



SOUTH KAZAKHSTAN  
**MEDICAL  
ACADEMY**

**EDUCATIONAL PROGRAM OF RESIDENCY  
7R01108 Endocrinology (adults, children)**

**Shymkent 2025 y.**

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| ОҢТҮСТІК ҚАЗАҚСТАН<br><b>MEDISINA<br/>         AKADEMIASY</b><br>«Оңтүстік Қазақстан медицина академиясы» АҚ |  SOUTH KAZAKHSTAN<br><b>MEDICAL<br/>         ACADEMY</b><br>АО «Южно-Казахстанская медицинская академия» |                 |
| <b>Cathedra of Therapy and Cardiology</b>                                                                    |                                                                                                                                                                                           | 51/11           |
| <b>Educational program 7R01108 Endocrinology (adults, children)</b>                                          |                                                                                                                                                                                           | 2 page. from 16 |

The educational program of the residency 7R01108 Endocrinology (adults, children) was developed by the Department of Therapy and Cardiology

Head of the Department \_\_\_\_\_ Asanova G.K.

Protocol № 12 from " 18 " 04 2025 y.

**Agreed with the employer:**

Head of the Department of Endocrinology  
 Regional Clinical Hospital,  
 Candidate of Medical Sciences \_\_\_\_\_



Isabekov M.B.

Discussed at the meeting of the AC  
 therapeutic profile

Chairman of the AK, Associate Professor \_\_\_\_\_ Kauyzbai J.A.

Protocol № 4 from " 21 " 04 2025 y.

**Approved by the Clinical Council**

Chairman, Professor \_\_\_\_\_ B.K.Nurmashev

Protocol № 8 from " 25 " 04 2025 y.

**Approved by the Academic Council**

Protocol № 13 from " 02 " 05 2025 y.

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| <p>ОҢТҮСТІК ҚАЗАҚСТАН<br/>MEDISINA<br/>AKADEMIASY<br/>«Оңтүстік Қазақстан медицина академиясы» АҚ</p> |  | <p>SOUTH KAZAKHSTAN<br/>MEDICAL<br/>ACADEMY<br/>АО «Южно-Казахстанская медицинская академия»</p> |
| Cathedra of Therapy and Cardiology                                                                    |                                                                                   |                                                                                                  |
| Educational program 7R01108 Endocrinology (adults, children)                                          |                                                                                   | 51/11<br>3 page. from 16                                                                         |

### 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 endocrinologists.

2. The purpose of the educational program:

Training of doctors who have professional knowledge and independently provide highly specialized care for patients with endocrine diseases in accordance with modern principles of evidence-based medicine.

3. Justification of the OP:

Cardiology is a medical science that deals with the prevention, detection, and treatment of heart diseases and the circulatory system in general. A cardiologist is a doctor who specializes in this field and is also engaged in restoring the functioning of the heart, which is disrupted by diseases of other internal organs. The specialist's task is to timely detect and eliminate risk factors for cardiovascular pathologies, prevent their occurrence, select the necessary treatment and monitor the condition of patients, and rehabilitate cardiological and cardiac surgical patients.

The need of medical organizations for cardiologists in order to improve the quality of cardiological care is the rationale for the discovery and the need to train cardiologists, primarily at the regional level, taking into account the main strategies and programs for the development of the healthcare system at the international, national and regional levels.

4. The professional standard on the basis of which the educational program is developed:

- Order of the Minister of Health of the Republic of Kazakhstan dated 07.04.2022 No. KR DSM-63 "On approval of state mandatory standards for levels of education in the field of healthcare";
- Professional standard "Endocrinology (adults, children)" (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".
- On Amendments and additions to the Order of the Minister of Health of the Republic of Kazakhstan "On approval of the list of medical specialties of residency programs" dated May 25, 2021 No. KR DSM - 43 and "On approval of standard training programs in medical and pharmaceutical specialties" dated January 9, 2023 No. 4. (Order of the Minister of Health of the Republic of Kazakhstan dated 10 November 2023, No. 164).

5. The field of professional activity. Healthcare

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



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| Cathedra of Therapy and Cardiology                                                                         |  | 51/11                                                                                                                                                                                   |
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### General information

|    |                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|----|-------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1  | Registration number                                   | 7R09100113                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 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                         | R008 Endocrinology for adults, children                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 5  | Code, name of the educational program                 | 7R01108 Endocrinology (adults, children)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 6  | Type Op                                               | Updated educational program                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 7  | ISCED level                                           | 7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 8  | The level of the NRK                                  | 7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 9  | ORC Level                                             | 7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 10 | Distinctive features of the OP                        | compiled according to the professional standard                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|    | Partner University (SOP)                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|    | Partner University (SOP)                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 11 | List of competencies                                  | <p><b>CC1 Patient supervision:</b> formulate a clinical diagnosis, prescribe a treatment plan, and evaluate its effectiveness based on evidence-based practice in highly specialized endocrinological care.</p> <p><b>CC 2 Communication and collaboration:</b> interact effectively with the endocrinological patient, his environment, and healthcare professionals in order to achieve the best results for the patient</p> <p><b>CC 3 Professionalism:</b> assess risks and use the most effective methods to ensure a high level of safety and quality of highly specialized endocrinological care.</p> <p><b>CC 4 Public health:</b> act within the legal and organizational framework of the healthcare system of the Republic of Kazakhstan in their specialty, provide basic endocrinological care in emergency situations, work as part of interprofessional teams to implement national health promotion policies</p> <p><b>CC 5 Research:</b> formulate adequate research questions, critically evaluate professional literature, effectively use international databases in their daily activities, participate in the work of the research team</p> <p><b>CC 6 Training and development:</b> to study independently and train other members of the professional team, actively</p> |



|    |                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|----|--------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    |                                                                          | participate in discussions, conferences and other forms of continuous professional development.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 12 | Learning outcomes:                                                       | <p><b>LO1</b> able to act within the legal and organizational framework of the healthcare system of the Republic of Kazakhstan under the educational program “Endocrinology (adult, children's)”, provide basic assistance in emergency situations, work as part of interprofessional teams to implement national health promotion policies.</p> <p><b>LO2</b> 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 endocrinology .</p> <p><b>LO3</b> able to effectively interact with the patient with endocrine pathology, his environment, health professionals in order to achieve the best results for the patient</p> <p><b>LO4</b> able to assess risks and use the most effective methods to ensure a high level of safety and quality of medical endocrinological care</p> <p><b>LO5</b> 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 for patients with diseases of the endocrine system.</p> <p><b>LO6</b> able to formulate adequate research questions, critically evaluate professional literature, effectively use international databases in his daily activities, and participate in the work of the research team.</p> |
| 13 | The form of study                                                        | is full-time                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 14 | The language of instruction                                              | <i>Kazakh and Russian</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 15 | Volume of loans                                                          | 210                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 16 | The duration of the training:                                            | 2 year                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 17 | Degree awarded, qualification                                            | Cardiologist for adults and children                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 18 | Availability of an appendix to the license for the direction of training | KZ36LAA00011387                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 19 | Availability of OP accreditation                                         | Have                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|    | Name of the accreditation body                                           | IAAR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|    | The validity period of the accreditation                                 | № KZ73LAA00011788. 10.06.2022y.-09.06.2027y                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 20 | Information about the disciplines                                        | Application 1.2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

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| Cathedra of Therapy and Cardiology                                                          |  | 51/11                                                                                                                                                                    |
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Application 1.1

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

|     | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 |
|-----|-----|-----|-----|-----|-----|-----|
| KK1 | +   | +   | +   |     |     |     |
| KK2 |     | +   |     | +   |     |     |
| KK3 |     |     | +   |     | +   |     |
| KK4 |     |     |     | +   |     |     |
| KK5 |     |     |     |     | +   |     |
| KK6 |     |     |     |     |     | +   |

Application 1.2

Matrix of achievability of competencies/learning outcomes

| №                                                                   | Name of the discipline                | A brief description of the discipline                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Cycle | Component | Number of credits | Formed RO                              |
|---------------------------------------------------------------------|---------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-----------|-------------------|----------------------------------------|
| <b>Cycle of Profiling discipline</b><br><b>Compulsory component</b> |                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |       |           |                   |                                        |
| 1                                                                   | Childhood diseases                    | Prenatal and postnatal periods of child development, depending on the functioning of the endocrine system. Conducting an initial examination of the child, making a diagnosis, dynamic observation, conducting a medical examination. Differential diagnosis of endocrine diseases in children from other childhood diseases with clinically similar symptoms. Determination of emotional and personal characteristics of sick children. Measures aimed at early detection of disorders of the endocrine system in children. | PD    | UC        | 6                 | LO4<br>LO5<br>LO6                      |
| 2                                                                   | Endocrinology in the hospital (adult) | Epidemiology of endocrine diseases. Nomenclature and classification of endocrine diseases. Skills in accurate diagnosis formulation according to ICD-10 when identifying endocrine system pathologies. Methods of examination of patients with endocrine pathology. Differential diagnosis of diseases of the endocrine system. Basic principles of treatment of diseases of the endocrine system. Standards. Clinical protocols and                                                                                         | PD    | UC        | 42                | LO1<br>LO2<br>LO3<br>LO4<br>LO5<br>LO6 |



|   |                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |    |    |    |                                        |
|---|--------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|----|----|----------------------------------------|
|   |                                            | clinical recommendations of the Republic of Kazakhstan on endocrine pathology. Rehabilitation of patients with diseases of the endocrine system in stationary conditions. Research in endocrinology.                                                                                                                                                                                                                                                                                                                            |    |    |    |                                        |
| 3 | Endocrinology in the hospital (children's) | Specialized medical inpatient care for endocrine diseases in children. Age-related and genetic aspects of endocrine diseases in children. Features of endocrine diseases in childhood. Selection and conduct of diagnostic tests. Principles of treatment. Psychological assistance to patients and their relatives with endocrine diseases in children. Rehabilitation of patients with endocrine pathology in inpatient conditions.                                                                                           | PD | UC | 20 | LO1<br>LO2<br>LO3<br>LO4<br>LO5<br>LO6 |
| 4 | Endocrinology outpatient (adult)           | Organization of outpatient care for patients with endocrine pathology. Stationary substituting technologies. Clinical protocols of the Republic of Kazakhstan, clinical recommendations of international medical communities on topical diseases of the endocrine system. Prevention and rehabilitation of patients with endocrine diseases. Clinical examination of patients with endocrine diseases. Medical and social expertise of patients with endocrine diseases. Portal "Bureau of Hospitalization". Prevention issues. | PD | UC | 20 | LO2<br>LO3<br>LO5                      |
| 5 | Endocrinology outpatient (children's)      | Organization of outpatient care for children with endocrine pathology. Features of the course of endocrine diseases in childhood. Issues of timely diagnosis, treatment, prevention, and rehabilitation using clinical protocols and clinical recommendations for endocrine diseases in pediatrics. Inpatient-replacement and consultative-diagnostic care in pediatric endocrinology.                                                                                                                                          | PD | UC | 10 | LO2<br>LO3<br>LO5                      |
| 6 | Highly specialized endocrinological        | Highly specialized care for patients with endocrine diseases in accordance                                                                                                                                                                                                                                                                                                                                                                                                                                                      | PD | UC | 6  | LO1<br>LO4<br>LO6                      |



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| Cathedra of Therapy and Cardiology                                                          |  | 51/11                                                                                                                                                                    |
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|---|-------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|----|----|-------------------|
|   | care                                                  | with modern principles of evidence-based medicine. The main medical treatment-diagnostic and preventive interventions for the provision of highly specialized medical care to the population with endocrine diseases and endocrinopathies.                                                                                                                                                                                                                                                                                                                                                       |    |    |    |                   |
| 7 | Internal disease                                      | The relevance of creating a multidisciplinary team of therapeutic doctors in the diagnosis, management and treatment of patients with endocrine diseases. To collect a complete medical history from patients (adults and children) to identify endocrine system pathologies. Principles of early detection of diseases of internal organs in patients with endocrine diseases. Forecasting the course of internal diseases and prevention of their complications. Organization of preventive measures aimed at reducing the incidence of internal diseases in patients with endocrine diseases. | PD | UC | 12 | LO4<br>LO5<br>LO6 |
| 8 | Radiation and radioisotope diagnostics                | The importance of imaging methods and radioisotope diagnostics of endocrinological patients. Optimal choice of visual diagnostic methods in endocrinology. Physical fundamentals of ultrasound diagnostics. Interpretation of the results of functional diagnostics of patients with endocrine system pathology. New technologies in ultrasound diagnostics. Features of visual diagnostics in children.                                                                                                                                                                                         | PD | UC | 8  | LO2<br>LO4<br>LO5 |
| 9 | Reproductive endocrinology, infertility and pregnancy | Modern issues of "Reproductive Endocrinology". Female reproductive endocrinology. Male reproductive endocrinology. Diagnosis and treatment of reproductive disorders in endocrine patients. A set of tools and technologies aimed at creating conditions for the protection of the health of citizens with endocrine pathology. Artificial methods of fertilization, in vitro fertilization (IVF).                                                                                                                                                                                               | PD | UC | 10 | LO4<br>LO5<br>LO6 |

|                                      |                                                      |                                                                                                                                                                                                                                                                                                                                              |    |    |            |                   |
|--------------------------------------|------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|----|------------|-------------------|
|                                      | Total:                                               |                                                                                                                                                                                                                                                                                                                                              |    |    |            |                   |
| <b>Cycle of Profiling discipline</b> |                                                      |                                                                                                                                                                                                                                                                                                                                              |    |    |            |                   |
| <b>A component of choice</b>         |                                                      |                                                                                                                                                                                                                                                                                                                                              |    |    |            |                   |
| 10                                   | Fundamentals of replacement therapy in endocrinology | The importance of hormone replacement therapy in patients with endocrinopathy. Prevention and correction of changes resulting from endocrine disorders. The use of substitution therapy in men with delayed puberty, impotence, the development of cancer, to stimulate spermatogenesis, regulation of the main male hormone – testosterone. | PD | EC | 2          | LO4<br>LO6        |
| 11                                   | Diabetes school                                      | Structured training of patients with diabetes mellitus and persons with risk factors, aimed at the prevention of this disease and its complications. Theoretical foundations of group interactive and individual structured training for patients with type 1 and type 2 diabetes and persons with risk factors for diabetes.                | PD | EC | 2          | LO2<br>LO3<br>LO4 |
| 12                                   | Pregnancy and endocrine pathology                    | Endocrine pathology during pregnancy. Pregnancy and thyroid diseases. Pregnancy and diabetes mellitus. Complications of diabetes. Modern methods of diagnosis, treatment and follow-up of pregnant women with extragenital pathology correspond to modern standards of qualified care.                                                       | PD | EC |            | LO1<br>LO5        |
|                                      | Total:                                               |                                                                                                                                                                                                                                                                                                                                              |    |    | 138        |                   |
|                                      | Final certification:                                 |                                                                                                                                                                                                                                                                                                                                              |    |    | 2          |                   |
|                                      | <b>Total:</b>                                        |                                                                                                                                                                                                                                                                                                                                              |    |    | <b>140</b> |                   |



**Professional standard: Endocrinology (adults, children)**

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| Profession card " 7.1 Endocrinologist"                                                                                                               | Mandatory labor functions:                                                                                                                                   | 1. Provision of qualified and specialized endocrinological care in outpatient, inpatient and inpatient settings, at home, outside the medical organization, in emergency and planned forms under the supervision and supervision of a mentor<br>2. Carrying out preventive measures in the provision of endocrinological care, preventing the formation of antimicrobial resistance, sanitary and hygienic education and the formation of a healthy lifestyle of the population under the supervision and supervision of a mentor.<br>3. Interaction with patients, their environment and healthcare participants under the supervision and supervision of a mentor<br>4. Maintaining accounting and reporting medical records under the supervision and supervision of a mentor                                                             |
|                                                                                                                                                      | Additional labor functions:                                                                                                                                  | 1. Continuous professional development under the supervision of a mentor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Labor function 1:<br>Provision of specialized medical care and management of patients with rheumatic diseases at the outpatient and hospital levels. | Skill 1:<br>Examination of adults and children to identify signs of diseases related to pathology and dysfunction of endocrine organs in outpatient settings | Skills:<br>1. To collect a complete medical history from patients (adults, children) and children to identify the pathology of the endocrine system.<br>2. To conduct a physical examination of patients (adults, children) to identify the pathology of the endocrine system.<br>3. Examine the condition of the skin, subcutaneous tissue, muscles, thyroid gland, heart, lungs, liver, pancreas, kidneys, bone system, peripheral vessels, central, and peripheral nervous system in patients (adults, children) with suspected endocrine pathology.<br>Knowledge:<br>1. Features of medical history collection and physical examination of adults and children with pathology and dysfunction of endocrine organs.<br>2. Knowledge of the normal and pathological anatomy and physiology of the endocrine system in adults and children. |
|                                                                                                                                                      | Skill 2:<br>Carrying out measures for the diagnosis of diseases related to pathology and dysfunction of endocrine organs in children and adults.             | Skills:<br>1 It is reasonable to prescribe diagnostic tests to patients (adults, children) with suspected endocrine pathology.<br>2. Interpret the results of diagnostic and laboratory tests for patients (adults, children) with suspected endocrine pathology.<br>3. To assess the level of functional insufficiency of the endocrine system when detecting a pathological process in patients with endocrine diseases.                                                                                                                                                                                                                                                                                                                                                                                                                   |



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| <p><b>Cathedra of Therapy and Cardiology</b></p>                                                                                                         |  | 51/11                                                                                                                                                                                                                                 |
| <p><b>Educational program 7R01108 Endocrinology (adults, children)</b></p>                                                                               |  | 11 page. from 16                                                                                                                                                                                                                      |

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|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  |                                                                                                                                                                                                                        | <p><b>Knowledge:</b></p> <ol style="list-style-type: none"> <li>1. Fundamentals of biochemistry and hormonal regulation of endocrine system organ function in patients (adults, children).</li> <li>2. Principles of diagnosis of endocrine diseases in patients (adults, children) using laboratory and instrumental research methods registered in the Republic of Kazakhstan.</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|  | <p><b>Skill 3:</b><br/>Diagnosis, planning and organization of treatment of adults and children with diseases related to pathology and dysfunction of endocrine organs under the supervision of a mentor.:</p>         | <p><b>Skills:</b></p> <ol style="list-style-type: none"> <li>1. Formulate a diagnosis according to ICD - 10 when detecting pathology of the endocrine system.</li> <li>2. Prescribe outpatient treatment to a patient with major congenital and acquired diseases of the endocrine system.</li> <li>3. To conduct medical examinations of patients with endocrine diseases and pathology.</li> </ol> <p><b>Knowledge:</b></p> <ol style="list-style-type: none"> <li>1. Knowledge of the etiology, pathogenesis, classification, and clinical manifestations of the main congenital and acquired diseases of the endocrine system - type 1 and type 2 diabetes mellitus, obesity, metabolic syndrome, thyroid diseases with hypothyroidism and thyrotoxicosis, parathyroid diseases with hypo and hyperparathyroidism, endemic goiter, adrenal diseases with manifestations of hypercorticism and hypocorticism, pituitary diseases with manifestations of hypopituitarism and hyperpituitarism, diseases with impaired function of the sex glands.</li> <li>2. Knowledge of modern Kazakhstani clinical protocols and algorithms for the examination and management of patients with endocrine system pathology in adults and children.</li> </ol> |
|  | <p><b>Skill 4:</b><br/>Treatment and prevention of acute and chronic complications of diseases related to pathology and dysfunction of endocrine organs in children and adults under the supervision of a mentor.:</p> | <p><b>Skills:</b></p> <ol style="list-style-type: none"> <li>1. Timely identify complications of diseases of the endocrine system.</li> <li>2. Diagnose acute and chronic complications of endocrine diseases.</li> <li>3. Timely inform the heads of the medical organization and chief specialists about cases of detection of severe and diagnostically unclear patients with endocrine system pathology.</li> </ol> <p><b>Knowledge:</b></p> <ol style="list-style-type: none"> <li>1. Knowledge of the pathogenesis, clinic, and treatment of major acute and chronic complications of diseases of the endocrine system - diabetic ketoacidotic coma, diabetic hyperosmolar coma, hypoglycemic coma in diabetes mellitus, chronic kidney disease in diabetes mellitus, diabetic peripheral and autonomic neuropathy, diabetic foot syndrome, thyrotoxic crisis, myxedema,</li> </ol>                                                                                                                                                                                                                                                                                                                                                           |



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| ОНТҮСТІК ҚАЗАҚСТАН<br>MEDISINA<br>AKADEMIASY<br>«Оңтүстік Қазақстан медицина академиясы» АҚ |  |  SOUTH KAZAKHSTAN<br>MEDICAL<br>ACADEMY<br>АО «Южно-Казахстанская медицинская академия» |
| Cathedra of Therapy and Cardiology                                                          |  | 51/11                                                                                                                                                                    |
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|                                                                                                                                                                     |                                                                                                                                                     | acute adrenal insufficiency, severe hypercortisolism, pheochromocytoma crisis, hypertensive crisis in aldosteronism, hypo and hyperparathyroid crisis, crisis in diabetes insipidus, acute manifestations of decompensation in hypo and hyperpituitarism.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|                                                                                                                                                                     | Skill 5:<br>Referral for hospitalization of a patient with endocrine pathology to the appropriate department of a medical organization.             | Skills:<br>1. To determine the indications for emergency and planned hospitalization of a patient with endocrine pathology<br>Knowledge:<br>1. Knowledge of indications for hospitalization based on clinical protocols and algorithms for managing patients with endocrine system pathology in adults and children.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|                                                                                                                                                                     | Skill 6:<br>Provision of emergency and emergency medical care to patients with pathology of the endocrine system                                    | Skills:<br>1. Recognition of life-threatening conditions, including clinical death (arrest of vital functions of the human body (blood circulation and/or respiration), requiring emergency medical care.<br>2. Recognize urgent conditions in endocrinology that pose a threat to life and require emergency medical care.<br>3. Provide emergency medical care to patients in urgent conditions, including in emergency situations.<br>4. Provide emergency medical care in conditions that pose a threat to life, including clinical death (stopping vital functions of the human body (blood circulation and (or) respiration).<br>5. Perform basic cardiopulmonary resuscitation.<br>6. Use medicines and medical devices when providing emergency medical care.<br>Knowledge:<br>1. Urgent conditions in endocrinology: diagnostic criteria; principles of treatment and prevention.<br>2. Principles and methods of providing emergency medical care to patients with urgent conditions, diseases related to pathology and dysfunction of endocrine organs, including in emergency situations.<br>3. Rules of basic cardiopulmonary resuscitation. |
| Labor function 2:<br>Carrying out preventive measures in the provision of endocrinological care, preventing the formation of antimicrobial resistance, sanitary and | Skill 1:<br>Organization and implementation of preventive measures aimed at the prevention of diseases associated with pathology and dysfunction of | Skills:<br>1. Participate in activities aimed at the primary prevention of diseases associated with pathology and dysfunction of the endocrine organs.<br>2. Possess the skills of organizing a "school" for patients with diseases related to pathology and dysfunction of the endocrine organs (school of stroke, etc.).<br>3. Participate in periodic and preventive medical examinations.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |



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| <p> ONTÜSTİK QAZAQSTAN<br/> MEDISINA<br/> AKADEMIASY<br/> «Оңтүстік Қазақстан медицина академиясы» АҚ </p> |  |  <p> SOUTH KAZAKHSTAN<br/> MEDICAL<br/> ACADEMY<br/> АО «Южно-Казахстанская медицинская академия» </p> |
| <p>Cathedra of Therapy and Cardiology</p>                                                                  |  | 51/11                                                                                                                                                                                   |
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| <p>hygienic education and the formation of a healthy lifestyle of the population under the supervision and supervision of a mentor.</p> | <p>endocrine organs in patients (adults, children). Infection prevention and infection control.</p>                                                                                            | <p>4. Participate in screening preventive medical examinations of target groups of the child population, followed by dynamic monitoring.</p> <p>5. Participate in the organization and implementation of measures aimed at the prevention of infections related to medical care (surgical area infections, catheter-associated bloodstream infections, catheter-associated urinary tract infections, lower respiratory tract infections, hemocontact infections (hepatitis B and C, HIV)."</p> <p>6. Participate in infection prevention and infection control activities, and prevent the formation of antimicrobial resistance.</p> <p>Knowledge:</p> <ol style="list-style-type: none"> <li>1. Rules for the organization of screening.</li> <li>2. Principles of prevention of diseases related to pathology and dysfunction of endocrine organs.</li> <li>3. Target groups of individuals to be screened.</li> <li>4. Methods of prevention of diseases related to pathology and dysfunction of endocrine organs.</li> <li>5. Principles of preparation and methods of conducting educational programs of the School of health.</li> </ol>                                                                                                                                                                                                                                                                                    |
|                                                                                                                                         | <p>Skill 2:<br/>Organizing and conducting educational, educational and campaigning events aimed at preventing diseases, forming a healthy lifestyle, maintaining and strengthening health.</p> | <p>Skills:</p> <ol style="list-style-type: none"> <li>1. To carry out sanitary and educational work on the prevention of diseases related to pathology and dysfunction of endocrine organs.</li> <li>2. To inform about sanitary requirements, rules and recommendations for ensuring safety and hygiene in various spheres of life: food, water, sanitary conditions, housing conditions, personal hygiene, as well as about the risks associated with the use of antibiotics without proper indications.</li> <li>3. Provide patients and their legal representatives with information about vaccines, their importance, benefits and possible risks in accordance with national and international protocols and recommendations.</li> <li>4. Inform about regular medical examinations and screening programs.</li> <li>5. To teach sanitary and hygienic skills in order to preserve, promote health, and enhance sanitary and hygienic culture: maintaining hygiene and safety, including standard precautions (hand hygiene, cough etiquette, personal protective equipment, safe injection practices, waste management, disinfection, and sterilization), food safety, and infection prevention.</li> <li>6. To organize and conduct events to promote a healthy lifestyle, rational and healthy nutrition, the importance of physical activity, giving up bad habits, and maintaining psychological well-being.</li> </ol> |



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| <p> ONTÜSTIK QAZAQSTAN<br/> MEDISINA<br/> AKADEMIASY<br/> «Оңтүстік Қазақстан медицина академиясы» АҚ </p> |  |  <p> SOUTH KAZAKHSTAN<br/> MEDICAL<br/> ACADEMY<br/> АО «Южно-Казахстанская медицинская академия» </p> |
| Cathedra of Therapy and Cardiology                                                                         |  | 51/11                                                                                                                                                                                   |
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|                                                                                                                                                          |                                                                                                                                                                                                                                                        | <p>Knowledge:</p> <ol style="list-style-type: none"> <li>1. Measures to promote a healthy lifestyle, rational and healthy nutrition, and physical activity.</li> <li>2. Methods of infection prevention and the spread of infectious diseases.</li> <li>3. Principles of personal hygiene and healthy lifestyle.</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <p>Labor function 3:<br/>Interaction with patients, their environment, and healthcare participants under the supervision and supervision of a mentor</p> | <p>Skill 1:<br/>Interaction with the patient, his relatives or legal representatives</p>                                                                                                                                                               | <p>Skills:</p> <ol style="list-style-type: none"> <li>1. Plan your work and compile a report analyzing your own performance indicators.</li> <li>2. Maintain medical records, including in electronic form, and monitor the quality of its management.</li> <li>3. To analyze the medical and statistical indicators of the work of the specialized medical department.</li> <li>4. Use patients' personal data and information in accordance with the law.</li> <li>5. Use information systems in accordance with the established procedure.</li> </ol> <p>Knowledge:</p> <ol style="list-style-type: none"> <li>1. Principles of communication with the patient, his relatives or legal representatives.</li> <li>2. Ethical, cultural, religious, and legal aspects related to informing the patient about the choice of treatment methods and medical devices.</li> <li>3. Psychosocial aspects of the patient's health.</li> <li>4. The process of obtaining informed consent in compliance with legal requirements.</li> <li>5. Principles of interaction in conflict situations.</li> </ol> |
|                                                                                                                                                          | <p>Skill 2:<br/>Cooperation with other specialists and health services on issues of diagnosis, treatment, rehabilitation, providing an integrated approach to the prevention of the spread of infections and the formation of a healthy lifestyle.</p> | <p>Skills:</p> <ol style="list-style-type: none"> <li>1. Advising and participating in advanced training of primary health care and related specialties in endocrinology.</li> <li>2. Work in teams with other healthcare professionals and services to provide a full range of medical care to patients.</li> <li>3. Share information with other healthcare professionals and services to ensure continuity of medical care and timely intervention if necessary.</li> <li>4. Participate in multidisciplinary groups, consultations, and clinical rounds.</li> <li>5. Cooperate with public organizations and health services to prevent the spread of infections, vaccinate and respond to emergencies.</li> <li>6. Refer patients to specialists or specialized health services for further diagnosis and treatment.</li> </ol> <p>Knowledge:</p> <ol style="list-style-type: none"> <li>1. The role and functions of other specialists and services in matters of diagnosis, treatment, and rehabilitation.</li> <li>2. Technologies and standards of medical practice.</li> </ol>           |



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| <p> ONTÜSTİK QAZAOSTAN<br/> <b>MEDISINA<br/> AKADEMIASY</b><br/> «Оңтүстік Қазақстан медицина академиясы» АҚ </p>           |  | <p> SOUTH KAZAKHSTAN<br/> <b>MEDICAL<br/> ACADEMY</b><br/> АО «Южно-Казахстанская медицинская академия» </p> |
| <p> <b>Cathedra of Therapy and Cardiology</b><br/> <b>Educational program 7R01108 Endocrinology (adults, children)</b> </p> |                                                                                   | <p> 51/11<br/> 15 page. from 16 </p>                                                                         |

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| <p>Labor function 4:<br/>Maintaining accounting and reporting medical records under the supervision and supervision of a mentor</p> | <p>Skill 1:<br/>Accounting and documentation in medical practice</p>  | <p>3. Principles of effective communication with healthcare professionals and services.</p> <p>Skills:</p> <ol style="list-style-type: none"> <li>1. To draw up medical documentation in accordance with the forms, types, volume, procedure and terms established by the authorized body.</li> <li>2. Organize and store medical records in accordance with the requirements.</li> <li>3. Process medical information confidentially, observing the rules and regulations related to the protection of personal data and ensuring the security of medical information.</li> <li>4. To use information systems in the field of healthcare in professional activities.</li> </ol> <p>Knowledge:</p> <ol style="list-style-type: none"> <li>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).</li> <li>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).</li> <li>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).</li> <li>4. Electronic accounting and documentation systems.</li> <li>5. Confidentiality of patients' medical information.</li> </ol> |
| <p>Additional labor function 1:<br/>Continuous professional development under the supervision and supervision of a mentor</p>       | <p>Skill 1:<br/>Participation in research and scientific projects</p> | <p>Skills:</p> <ol style="list-style-type: none"> <li>1. Formulate research questions, develop hypotheses, collect and analyze data, conduct statistical analysis and draw conclusions from the research results.</li> <li>2. Observe the principles of fairness, informed consent, confidentiality, and protection of the rights and well-being of patients participating in research.</li> <li>3. To conduct a search and analysis of literature, a critical assessment of research data.</li> <li>4. Possess research design skills, including research plan and design, selection of methodology, definition of inclusion and exclusion criteria, development of a</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |



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| <p>ОҢТҮСТІК ҚАЗАҚСТАН<br/>MEDISINA<br/>AKADEMIASY<br/>«Оңтүстік Қазақстан медицина академиясы» АҚ</p>      |  | <p>SOUTH KAZAKHSTAN<br/>MEDICAL<br/>ACADEMY<br/>АО «Южно-Казахстанская медицинская академия»</p> |
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|                                          |                                                                                                                                                                                                                                                                                                             | <p>protocol and data collection scheme.<br/>5. Submit research results in writing and publish articles in scientific journals.<br/>Knowledge:<br/>1. Fundamentals of scientific method and scientific research.<br/>2. Ethical principles, regulatory norms and procedures related to human research.<br/>3. Statistical methods, methods of data processing and evaluation of the statistical significance of the results.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|                                          | <p>Skill 2:<br/>Striving for professional improvement</p>                                                                                                                                                                                                                                                   | <p>Skills:<br/>1. Participate in professional training events: conferences, seminars, webinars.<br/>2. To train personal skills: leadership, teamwork, empathy and adaptability, initiative and responsibility for achieving goals.<br/>3. Develop time and stress management skills.<br/>Knowledge:<br/>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).<br/>2. Opportunities for networking and communication with colleagues from their professional field.<br/>3. Current trends, research and development in the specialized field.</p> |
| <p>Personal competence requirements:</p> | <p>Empathy<br/>Communication skills<br/>Tolerance and respect<br/>Collaboration and teamwork<br/>Stress resistance<br/>Reflection and introspection<br/>Compliance with professional ethics<br/>Openness and willingness to learn<br/>Activity and initiative<br/>Striving for professional development</p> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

Head of the Educational and Methodical center



Doltayeva B. Z.