments or improve work. The results of the analysis are reported to the management of the NSCP RK.

In order to implement feedback, the Training Centre developed and approved questionnaires for residents, teachers, and employers at a meeting of the Academic Council.

Feedback questionnaires for students consist of the following structure: evaluation of student satisfaction (organization of the training process, qualifications of teachers, satisfaction with the theoretical part and practical part of the programs and overall satisfaction), recommendations and suggestions for improving the programs, which contributes to the choice of training in our organization.

The questionnaire for teachers contains information about the academic degree and academic rank of the teacher, information about satisfaction with the organization of the training seminar (provision of technical equipment, information about the date, time, place of the seminar, provision of forms of methodological documentation) and a wish to improve the training process.

The use of feedback contributes to a better understanding of the current needs of students and teachers and plays an important role in making changes to the educational program. Feedback from consumers is supported in each structural unit.

Also, students can write all their wishes on the official website of the NSCP RK, all questions and comments left are considered and forwarded to the structural units for making a decision or answering this issue. A survey of graduates in the specialty Radiology to evaluate the quality of the educational program is planned to be conducted annually.

7.3 Results of residents and graduates

Monitoring of the assessment of the academic achievements of residents is carried out in accordance with the academic policy of the NSCP RK. During the period of training of residents in the specialty "Radiology", the academic achievements of residents will be constantly monitored. In order to effectively implement the monitoring of academic achievements, the NSCP RK has introduced an automated information system "Platonus" and it is planned to create a full-time position for the position of an office registrar specialist. Residents' grades obtained during training will be posted weekly in an electronic journal. The completion of the journals will be monitored by an office registrar specialist.

Assessment of the mastery of clinical skills of residents will be monitored by clinical mentors and teachers. Upon completion of clinical practice, residents submit practice diaries to the training centre, signed by a mentor and a teacher, which will be the basis for evaluating the quality of training of residents for the training centre. Also, the assessment of the achievement of the learning outcomes of residents will be carried out during the midterm assessment of residents, portfolio assessment and the implementation of the individual training plan. During the midterm assessment, residents submit reports on the implementation of training plans.

It is planned to conduct an annual survey of employers in order to obtain feedback on the quality of the residents' practice and the educational program.

7.4 Involvement of stakeholders

The evaluation of the educational program at the NSCP RK is carried out by a specially created commission. The commission includes teachers of the NSCP RK, residents and administrative staff. In order to stimulate the process of monitoring educational programs, the performance indicators of residents and teachers include activities to assess the educational program.

Information on the participation of teachers, residents and other employees of the NSCP RK is communicated through familiarization with the order on the creation of the commission.

The educational program undergoes the procedure of annual monitoring of the quality of

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implementation at a meeting of the educational and methodological council with the participation of students and employers.

The interview with employers was conducted online and included questions such as: knowledge of the university mission, participation in the development of the mission and proposals for the strategic plan, participation in the work of advisory bodies, satisfaction with the basic knowledge and skills of residents, participation in training residents through mentoring, providing the department and residents with the necessary resources for practical training and the formation of clinical thinking, about the problems of interaction with departments and universities in general.

7.5 Procedure for approving educational programs

Approval of the educational program of residency is carried out at the level of the Academic Council of the NSCP RK. The educational program of residency in the specialty "Radiology" was approved by the Protocol of the Academic Council No. 4 dated December 13, 2023.

After consideration at a meeting of the Academic Council, the educational program of residency is included in the register of educational programs of the MSHE RK. The educational program of residency in the specialty "Radiology" was included in the register of educational programs of the MSHE RK by the decision of the coordinating organization dated April 22, 2024.

While developing an educational program, the Training Centre evaluates the quality and compliance of the material and technical base, clinical base, equipment and other educational programs using an assessment sheet. The main evaluation indicators are:

1. Availability of teachers and mentors. NSCP RK for the educational program "Radiology" has 3 teachers and mentors;

2. Availability of classrooms and computers. NSCP RK for the educational program "Radiology" has classrooms with an area of 370 square meters, a computer room equipped with 5 computers;

3. Availability of a clinical base. NSCP RK for the educational program "Radiology" has 1 department of NSCP RK and an agreement with KazIOR.

4. Availability of a library, a simulation center. NSCP RK has a library equipped with literature on radiology, access to international databases and plans to create a simulation center in 2024;

5. Availability of an automated information system. NSCP RK for the educational program "Radiology" has an automated information system "Platonus";

6. Availability of the EP in the register of the MSHE RK. The educational program of residency in the specialty "Radiology" was included in the register of educational programs of the MSHE RK by the decision of the coordinating organization dated April 22, 2024.

Conclusions of the EEC on the criteria. Comply out of 10 standards (including 7 basic, 3 improvement standards): fully - 9, partially - 1, do not comply - 0

Recommendations for improvement:

- 1) To integrate training in the simulation centre into the educational program (7.5.1). To consider purchasing simulators, phantoms, and mannequins to practice fetal ultrasound and other rare conditions.

Standard 8: MANAGEMENT AND ADMINISTRATION

8.1 Management

Documentation of the learning outcomes of students of the educational program "Radiology" is carried out in accordance with LSI and the academic policy of the NSCP RK. According to the requirements, the students who successfully completed the training in the residency programs, the NSCP RK issues a certificate of completion of residency with an annex indicating the completed disciplines, practices and grades for the midterm and end-of-course assessment. The certificate of completion of residency indicates the qualification according to the typical curriculum: Specialty "Radiology", qualification of a radiologist (Figure 1).

The image shows two forms for the certificate of completion of residency. The left form is titled "СВИДЕТЕЛЬСТВО об окончании резиденции" (Certificate of completion of residency) and the right form is titled "Резидентура біткені туралы" (About the resident). Both forms contain fields for personal data, training details, and signatures of the director and secretary.

Figure – 1. Form of the certificate of completion of residency.

The results of training of residents are taken into account by the authorized body in the field of healthcare.

In postgraduate education, a log of attendance, a transcript of training will be kept in the information system "Platonus". A statement is generated for each discipline. Documentation of the practice of the residency student is carried out through a practice diary, where both the residency student and the mentor sign. In order to ensure proper management, planning and organization of the training process for students, the NSCP has developed and approved at a meeting of the Academic Council of the NSCP RK the Policy for Ensuring Internal Quality in the Field of Education. It is planned to implement the Policy for Ensuring Internal Quality after the launch of the residency. To date, in order to ensure the quality of the educational program:

1. The educational program "Radiology" has been developed taking into account the opinions of stakeholders;
2. An evaluation of the material, technical, personnel and other capabilities of the center for launching the residency has been conducted;
3. Fundamental internal documents for the implementation and monitoring of the educational program have been developed;
4. Educational and methodological documentation for the implementation of the educational program has been developed;
5. It is planned to purchase additional textbooks in the specialty "Radiology"; Agreements have been concluded with the clinical sites of the NSCP

In order to ensure transparency, decisions regarding the organization and implementation of educational activities will be made by the following advisory and consultative bodies:

1. Admissions and examination committees. This commission is created by the order of the director of the NSCP annually in order to ensure the acceptance of documents and examinations in residency specialties. The commission makes decisions on the admission and selection of residents to the NSCP.
2. Quality Assurance Commission. This commission is created annually in order to monitor the quality of the educational program.
3. State Attestation Commission. This commission is created at the end of the academic year to carry out the end-of-course assessment of residents. The commission makes a decision on the presentation of a certificate of completion of residency indicating the qualification.
4. Residents' Council. This council operates on a permanent basis. Within the framework of the council, decisions are made on issues of planning, implementation and monitoring of the educational process. The decisions made are transferred to the Educational and Methodological Council.
5. Educational and Methodological Council. This council operates on a permanent basis. Within the framework of the council, decisions are made on issues of planning, implementation and monitoring of the educational process. The decisions made are transferred to the Academic Council.

6. Academic Council. It is the highest collegial body that makes decisions on planning, implementation and monitoring of the educational process.

8.2 Academic Leadership

"National Scientific Centre of Phthisiopulmonology of the Republic of Kazakhstan" of the Ministry of Health of the Republic of Kazakhstan is a leader in coordinating the phthisiopulmonology service of the Republic of Kazakhstan and providing highly specialized care.

In general, in the structure of the NSCP, the deputy director for clinical and scientific work is responsible for the direction - science, clinic, education and development strategy. While organizing residency programs, mandatory approval of all applications for training in clinical areas is carried out with the head of clinical activities, and the approval of the procurement plan for the implementation of educational activities is carried out with the deputy for economic issues.

In order to carry out work on the organization, planning, control and monitoring of educational events, the Training Centre of the NSCP RK was created. The EMC and Academic Council also participate in the management, the work of which is regulated by the Regulation on the EMC and Academic Council. The main unit implementing training is the Training Centre, which is responsible for sections of the educational process.

The main goal of its activities is planning educational programs, defining the mission and expected final learning outcomes; conducting continuous organizational, coordination and administrative work aimed at achieving the mission and goal, the final results of educational programs.

The staff of the training centre consists of the head of the training centre, deputy head, methodologist and manager. The head and deputy head of the training centre are responsible for planning educational programs, defining the mission and expected final results, monitoring educational programs, implementing and achieving the indicator of the strategic plan of the NSCP RK, strengthening and expanding cooperation with stakeholders, continuously improving and expanding the educational activities of the NSCP RK. The methodologist of the training centre ensures the development and approval of educational and methodological documentation. The functional responsibilities of the manager include organizing the training process, interacting with structural divisions of the NSCP RK to conclude an agreement, interacting with potential customers, creating a schedule, coordinating the date and time of the schedule with Customers, etc.

Transparency of educational program management is achieved through discussion of educational and methodological documentation (EMCD, Syllabuses, test assignments) for the implemented programs at meetings of the educational and methodological council, which ensures the accessibility and transparency of the educational process. This made it possible to improve statistical reporting, streamline the internal structure and minimize the number of output documents, significantly reduce the time frame for structural analysis of the performance indicators of the organization of additional education and work with external organizations, more specifically form points of responsibility of performers, and more clearly organize the educational process.

8.3 Budget for training and resource allocation

In the NSCP RK, the definition of the main priorities for spending funds is approved by the Supervisory Board (Approved by Order of the Ministry of Health of the Republic of Kazakhstan No. 453 dated June 27, 2017).

In addition, the annual implementation of the financial and economic activity plan based on the results of the financial year is submitted for consideration to the meeting of the Supervisory Board. Accounting and preparation of financial statements are carried out in accordance with the National Financial Reporting Standard No. 2. Separate accounting for the implementation of the Financial and Economic Activity Plan is conducted in terms of state programs and income from paid services, and is controlled by the internal audit department.

To ensure effective planning for the implementation of the educational program, a staffing table (number of teaching hours, number of teachers), class schedule, etc. is formed.

The composition of the accounting and reporting department of the NSCP RK consists of a chief accountant, deputy chief accountant, accountants for fixed assets, an accountant for accounting of medicines, an accountant for accounting and costing of products, an accountant-cashier.

In order to implement contractual obligations with Customers, the Training Centre directly interacts with the accounting and reporting department and jointly ensures the timely issuance of certificates of completion and an invoice under the contract.

The planning and economic analysis department annually collects applications for the purchase of goods that support the implementation of the educational program.

The library (Regulation No. 194/p dated 10.10.2018) for the purchase of educational and methodological literature at the end of each year forms an application for the purchase of the necessary literature for the implementation of educational programs.

The budget of the educational program consists of:

1. Salaries of teachers and mentors;
2. Expenses for the purchase of educational literature, periodicals, access to electronic library systems;
3. Expenses for business trips, advanced training;
4. Payment for services (for maintaining an automated information system, providing anti-plagiarism, etc.).
5. Other expenses.

8.4 Administration and management

The academic leader for educational activities is the head of the Training Center. A person with at least 5 years of experience in the field of education is appointed as the Head of the Training Center. The Head of the Training Center is appointed by the Director of the NSCP. The staff of the Academic staff, methodologists and other personnel, the structure of the Training Center are approved by the Director of the NSCP. The staff of the Training Center consists of the head of the training center, deputy head, methodologist and manager. The head and deputy head of the Training Center are responsible for planning educational programs, defining the mission and expected final outcomes, monitoring educational programs, implementing and achieving the indicators of the NSCP strategic plan, strengthening and expanding cooperation with stakeholders, continuously improving and expanding the educational activities of the NSCP. The methodologist of the training center ensures the development and approval of educational and methodological documentation. The functional responsibilities of the manager include organizing the training process, interacting with structural divisions of the NSCP to conclude contracts, interacting with potential customers, creating a schedule, coordinating the date and time of the schedule with Customers, etc. The quality assurance policy in the field of education at the NSCP is implemented by receiving feedback from residents, teachers, and employers, monitoring the educational activities of residents, making decisions on educational activities at meetings of collegial bodies, annual certification of teachers, internal audits and other methods of evaluating the quality of the educational program.

The internal quality assurance regulations are updated every three years in the absence of proposals from stakeholders and changes in the LSI. Today, the NSCP does not have a certified quality management system, but in the future it plans to create such a system to ensure the quality of the implementation of the educational program.

8.5 Requirements and regulations

While planning, developing and implementing educational programs for residency, the NSCP follows the recommendations and requirements of the state, and internal regulations, in particular the Academic Policy of the NSCP. In the framework of the implementation of the residency program in the specialty "Radiology", the NSCP RK cooperates with all interested parties: the Ministry of Health, which determines the State Compulsory Standard of Postgraduate Education and the typical curriculum for residency in the specialty "Radiology". The Ministry of Science and Higher Education, which determines the basic requirements for educational organizations, material and technical equipment of the organization, according to which the NSCP RK plans the material and technical and personnel support of the educational program. The NSCP cooperates with local executive bodies (Akimats, Health Departments) and determines the need for personnel at the local level, allocates grants for the training of specialists, according to which the number of residents planned for training

for a certain academic year is determined. Experts noted the close relationship between the NSCP and the Association of Phthisiopulmonologists of the Republic of Kazakhstan. Members of the association participate in the formation of professional standards, learning outcomes and competence of specialists, according to which the training outcomes of residents are formed. Cooperation with the National Centre for Independent Examination, which develops rules for assessing the knowledge and skills of students, according to which the rules for the end-of-course assessment of residents of the NSCP RK are determined. Cooperation with universities and research institutes is described in standard 6. University teachers are involved in the development and review of the residency program.

While developing the educational program "Radiology", the need for training residents in the disciplines of "Radiology in Mammology", "Nuclear Medicine", "Differential Diagnostics in Oncology" was determined. In this regard, an agreement was concluded with JSC "KazIOR".

An employee of the NSCP is a member of the Section of the Educational and Methodological Association in the direction of Healthcare, education and methodology. Educational programs of residency are approved at a meeting of the educational and methodological association and the Academic Council of the NSCP RK.

Conclusions of the EEC on the criteria. Compliant with 11 standards (including 8 basic, 3 improvement standards): fully - 10, partially - 1, do not comply - 0

Recommendation for improvement:

- 1) To develop, approve and implement a quality management system, including regular internal and external reviews and audits (8.4.2)

Standard 9: CONTINUOUS RENEWAL

While entering the educational program into the Register of educational programs of the MSHE RK, experts made recommendations and suggestions regarding the learning outcomes. These comments were taken into account and eliminated. The learning outcomes of the educational program are aligned with the professional standard Radiology and consist of the following learning outcomes:

- 1) To conduct radiological examinations (radiology, ultrasound diagnostics, computed tomography, magnetic resonance imaging, nuclear medicine) and interpret their results in adults and children, select optimal radiological examination methods in accordance with the clinical task, justify additional radiological examinations, prepare the patient for a radiological examination, provide emergency care to adults and children during radiological examinations, compare the results of radiological examinations.

- 2) To consult the patient or his legal representative about the course and prognosis of the disease in compliance with the principles of medical ethics and deontology, to provide information on the recommended diagnostic method and possible complications with the patient's informed consent. To work in teams with other specialists and health services to provide a full range of medical care to patients.

- 3) To comply with sanitary rules and regulations of radiation safety, to evaluate the risks of radiological examination methods to ensure a high level of patient safety, to calculate the X-ray dose received by the patient during radiological examinations, to provide the patient and staff with radiation protection equipment during a radiation examination

- 4) To apply knowledge of current protocols in order to present to the attending physician a plan for further radiological examination of the patient, to provide emergency care to patients during radiological examinations in accordance with clinical protocols and standards, to organize and conduct preventive radiological (screening) studies, medical examinations in accordance with LSI, to maintain medical records.

- 5) To formulate research questions in radiology, to develop hypotheses, collect and analyse data, to conduct statistical analysis and draw conclusions from the results; to conduct a search and analysis of literature, critically evaluate research data in radiology; to present research results in writing and

publish articles in scientific journals; to use research results in the practical activities of a Radiologist.

To participate in professional training events: conferences, seminars, and webinars. To train personal skills: leadership, teamwork, empathy and adaptability, initiative and responsibility for achieving goals. To develop time and stress management skills.

Conclusions of the EEC on the criteria. Compliant out of 2 standards (including 1 basic, 1 improvement Standard): fully.

CONCLUSION: during the external evaluation of the educational program, it was found that out of 114 standards (including 82 basic standards and 32 improvement standards), 106 accreditation standards demonstrate full compliance, including 76 basic standards and 30 improvement standards. 6 basic standards and 2 improvement standards are partially met. No non-compliance with standards was found.

Considering that the primary accreditation of the educational program in the specialty "7R01104 "Radiology" is being carried out and the admission of residents is planned for 2024, in compliance with the requirements of the Law on Education of the Republic of Kazakhstan, the educational organization has initiated specialized (program) accreditation without a contingent of residents. Therefore, the tasks of the external expert commission included evaluating the readiness of the NSCP to accept residents, studying the existing principles and approaches to training residents, mechanisms for ensuring quality and managing the educational program of residency using the example of other educational programs. Nevertheless, the EEC specifically studied the organization of training in the specialty "7R01104 "Radiology", including documentation, Academic staff, educational resources and other important issues related to compliance with accreditation standards.

The EEC concluded that, along with the achievements in training residents, including the expected results of training in the accredited educational program "7R01104 "Radiology", there are a number of comments that the university must eliminate within the 1-2 quarter of 2024.

5. Recommendations for improving the educational program "7R01104 "Radiology":

- 1) It is necessary to refine the checklists for conducting current, midterm and end-of-course assessment in the disciplines of the program (3.1.4).
- 2) To develop and apply mechanisms for studying and documenting the reliability, validity and fairness of assessment methods (3.1.4).
- 3) To develop a program for developing professional and pedagogical competencies of teachers and clinical mentors (basic and advanced levels) (5.2.2).
- 4) To provide residents with access to the latest literature, subscriptions to electronic resources, international sources and equipment for theoretical training and mastering practical skills. To provide a safe environment for self-education (6.1.1).
- 5) To implement the Radiology program, it is necessary to provide access to laboratory and instrumental diagnostics of patients, to improve the material and technical base, to include training using simulations as an integrated part of the educational program, to include training in the simulation centre of emergency conditions, communication skills and approve it accordingly (6.2.2).
- 6) To create the necessary conditions for placing a scientific library, regularly replenish the library with modern educational and scientific literature on phthysiology based on the analysis of needs, feedback from teachers and residents (6.3).
- 7) To integrate training in the simulation centre into the educational program (7.5.1). To consider the possibility of purchasing simulators and phantoms and mannequins for practicing fetal ultrasound and other rare conditions.
- 8) To develop, approve and implement a quality management system, including regular internal and external reviews and audits (8.4.2)

6. Recommendation to the ECAQA Accreditation Council

The members of the EEC established the compliance of the educational program of the residency in the specialty "7R01104 "Radiology" of the RSE on the REM "National Scientific Centre of Phthisiopulmonology of the Republic of Kazakhstan" with the Accreditation Standards and came to a unanimous opinion to recommend that the ECAQA Accreditation Council to accredit this program for a period of 5 years.

Chairman of the EEC	IMASHEVA BAGDAT SAKENOVNA	
Foreign expert	RYZHKIN SERGEY ALEKSANDROVICH	
Academic expert	KURMANOVA ALMAGUL MEDEUBAYEVNA	
Academic expert	RAMAZANOVA SHOLPAN KHAMZAEVNA	
Academic expert	BUGAKOV ANATOLY ALEKSEEVICH	
Academic expert	IZTLEUOV YERBOLAT MARATOVICH	
Expert employer	UTESHEVA GULMIRA SAYYNBAEVNA	
Expert student	TERTYUBAEVA ZHAZIRA ORUMBEOVNA	

Профиль качества и критерии внешней оценки образовательной программы (обобщение)

Стандарт	Критерии оценки	Количество стандартов	БС*/СУ	Оценка		
				Полностью соответствует	Частично соответствует	Не соответствует
1.	МИССИЯ И КОНЕЧНЫЕ РЕЗУЛЬТАТЫ	14	9/5	9/5		
2.	ОБРАЗОВАТЕЛЬНАЯ ПРОГРАММА	22	19/3	18/3	2.2.2	
3.	ОЦЕНКА РЕЗИДЕНТОВ	9	6/3	5/3	3.1.4	
4.	РЕЗИДЕНТЫ	20	14/6	14/5	4.1.6	
5.	АКАДЕМИЧЕСКИЙ ШТАТ/ПРЕПОДАВАТЕЛИ	8	7/1	6/1	5.2.2	
6.	ОБРАЗОВАТЕЛЬНЫЕ РЕСУРСЫ	18	11/7	9/7	6.1.1 6.1.2	
7.	ОЦЕНКА ОБРАЗОВАТЕЛЬНОЙ ПРОГРАММЫ	10	7/3	6/3	7.5.1	
8.	УПРАВЛЕНИЕ И АДМИНИСТРИРОВАНИЕ	11	8/3	8/2	8.4.2	
9.	НЕПРЕРЫВНОЕ УЛУЧШЕНИЕ	2	1/1	1/1		
		114	82/32	114		

Список документов, изученных членами ВЭК в рамках проведения внешней оценки образовательной программы резидентуры

№	Наименования документов/дата утверждения	Количество
1.	Отчет по ОП Радиология	1
2.	Приложение к отчету	1
3.	ОП Радиология	1
4.	Силлабусы	1
5.	Чек листы	10
6.	РУП ОП Радиология	1
7.	План развития	1
8.	Академическая политика	1
9.	Политика приема обучающихся	1
10.	Правила внутреннего распорядка для обучающихся	1
11.	Договор о совместной деятельности	2
12.	Штатное расписание ППС.	1
13.	Список публикации штатных ППС по специальности «Радиология»	1
14.	Повышение профессиональной и педагогической квалификации штатных преподавателей по специальности "Радиология"	1
15.	Повышение педагогической квалификации клинических наставников	1
16.	Укомплектованность научной и учебной литературы	1
17.	Сведения о финансировании и основных расходах на обучение (к Стандарту 8 «Управление и администрирование», п.8.3)	1