



SOUTH KAZAKHSTAN
**MEDICAL
ACADEMY**

THE EDUCATIONAL PROGRAM OF THE RESIDENCY

7R01107

" PULMONOLOGY (ADULT, CHILDREN)"

Shymkent, 2025

ОҢТҮСТІК-ҚАЗАҚСТАН MEDISINA AKADEMIASY «Оңтүстік Қазақстан медицина академиясы» АҚ	 SOUTH KAZAKHSTAN MEDICAL ACADEMY АО «Южно-Казахстанская медицинская академия»
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The educational program of the residency 7R01107 "Pulmonology (adult, children)" was developed by the Department of Phthisiopulmonology and Radiology

Head of the Department:

 Kasaeva L.T.

Protocol No 11a of 17 04 2025

Agreed with the employer:

Chief freelance

Pulmonologist of Shymkent Medical District

 Ibrahim J.T.

Discussed at the meeting of the AC therapeutic profile

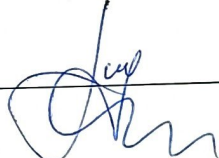
Chairman of the AK

 Kauyzbai J.A.

Protocol no. 4 of " 21 " 04 2025

Approved by the Clinical Council

Chairman, Professor

 Nurmashev B.K.

Protocol No. 8 of " 25 " 04 2025

Approved by the Academic Council

Protocol No. 13 from " 2 " 05 2025

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Passport of the educational program

- 1. The mission of the educational program:** To be recognized as a leader in the field of training highly specialized, competitive pulmonologists.
- 2. The purpose of the educational program:** Training of a competitive pulmonologist with a system of universal, professional competencies, capable and ready for independent professional activity in primary health care; highly specialized pulmonological care; palliative care.

3. Justification of the Educational Program (EP)

Pulmonology is a branch of medicine dealing with the study, diagnosis and treatment of diseases of the bronchopulmonary system.

One of the urgent tasks of modern pulmonology is to create uniform standards for the diagnosis and treatment of various lung diseases. The diagnosis should be based on the data of anamnesis, clinical, laboratory and other types of research.

Modern pulmonology is a field of dynamic development in both scientific and practical medicine. In recent years, there have been changes in the ideas of what a modern pulmonologist should know (erudition), what he should be able to do (practice), and, finally, what level of competence a modern pulmonologist should correspond to.

4. Professional standard, on the basis of which the educational program Professional standard "Pulmonology" was developed. Standard for the organization of pulmonological care in the Republic of Kazakhstan Order of the Ministry of Health of the Republic of Kazakhstan № 46 dated 01/25/2024.

5. Field of professional activity: the field of professional activity of graduates who have mastered the educational program 7R01107 Pulmonology (adult, children) includes diagnosis, treatment, prevention and rehabilitation of diseases of the bronchopulmonary system in adults and children, as well as public health protection in general.

6. Objects of professional activity. Medical organizations providing inpatient and outpatient care, healthcare systems of the Republic of Kazakhstan

General information

1	Registration number	7R01100265
2	The code and classification of the field of education	7R01 Healthcare (medicine)
3	The code and classification of training areas	7R011 Healthcare
4	Group of educational programs	7R007 -Pulmonology (adult, children)

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	Name of the educational program	7R01107 "Pulmonology (adult, children)" (residency)
5	Type of EP	Updated EP
6	The level by MSKO	7
7	The level of the NRK	7
8	ORC Level	7
9	Distinctive features of the EP	compiled according to the professional standard
10	Partner University (SOP)	
	Partner University (DDOP)	
11	List of competencies	CC1 Patient supervision: is able to formulate a clinical diagnosis, prescribe a treatment plan and evaluate its effectiveness based on evidence-based practice at all levels of medical care CC2 Communication and collaboration: He is able to effectively interact with the patient, his environment, and healthcare professionals in order to achieve the best results for the patient. CC3 safety and quality: He is able to assess risks and use the most effective methods to ensure a high level of safety and quality of medical care. CC4 Public health: He is able to act within the legal and organizational framework of the healthcare system of the Republic of Kazakhstan in his specialty, provide basic assistance in emergency situations, and work as part of interprofessional teams to implement national health promotion policies. CC5 Researches: He is able to formulate adequate research questions, critically evaluate professional literature, effectively use international databases in his daily activities, and participate in the work of a research team. CC6 Training and development: He is able to study independently and train other members of a professional team, actively participate in discussions, conferences and other forms of continuous professional development.
12	Learning outcomes (LO)	LO1 He is able to formulate a clinical diagnosis, prescribe a treatment plan and evaluate its effectiveness based on evidence-based practice using an international database and digital tools at all levels of medical care for patients with diseases of the bronchopulmonary system. LO2 He is able to effectively interact with the pulmonological patient, his environment, and healthcare professionals in order to achieve the best results for the patient. LO3 He is able to assess risks and use the most effective methods to ensure a high level of safety and quality of pulmonological care for the population, taking into account the

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		principles of inclusion in order to achieve the best results for the patient. Able to participate in the management of medical records, medical and statistical information. LO4 is able to operate within the legal and organizational framework of the healthcare system of the Republic of Kazakhstan in the specialty "Pulmonology (adult, children)", provide basic assistance in emergency situations, work as part of interprofessional teams to implement national health promotion policies LO5 is able to formulate adequate research questions, critically evaluate professional literature, effectively use international databases in the daily activities of the pulmonological field, and participate in the work of the research team. LO6 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 in the field of pulmonology.
13	The form of education	Full-time
14	The language of education	Russian, Kazakh, English
	Volume of credits	140
16	The duration of education	2 years
17	The qualification awarded	Doctor-pulmonologist adults, children
18	Availability of an appendix to the license for the direction of education	KZ36LAA00011387
19	Availability of EP accreditation	Yes
	Name of the accreditation organization	NU "Independent Agency of Accreditation and rating" IAAR
	The validity period of the accreditation	10.06.2022 -09.06.2027№AB4357
20	Information about the disciplines	Appendixes 1,2

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Appendixes A.1

The matrix of correlation of learning outcomes according to the educational program as a whole with the competencies being formed

	LO1	LO2	LO3	LO4	LO5	LO6
KK1	+	+	+			+
KK2		+		+		
KK3	+		+			
KK4					+	
KK5				+		
KK6					+	+

Appendixes A.2

Matrix of achievability of competencies/learning outcomes

№	The name of the discipline	Brief description	Cycle	Component	Number of credits.	Generated codes
1	Pulmonology outpatient clinics-1, adult	This discipline develops students' knowledge and skills in diagnosis, outpatient treatment, prevention and rehabilitation of patients with bronchopulmonary pathology; interpretation of the results of functional diagnostic methods using digital tools in healthcare; basic principles of bronchodilatory therapy using an international database based on evidence-based practice at all levels of medical care for patients with bronchopulmonary diseases.-the pulmonary system; interaction with the pulmonological patient, his environment, and healthcare professionals in order to achieve the best results for the patient; in the management of medical	PD	MC	18	LO1 LO2 LO3

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		documentation and medical statistical information.				
2	Pulmonology outpatient clinics-2, adult	This discipline forms the student's knowledge and skills in the diagnosis and main clinical symptoms of allergic and occupational lung diseases, sleep breathing disorders, interpretation of the results of diagnostic research methods using an international database and artificial intelligence; on the basic principles of pulmonary rehabilitation and the development of adaptive physical rehabilitation programs using digital tools in healthcare, taking into account the main principles of inclusion at all levels of medical care for patients with diseases of the bronchopulmonary system; conducting expertise and registration of medical documentation for temporary and permanent disability in bronchopulmonary diseases; working as part of interprofessional teams to implement national health promotion policies.	PD	MC	12	LO1 LO2 LO3 LO4
3	Pulmonology outpatient clinics-1, children	Functional diagnostic methods and differential diagnosis of bronchopulmonary diseases. Common diseases in pediatric pulmonology at the outpatient stage. Medical examination of bronchopulmonary diseases in children. Provision of services for compulsory medical insurance.	PD	MC	12	LO1 LO2 LO3
4	Pulmonology outpatient clinics-2, children	Orphan diseases in children. Congenital malformations of the bronchopulmonary system in children. Hereditary diseases of the lungs and bronchi in children. Etiology, clinic, diagnostic algorithm, treatment according to	PD	MC	10	LO1 LO2 LO3 LO4

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		the clinical protocol of the Ministry of Health of the Republic of Kazakhstan. Rehabilitation of children with bronchopulmonary diseases. Using AI to develop personalized treatment and rehabilitation plans based on the individual characteristics of the patient, his responses to treatment and health data.				
5	Pulmonology in the hospital-1, adult	Visual diagnostic methods in pulmonology. Pathomorphology in pulmonology. Pharmacotherapy in pulmonology. Respiratory diseases of the respiratory system in the hospital. Using artificial intelligence to monitor the patient's condition: - Development of mobile applications and wearable devices with AI to monitor the patient's condition in real time. This may include functions for tracking blood oxygen levels, respiratory movements, and other indicators.	PD	MC	22	LO1 LO3 LO6
6	Pulmonology in the hospital-2, adult	Phthisiopulmonology. The use of AI for automated interpretation of radiographs and CT scans of the lungs in order to detect tuberculosis at an early stage, as well as to analyze data on morbidity and evaluate the effectiveness of treatment. Oncopulmonology. Using AI to predict the response to therapy to analyze the genetic data of lung tumors to determine the best treatment approaches. Interstitial and orphan lung diseases. Abnormalities of the bronchopulmonary system and suppurative processes in the lungs. Intensive pulmonology. Interventional pulmonology.	PD	MC	26	LO1 LO2 LO3

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7	Pulmonology in the hospital-1, children	Visual diagnostic methods in pediatric pulmonology. Pharmacotherapy in pediatric pulmonology. Diseases associated with various pathogenic factors. Allergic diseases of the respiratory tract.	PD	MC	18	LO1 LO3 LO6
8	Pulmonology in the hospital-2, children	Congenital anomalies of the bronchopulmonary system and genetically determined diseases in children. Clinical symptoms, diagnosis, differential diagnosis, treatment and prevention from the perspective of evidence-based medicine. Interstitial lung diseases in children. Intensive pulmonology of childhood. Using AI to predict the likelihood of complications in children with respiratory diseases.	PD	MC	16	LO1 LO2 LO3
9	Radiation diagnostics	Radiological syndromes of lung diseases. Radiation diagnostics of emergency conditions in pulmonology. The algorithm of diagnosis in lung diseases. The use of AI in automatic recognition of X-ray patterns, detection of anomalies and acceleration of the diagnostic process.	PD	MC	4	LO1 LO2 LO3 LO4
10	Research management and biostatistics	Planning of research work. The method and methodology of scientific research. Legislative and regulatory bases of scientific research. Stages of scientific research. Methods and methods of intellectual property protection. Professional ethics in the field of science. Creation of AI platforms to provide educational resources and recommendations to patients and healthcare professionals on the treatment and management of lung diseases.				LO5 LO6

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	Total:				138	
	Final examination:				2	
	Total:				140	

Professional standard: "Pulmonology (adult, children)"

Profession card "7.2 Pulmonologist"	Mandatory labor functions:	1. Examination of patients in order to identify bronchopulmonary diseases, diagnosis.
		2. Prescribing treatment to patients with bronchopulmonary diseases, monitoring its effectiveness and safety.
		4. Conducting and monitoring the effectiveness of medical rehabilitation and medical examination of patients with bronchopulmonary diseases.
	Additional labor functions:	5. Carrying out and monitoring the effectiveness of measures for the prevention of bronchopulmonary diseases, the formation of a healthy lifestyle, sanitary and hygienic education and training of patients.
		6. Participation in the management of medical documentation, medical and statistical information.
		1. Continuous professional development 2. Scientific research and analytical work.

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Labor function 1: Examination of patients in order to identify bronchopulmonary diseases, diagnosis..	Skill 1: Detection of bronchopulmonary diseases, determination of the condition, examination of patients (adults, children).	Skills: 1. Collect complaints, medical history, and life history from the patient (or his legal representative). 2. Interpret and analyze information received from the patient (or his legal representative). 3. Perform a physical examination of the patient (examination, percussion, palpation, auscultation). 4. Evaluate the objective condition of the patient. Knowledge: 1. Standard of organization of pulmonological care in the Republic of Kazakhstan. 2. Clinical protocols of diagnosis and treatment of the Republic of Kazakhstan by activity profile. 3. International clinical guidelines on the activity profile. 4. Methods of examination of patients with bronchopulmonary pathology. 5. Anatomical, functional and age-related features of bronchopulmonary diseases in adults and children, normal and pathological.
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	Skill 2: Prescribing laboratory and instrumental examinations to patients (adults, children) with bronchopulmonary diseases in accordance with approved clinical protocols for diagnosis and treatment and international guidelines.	Skills: 1. To justify the necessity and scope of laboratory and instrumental examination of the patient. 2. Conduct a comprehensive functional examination of the respiratory system: - peak flowmetry; - spirometry, including bronchodilatory and bronchodilatory tests; - assessment of smoking status; - assessment of the degree of respiratory failure based on the results of a comprehensive clinical and functional examination using a 6-minute walk test, pulse oximetry, and blood gas determination; - assessment of the severity and control of bronchial asthma, COPD and other bronchopulmonary diseases. 3. To determine indications for detecting respiratory disorders during sleep. 4. Interpret the results of laboratory and instrumental methods of examination of patients in accordance with the Standard of pulmonological care. Knowledge: 1. Standard of organization of pulmonological care in the Republic of Kazakhstan. 2. Clinical protocols of diagnosis and treatment of the Republic of Kazakhstan by activity profile. 3. International clinical guidelines on the activity profile. 4. Methods of laboratory and instrumental studies for the detection of bronchopulmonary diseases. 5. Indications and contraindications for various types of examination in bronchopulmonary pathology.
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	Skill 3: Formulation of the diagnosis and determination of the prognosis of bronchopulmonary diseases in patients (adults, children).	Skills: 1. To carry out differential diagnosis using knowledge of etiology, pathogenesis and clinical picture. 2. Establish a diagnosis based on modern classifications. 3. Identify complications of bronchopulmonary diseases and formulate a concomitant diagnosis. 4. Diagnose conditions that require urgent care. 5. Refer patients with comorbid pathology for consultation with specialized specialists. 6. Identify risk factors and signs of occupational respiratory diseases. 7. To determine the prognostic risks of bronchopulmonary diseases. Knowledge: 1. Etiology and pathogenesis of bronchopulmonary diseases. 2. The algorithm of diagnosis taking into account the ICD, the use of methods of differential diagnosis of patients with bronchopulmonary diseases. 3. Indications for referral of patients with comorbid pathology for consultation with specialized specialists. 4. Methods of diagnosis and differential diagnosis of bronchopulmonary diseases. 5. Criteria for prognostic risks of bronchopulmonary diseases
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Labor function 2: Prescribing treatment to patients with bronchopulmonary diseases, monitoring its effectiveness and safety.	Skill 1: Prescribing treatment to patients (adults, children) with bronchopulmonary diseases in accordance with approved clinical protocols for diagnosis and treatment and international guidelines.	Skills: 1. To draw up and justify a patient's treatment plan, taking into account the patient's age and the presence of concomitant pathology. 2. Prescribe non-drug treatment and therapeutic nutrition to a patient with bronchopulmonary pathology. 3. Prescribe medications based on the clinical picture of the disease and risk factors for its development. 4. Analyze the pharmacological action and interaction of drugs. 5. To determine indications, select a regime and monitor non-invasive methods of respiratory support for patients with respiratory insufficiency. 6. Evaluate the effectiveness and safety of the prescribed treatment. Knowledge: 1. Indications and contraindications for prescribing medications to patients with bronchopulmonary diseases. 2. Indications and contraindications for prescribing respiratory support methods for patients with bronchopulmonary diseases. 3. Undesirable effects of medications used and their prevention.
	Skill 2: Prevention and elimination of adverse events of drug and non-drug therapy, complications of diagnostic and therapeutic manipulations in patients (adults, children) with bronchopulmonary diseases.	Skills: 1. To prevent or eliminate undesirable effects of drug and non-drug therapy. 2. To prevent or eliminate complications of diagnostic and therapeutic manipulations. Knowledge: 1. Methods of prevention and treatment of adverse events of drug and non-drug therapy in patients with bronchopulmonary diseases. 2. Methods of prevention and treatment of complications of diagnostic and therapeutic manipulations in patients with bronchopulmonary diseases.

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	Skill 3: Providing emergency medical care to patients (adults, children) with bronchopulmonary diseases.	Skills: 1. Provide emergency medical care to patients with bronchopulmonary diseases, including in emergency situations. Knowledge: 1. Principles and methods of emergency medical care for patients with bronchopulmonary diseases.
	Skill 4: Participation in providing palliative care to patients (adults, children) with bronchopulmonary diseases.	Skills: 1. Drawing up a palliative care plan for patients with bronchopulmonary diseases. 2. Training of PHC medical staff in palliative care methods for patients with bronchopulmonary diseases. Knowledge: 1. The standard of organization of palliative care. 2. Methods of palliative care for bronchopulmonary diseases.
Labor function 4: Conducting and monitoring the effectiveness of medical rehabilitation and medical examination of patients with bronchopulmonary diseases.	Skill 1: Conducting medical rehabilitation activities for patients (adults, children) with bronchopulmonary diseases.	Skills: 1. To determine medical indications for medical rehabilitation measures for patients with bronchopulmonary diseases. 2. Develop an action plan for the medical rehabilitation of patients. 3. To carry out measures for the medical rehabilitation of patients together with rehabilitologists in healthcare organizations that provide care to patients with bronchopulmonary diseases. 4. Evaluate the effectiveness and safety of rehabilitation measures in patients. Knowledge: 1. Rules of rehabilitation treatment and medical rehabilitation. 2. Methods of rehabilitation treatment and medical rehabilitation.
	Skill 2: Accounting and dynamic monitoring of patients (adults, children) with bronchopulmonary	Skills: 1. To keep records of patients with bronchopulmonary diseases. 2. To conduct dynamic monitoring of patients with bronchopulmonary diseases.

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	diseases.	Knowledge: 1. Rules of accounting and dynamic monitoring of patients with bronchopulmonary diseases.
Labor function 5: Conducting and monitoring the effectiveness of measures for the prevention of bronchopulmonary diseases, the formation of a healthy lifestyle, sanitary and hygienic education and training of patients.	Skill 1: Carrying out work on the prevention of bronchopulmonary diseases, promoting a healthy lifestyle.	Skills: 1. To participate in the organization and conduct of events aimed at the prevention of bronchopulmonary diseases, reducing morbidity, disability, and mortality from bronchopulmonary diseases of all age groups of the population. 2. Participate in the organization of "respiratory schools" for the purpose of educating patients and their caregivers. 3. To participate in the promotion of a healthy lifestyle among the population. Knowledge: 1. Fundamentals of a healthy lifestyle and methods of its formation. 2. Forms and methods of sanitary and educational work among patients (their legal representatives), medical workers on the prevention of bronchopulmonary diseases. 3. Principles and features of prevention of the occurrence and progression of bronchopulmonary diseases.
Labor function 6: Participation in the management of medical documentation, medical and statistical information.	Skill 1: Maintaining medical records, analyzing medical and statistical information	Skills: 1. Plan your work and compile a report on the analysis of your own performance indicators. 2. Maintain medical records, including in electronic form, and monitor the quality of its management. 3. To analyze the medical and statistical indicators of the work of the specialized medical department. 4. Use patients' personal data and information in accordance with the law. 5. Use information systems in accordance with the established procedure. Knowledge: 1. Order of the Acting Minister of Health of the Republic of Kazakhstan dated October 30, 2020 No. KR DSM-175/2020 "On approval of Accounting Documentation forms in the field of healthcare, as well as instructions for completing them (registered with the Ministry of Justice of the Republic of Kazakhstan on November 4, 2020 No. 21579).

		2. Order of the Minister of Health of the Republic of Kazakhstan dated December 22, 2020 No. KR DSM-313/2020 "On approval of forms of accounting documentation in the field of healthcare" (registered with the Ministry of Justice of the Republic of Kazakhstan on December 23, 2020 No. 21879). 3. Order of the Minister of Health of the Republic of Kazakhstan dated December 10, 2020 No. KR DSM-244/2020 "On approval of the rules for maintaining primary medical records and submitting reports" (registered with the Ministry of Justice of the Republic of Kazakhstan on December 11, 2020 No. 21761). 4. Electronic accounting and documentation systems. 5. Confidentiality of patients' medical information.
Additional labor function 1: Continuous professional development	Skill 1: Striving for professional improvement	Skills: 1. Participate in professional training events: conferences, seminars, webinars, advanced training courses. 2. Participate in academic and scientific activities. 3. Participate in the work of professional associations, committees, and working groups to discuss health issues and share experiences with colleagues. Knowledge: 1. Order of the Minister of Health of the Republic of Kazakhstan dated December 21, 2020 No. KR DSM-303/2020 "On Approval of the Rules for additional and non-formal education of healthcare Professionals, qualification requirements for organizations implementing educational programs for additional and non-formal education in the field of healthcare, as well as the rules for recognizing the learning outcomes obtained by healthcare professionals through additional and non-formal education (registered with the Ministry of Justice of the Republic of Kazakhstan on December 22, 2020 No. 21847). 2. Order of the Minister of Health of the Republic of Kazakhstan dated December 20, 2020 No. KR DSM-283/2020 "On approval of the rules for confirming the results of continuous professional development of healthcare workers" (registered with the Ministry of Justice of the Republic of Kazakhstan on December 22, 2020 No. 21843). 3. Opportunities for networking and communication with colleagues from their professional field. 4. Current trends, research and development in a specialized field.
Additional labor	Skill 1:	Skills:

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function 2: Scientific research and analytical work.	Participation in research and scientific projects	1. Formulate research questions, develop hypotheses, collect and analyze data, conduct statistical analysis and draw conclusions from the research results. 2. Observe the principles of fairness, informed consent, confidentiality, and protection of the rights and well-being of patients participating in research. 3. To conduct a search and analysis of literature, a critical assessment of research data. 4. Possess research design skills, including research plan and design, selection of methodology, definition of inclusion and exclusion criteria, development of a protocol and data collection scheme. 5. Submit research results in writing and publish articles in scientific journals. Knowledge: 1. Fundamentals of scientific method and scientific research. 2. Ethical principles, regulatory norms and procedures related to human research. 3. Statistical methods, methods of data processing and evaluation of the statistical significance of the results.
	Skill 2: Analysis of medical statistics	Skills: 1. Analyze medical statistical indicators in the field of respiratory diseases. 2. Analysis of the work of the organization providing specialized assistance. Knowledge: 1. Methods of health statistics, methods of data processing and evaluation of the statistical significance of the results.
Personal competence requirements:	Empathy Communication skills Tolerance and respect Collaboration and teamwork Stress resistance Reflection and introspection Compliance with professional ethics Openness and willingness to learn Activity and initiative Striving for professional development	

Head of the educational and methodological center



B.Z.Doltayeva