

"SOUTH KAZAKHSTAN MEDICAL ACADEMY" JSC

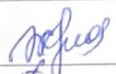


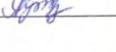


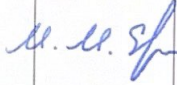



SOUTH KAZAKHSTAN  
**MEDICAL  
ACADEMY**

EDUCATIONAL PROGRAM OF THE RESIDENCY  
7R01142 "CLINICAL PHARMACOLOGY"

Shymkent, 2024

The educational program of the residency "Clinical Pharmacology" was developed on the basis of the order of the Minister of Health of the Republic of Kazakhstan dated January 25, 2024 No. 46 "On approval of professional standards in the field of healthcare".

Post	Full name	Signature
<b>Developed</b>		
Faculty of the Department of Pharmacology, Pharmacotherapy and Clinical Pharmacology		
Head of the Department, Professor, Candidate of Pharmaceutical Sciences	Toxanbayeva Zh.S.	
Candidate of Medical Sciences	Tashimova S.A.	
Representative of practical healthcare	Nurzhanov G.H.	
Resident of the EP "Clinical Pharmacology"	Sultanbekova A.N.	
Minutes of the meeting of the department № 6 from «25» «01» 2024 г.		
<b>Discussed at the meeting of the Residency Committee Chairman of the Educational Program Committee</b> Protocol № 5 from «16» «01» 2024 г.	Kauyzbai Zh.A.	
<b>Approved by the Clinical Council Chairman of the Clinical Council</b> Protocol № 8 from «29» «01» 2024 г.	Kauyzbai Zh.A.	
<b>Approved by the First Vice-Rector of JSC SKMA,</b> <b>The first vice-rector of JSC SKMA</b> Protocol № _____ from 30.01.2024 г.	Yesirkepov M.M.	
<b>Approved by the Academic Council</b> Protocol № 14 from «31» «01» 2024 г.		

ОНТҮСТІК ҚАЗАҚСТАН MEDISINA АКАДЕМИЯСЫ «Оңтүстік Қазақстан медицина академиясы» АҚ	 SOUTH KAZAKHSTAN MEDICAL ACADEMY АО «Южно-Казакстанская медицинская академия»	041/15 1 page of 11
Committee Of The Educational Program "Therapeutic Profile" Educational program "Clinical Pharmacology"		

### General information

№	Characteristics of the EP	Data
1	Registration number	7R01100277
2	Code and classification of the field of education	7R01 Health care (medicine)
3	Code and classification of training areas	7R011 Healthcare
4	Group of educational programs	R042 Clinical pharmacology
5	Code, name of the educational program	7R01142 Clinical pharmacology
6	Type of EP	New educational program
7	The purpose of the EP	Training of clinical pharmacologists for the healthcare system in order to ensure the effective, safe and economically justified use of medicines in medical organizations.
8	Code and classification of training areas	7
9	Group of educational programs	7
10	Name of the educational program	7.1
11	Distinctive features of the EP	no
	Partner University	no
	Partner University	no
12	List of competencies	K 1 Patient supervision: analysis of the patient's appointment. K 2 Communication and collaboration: identification and analysis of undesirable drug reactions. K 3 Safety and quality: analytical study of medicines. K 4 Public health: using epidemiological methods to study the effectiveness and safety of medicines K 5 of the Study: when prescribing medicines, use the principles of evidence-based medicine. K 6 Training and development: working with databases and information sources
13	Learning outcomes	LO1 is able to provide advisory assistance to doctors and patients on the rational choice and use of medicines; to identify, register and prevent adverse reactions of medicines. LO 2 is able to effectively interact with the patient and his relatives, healthcare professionals in matters of rational pharmacotherapy in order to achieve the best results for the patient. LO3 is able to monitor the effectiveness and safety of the use of medicines; to conduct pharmacotherapy based on the choice of medicines, taking into account the pathological and physiological profile of the patient using international guidelines and clinical protocols. LO4 is able to act according to the principles of organizational and methodological work of a clinical

		<p>pharmacologist in healthcare organizations on the rational use of medicines and drug provision, work as part of interprofessional teams to implement the policy of strengthening the health of the nation.</p> <p>LO5 Research: he is able to formulate adequate research questions, critically evaluate the professional literature on clinical pharmacology, conduct pharmacoepidemiological and pharmaco-economical research in healthcare organizations.</p> <p>LO6 is able to train independently and train other members of a professional team, actively participate in discussions, conferences and other forms of continuous professional development in the field of clinical pharmacology</p>
14	Form of training	full
15	Language of instruction	-time Russian, Kazakh
16	Volume of loans	140
17	Duration of training	2 years
17	Qualification awarded	Doctor-clinical pharmacologist
19	Existence of the annex to the license for the direction of personnel training	KZ36LAA00011387 (016)
20	Availability of EP accreditation	Yes
	Name of the accreditation body	IAAR
	The validity period of the accreditation	26.05.2023-25.05.2028
21	Information about disciplines	Appendix 1.2

### Appendix 1.1

#### 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
<b>K1</b>	+	+	+			
<b>K2</b>		+		+		
<b>K3</b>			+		+	
<b>K4</b>				+		
<b>K5</b>					+	
<b>K6</b>						+

### Appendix 1.2

ONTUSTIK-KAZAKHSTAN MEDISINA AKADEMIASY «Оңтүстік Қазақстан медицина академиясы» АҚ	 SOUTH KAZAKHSTAN MEDICAL ACADEMY АО «Южно-Казакхстанская медицинская академия»
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### Matrix of achievability of competencies/learning outcomes

№	Name of the discipline	A brief description of the discipline (30-50 words)	Cycle	Component	Number of credits	Formed LO
<b>The cycle of core disciplines</b>						
<b>Required component</b>						
1	Clinical pharmacology (general issues of clinical pharmacology and clinical and pharmacological characteristics of individual groups and drugs)	Principles of organization and functioning of clinical and pharmacological services in healthcare organizations of the Republic of Kazakhstan. Regulatory legal acts of the clinical and pharmacological service. Clinical pharmacology as a clinical specialty. International name of medicines. Original and reproduced medicines. Registration and regulation of medicines in the Republic of Kazakhstan. Innovative dosage forms and drug delivery systems.	PD	UC	38	LO1 LO3
2	Clinical pharmacology and principles of rational pharmacotherapy in pediatric practice and in special groups of patients	Features of pharmacodynamics and pharmacokinetics in children and newborns. Features of dosage, dosage forms and means of delivery in children. Rational therapy of diseases in children based on the principles of evidence-based medicine. Clinical and pharmacological approaches, taking into account individual characteristics of pharmacokinetics and pharmacodynamics, to the choice and rational use in neonatology.	PD	UC	15	LO1 LO3
3	Clinical pharmacology and principles of rational pharmacotherapy for certain diseases	Clinical pharmacology and principles of rational pharmacotherapy for oncological diseases; immunodeficiency diseases, orphan diseases, autoimmune diseases. Clinical pharmacology and principles of rational pharmacotherapy in diseases requiring surgical intervention. Principles of rational pharmacotherapy in the elderly.	PD	UC	42	LO1 LO2 LO3
4	Evaluation of the use of medicines and clinical and pharmacological examination. Undesirable drug reactions.	Rules for evaluating the rational use of medicines. Rules for the examination of medicines. Evaluation of medicines from the standpoint of evidence-based medicine. Pharmacokinetics and pharmacodynamics of drugs. Indicators for evaluating the use of medicines. Pharmacovigilance. Diagnosis, registration, prevention and correction of undesirable drug reactions. Pharmacogenetic studies.	PD	UC	12	LO3 LO6
5	Search, evaluation	The place of clinical protocols,	PD	UC	8	LO4




	and adaptation of international recommendations, guidelines and clinical protocols in the Republic of Kazakhstan	recommendations and guidelines in clinical practice developed on the basis of evidence-based medicine. Work with the MedElement reference system, electronic resources of the Republican Center for Health Development, electronic resource Medi.ru . Methods of implementation and evaluation of the effectiveness of the implementation of clinical protocols in practical healthcare. Experience of application and adaptation of international recommendations in the healthcare system of the Republic of Kazakhstan.				LO6
6	Rational antimicrobial therapy and antibiotic prophylaxis. Antimicrobial resistance problems	Pharmacodynamics, pharmacokinetics, spectrum of antimicrobial activity. Principles of choice (empirical and etiologic), determination of the dosage regimen depending on the localization of infection and severity of the condition, kidney function. Methods for evaluating the effectiveness and safety of antimicrobial drugs based on the principles of evidence-based medicine. A combination of antimicrobial drugs and interactions when co-administered with drugs of other groups. Pharmacological incompatibility in the appointment of antimicrobial agents.	PD	UC	9	LO1 LO2
7	Stages of conducting various types of clinical trials of medicines. Personalized pharmacotherapy (therapeutic drug monitoring, pharmacogenetics )	The purpose of clinical research and its stages. Methodology of organization, conduct and audit of clinical trials. Development of a protocol for research and testing of medicines. International and national standards GLP, GMP and GCP. Rules for providing medicines to medical organizations. Development of a hospital drug form. Analysis of the need and preparation of an application for medicines.	PD	UC	10	LO4 LO5 LO6
<b>The cycle of core disciplines</b>						
<b>Component of choice</b>						
8	Clinical pharmacology in obstetrics and gynecology	Clinical pharmacology of medicines for treatment in obstetrics and gynecology. Rational use of medicines for anomalies of labor activity, placental insufficiency, uterine bleeding. Rational pharmacotherapy of diseases in pregnant women and maternity women; toxicosis and gestosis; menopause and menopause. Modern methods of hormonal contraception.	PD	EC	4	LO1 LO3 LO6
9	Clinical pharmacology in anesthesiology and intensive care	Rational therapy of pain syndrome and postoperative pain. Rational therapy of emergency conditions. Rational use of medicines in the complex treatment of	PD	EC	4	LO1 LO3

		collapse, fainting and shock states. Rational use of medicines used in the anesthesiological provision of surgical intervention. Medicines used in pediatric anesthesiology.				
10	Regulation of medicines. Counterfeit medicines. Advertising of medicines.	Principles of operation of the control and licensing system for the registration of new domestic and foreign medicines. Regulation of medicines. Falsification of medicines: definition; factors contributing to falsification; background of the issue and the need to combat falsified medicines. Advertising of medicines. Rules for issuing permits for advertising medicines. Critical analysis and evaluation of advertising information.	PD	EC	4	LO4 LO6
11	Rational antibiotic therapy in newborns	This discipline examines the role of the use of antibacterial drugs in newborns in order to increase the effectiveness and safety of their use and includes basic strategies to improve the rational use of antibacterial drugs.	PD	EC	4	LO1 LO2 LO3
	Total:				138	
	Final certification:				2	
	Total:				140	

**The matrix of achievement of LO by various teaching methods**

LO	Teaching and learning methods	
PO1 is able to provide advisory assistance to doctors and patients on the rational choice and use of medicines; to identify, register and prevent adverse reactions of medicines.	Analysis of the material, feedback from the resident	Simulation of situations. Maintaining medical records
PO2 is able to effectively interact with the patient and his relatives, healthcare professionals in matters of rational pharmacotherapy in order to achieve the best results for the patient.	A reflective diary	Maintaining medical records
RO3 is able to monitor the effectiveness and safety of the use of medicines; to conduct pharmacotherapy based on the choice of medicines, taking into account the pathological and physiological profile of the patient using international guidelines and	Supervision of clinical work	

ONTUSTIK-QAZAOSTAN MEDISINA AKADEMIASY «Оңтүстік Қазақстан медицина академиясы» АҚ	 SOUTH KAZAKH-ISTAN MEDICAL ACADEMY АО «Южно-Казахстанская медицинская академия»
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clinical protocols.		
RO4 is able to act according to the principles of organizational and methodological work of a clinical pharmacist in healthcare organizations on the rational use of medicines and drug provision, work as part of interprofessional teams to implement the policy of strengthening the health of the nation.	Supervision of clinical work Development of a draft drug form	Maintaining medical records
RO5 Research: he is able to formulate adequate research questions, critically evaluate the professional literature on clinical pharmacology, conduct pharmacoepidemiological and pharmaco-economical research in healthcare organizations.	"Magazine Club"	Writing theses, articles Public appearances
RO6 is able to train independently and train other members of a professional team, actively participate in discussions, conferences and other forms of continuous professional development in the field of clinical pharmacology.	Observation	

#### The matrix of compliance with LO assessment methods

LO	Assessment methods	
PO1 is able to provide advisory assistance to doctors and patients on the rational choice and use of medicines; to identify, register and prevent adverse reactions of medicines.	Testing Oral interview	Essay (short and long) The short answer
PO2 is able to effectively interact with the patient and his relatives, healthcare professionals in matters of rational pharmacotherapy in order to achieve the best results for the patient.	OSCE (with skill check stations). A mini-clinical exam.	A long-lasting case Keeping diaries
RO3 is able to monitor the effectiveness and safety of the use of medicines; to conduct pharmacotherapy based on the choice of medicines, taking into account the pathological and physiological profile of the patient using international guidelines and clinical protocols.	Analysis of records in the medical history Analysis of the records of the doctor's activities	Analysis of prescriptions
RO4 is able to act according to the principles of organizational and methodological work of a clinical pharmacist in healthcare organizations on the rational use of medicines and drug	Standardized patients	Patient reviews Feedback from other students Rating 3600



provision, work as part of interprofessional teams to implement the policy of strengthening the health of the nation.		
RO5 Research: he is able to formulate adequate research questions, critically evaluate the professional literature on clinical pharmacology, conduct pharmacoepidemiological and pharmaco-economical research in healthcare organizations.	Summary/presentation	Publications
RO6 is able to train independently and train other members of a professional team, actively participate in discussions, conferences and other forms of continuous professional development in the field of clinical pharmacology.	Observation	

**Work plan for the entire training period**

Cycle of disciplines/	Discipline code	Name of disciplines/modules	Number of credits	Number of credits	Classroom	RSRR		1 year of study	2 year of study	Form of control	FC
						srrn	srr				
II/IV/PD		<b>CYCLE OF PROFILE DISCIPLINES</b>	<b>138</b>	<b>4140</b>							
		<b>Required component</b>	<b>134</b>	<b>4020</b>							
PD	UC	Clinical pharmacology and principles of rational pharmacotherapy for certain diseases	42	1260	252	82	126		42	exam	
	R-OILSKFENZhRF	Evaluation of the use of medicines and clinical and pharmacological examination. Undesirable drug reactions. Pharmacovigilance.	12	360	72	52	36		12	exam	



R-KF	Clinical pharmacology (general issues of clinical pharmacology and clinical and pharmacological characteristics of individual groups and drugs). The formulary system.	38	1140	228	98	114	38	exam
		9	270	54	89	27	9	exam
R-EPKILSPF	Stages of conducting various types of clinical trials of medicines (drugs). Personalized pharmacotherapy (therapeutic drug monitoring, pharmacogenetics)	10	300	60	10	30	10	exam
R-POAMRRKPLRPDM	Search, evaluation and adaptation of international recommendations, guidelines and clinical treatment protocols in the Republic of Kazakhstan from the standpoint of evidence-based medicine	8	240	48	68	24	8	exam
R-KFPRFPPOP	Clinical pharmacology and principles of rational pharmacotherapy in pediatric practice and in special groups of patients	15	450	90	15	45	15	exam
<b>Component of choice</b>		<b>4</b>	<b>120</b>	<b>24</b>	<b>84</b>	<b>12</b>	<b>4</b>	

	EC								exam
	R-KFAG	Клиническая фармакология в акушерстве и гинекологии							
	R-	Клиническая фармакология в анестезиологии и реанимации							
	R-KFAR	Регламентирование лекарственных средств.							
	R-RLSFLSRLS	Фальсифицированные лекарственные средства.							
		Реклама лекарственных средств							
	R-RATN	Rational antibiotic therapy in newborns							
		<b>in total</b>	<b>138</b>	<b>4140</b>	<b>828</b>	<b>898</b>	<b>414*</b>		<b>50</b>
AA/ПА IC		<b>INTERIM CERTIFICATION</b>							
KA/ПА FC		<b>FINAL CERTIFICATION</b>	<b>2</b>	<b>60</b>				<b>2</b>	
		<b>total</b>	<b>140</b>	<b>4200</b>	<b>828</b>	<b>898</b>	<b>414</b>	<b>70</b>	<b>50</b>