

1. **Department:** «Pediatrics-2»
2. **Level of preparation:** Residency
3. **Specialty:** 7R01131 «Neonatology»
4. **Course:** 2
5. **The name of the elective discipline** «Fundamentals of medical genetics in neonatology»
6. **Number of credits:** 2

7. **Purpose of the discipline:** the purpose of training a qualified neonatologist is to deepen the complex of fundamental knowledge, skills and abilities in the field of medical genetics for implementation in the professional activity of a neonatologist.

8. Objectives:

- to form an extensive and deep volume of fundamental medical knowledge in the field of medical genetics, forming the professional competence of a doctor who is able to successfully solve their professional tasks;
- сформировать to form and improve the professional training of a specialist doctor who has a clinical mindset, is well-versed in hereditary and congenital pathology and has in-depth knowledge of medical genetics;
- подготовить prepare a specialist for independent professional diagnostic activities, who is able to conduct a differential diagnostic search based on modern genetic research methods;
- to improve the system of general and special knowledge and skills that allow the doctor to freely navigate in the organization of medical and genetic services, insurance medicine.

9. **Justification of the choice of discipline:** When studying this component, neonatologists will master the main directions of scientific research in the field of medical genetics, which are the prevention and timely diagnosis of hereditary diseases; monitoring of congenital malformations; development and implementation of programs for preventing the birth of newborns with congenital malformations in the practice of medical-genetic and obstetric services.; development and implementation in practice of medical-genetic centers of systems of biochemical and molecular-genetic prenatal and vital diagnostics of hereditary diseases associated with congenital metabolic disorders; study of molecular-genetic bases of hereditary diseases.

10. Result of training (competence):

Knowledge (cognitive sphere)	Skills and abilities (psychomotor sphere)	Personal and professional competencies (relationships)
Application: - formation of knowledge of the basic laws of the development of hereditary diseases in the light of natural-scientific ideas about the structure and function of organs and systems of the child's body as a whole; - demonstrate competence in the diagnosis of hereditary diseases associated with congenital metabolic disorders; - readiness for abstract thinking, analysis, synthesis;	Accuracy: demonstrates the ability to perform medical procedures on dummies during an objective structured clinical examination. Articulation: accurately performs medical procedures on real or standardized patients. Affective Domain (Attitude/Behavior) Gives value: relationships with patients and medical staff during medical procedures. Organization: -independent organizes medical procedures according to the list of the residency profile;	Medical documentation: - observe the ethical and deontological aspects of the work of a neonatologist; - to identify and assess the severity of risk factors for the development and progression of neonatal diseases, to identify early symptoms of diseases, to find out the family history, to comply with the norms of the sanitary and epidemiological regime; - get information about the disease; determine the need for special research methods (laboratory,

	-willingness to manage a team, to tolerate social, ethnic, religious and cultural differences.	radiological, functional, pathopsychological, medical-genetic), organize their implementation and be able to interpret their results; - conduct a differential diagnosis; - assess the cause and severity of the patient's condition and take the necessary measures to remove the patient from this condition.
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11. Prerequisites: Neonatology in the hospital.

12. Postrequisites: profile disciplines

13. References

Main literature:

1. Neonatology: studies. manual : in 2 t / Shabalov N. P.-M.: GEOTAR-Media, 2019-704 p.
2. Neonatology: studies. manual in 2 t / Shabalov N. P.-M.: GEOTAR-Media, 2019-736 p.
3. Ginter, E. K. Hereditary diseases / ed. by E. K. Ginter, V. P. Puzyrev-Moscow: GEOTAR-Media, 2017. - 464 p.
4. Hereditary diseases : national guidelines / G. V. Baidakova [et al.]; ed. by E. K. Ginter, V. P. Puzyrev; Assoc.med. o-v in quality, Ros. o-vo med. geneticists. - Krat. ed. - Moscow: GEOTAR-Media, 2017. - 458 p.
5. Bochkov N. P., Hereditary diseases : a national guide / Edited by N. P. Bochkov, E. K. Ginter, V. P. Puzyrev-M.: GEOTAR-Media, 2013. - 936 p.

Additional literature:

1. Jones, K. L. Hereditary syndromes according to David Smith: atlas-reference = Smith's Recognizable Patterns of Human Malformation : Sixth Edition / K. L. Jones; translated from English by A. G. Azova [et al.], ed. by A. G. Azov. - Moscow: Praktika, 2011. - 998 p.
2. Khaitov R. M. Immunogenomics and human genodiagnostics : national guidelines / R. M. Khaitov, L. P. Alekseev, D. Yu. Trofimov. - M.: GEOTARMedia, 2017. - 255 p.
3. Newssbaum, Robert L. Medical genetics: a textbook for students of institutions of higher professional education, studying in the discipline "Medical genetics" / R. L. Newssbaum, R. R. McInnes, H. F. Willard; per. A. Sh. Latypova, ed. N. P. Bochkov. - M.: GEOTAR-Media, 2010. - 620 p.
4. Chuchalin, Alexander Grigoryevich. Encyclopedia of rare diseases / A. G. Chuchalin. - M.: GEOTAR-Media, 2014. - 672 p.
5. Paukov V. S., Pathology: manual / Ed. by V. S. Paukov, M. A. Paltsev, E. G. Ulumbekov-2nd ed., ispr. and add. - M.: GEOTAR-Media, 2015. - 2500 p.
6. Bochkov N. P., Puzyrev V. P., Smirnikhina S. A. Clinical Genetics-4th ed., add. and pererab. M., GEOTAR-Media, 2011.
7. Nyussbaum R. L. Medical Genetics: textbook. manual / R. L. Newssbaum, R. R. McInnes, H. F. Willard; translated from English. edited by N. P. Bochkov, trans. from English by A. S. Latypov. - M.: GEOTAR-Media, 2010.
8. Kishkun A. A. Manual of laboratory diagnostic methods / A. A. Kishkun. - 2nd ed., reprint. and additional-M.: GEOTAR-Media, 2014. - 760 p.

Electronic resources (for example: video, audio, digests):

1. Sorvacheva T.N., Martinchik A.N., Pyrieva E.A. Comprehensive assessment of actual nutrition and nutritional status of children and adolescents: textbook - M.: GBOU DPO RMAPO, 2014. - 73 p.

<http://irbis.rmapo.ru/UploadsFilesForIrbis/8b4ba38a506a0008d1d0b92c42ed9df5.pdf>

2. WHO AnthroPlus for personal computers Manual: Software for assessing growth of the world's children and adolescents. Geneva: WHO, 2009 (<http://www.who.int/growthref/tools/en/>).

Medical sites:

1. med-site.narod.ru
2. www.medicusamicus.com
3. www.medprof.ru
4. www.rusmedserv.com/topsites/
5. www.doktor.ru.
6. medinfo.net
7. www.spasmex.ru
8. www.webmedinfo.ru
9. www.medicum.nnov.ru
10. medcompany.ru
11. meduniver.com
12. badis.narod.ru
13. studentdoctorprofessor.com.ua
14. www.med39.ru
15. www.kovostok.ru
16. www.drugme.ru
17. lepila.tyurem.net
18. top.medlinks.ru
19. doctor-doctor.ru
20. mepmed.ru

1. **Department:** «Pediatrics-2»
2. **Level of preparation:** Residency
3. **Specialty:** 7R01131 «Neonatology»
4. **Course:** 2
5. **The name of the elective discipline** «Clinical pharmacology in neonatology»
6. **Number of credits:** 2

7. **Purpose of the discipline:** the purpose of mastering the discipline is to form professional competencies among resident neonatologists aimed at developing the ability to present a complete system of theoretical foundations of clinical pharmacology; factors that contribute to changes in metabolism, the effects of drugs that increase the risk of side effects, and the willingness to organize high-quality pharmacotherapy and full-fledged drug provision for newborns.

8. Objectives:

- formation of scientific knowledge about the general patterns and specific mechanisms of the occurrence, development, main manifestations and outcomes of diseases in newborns;
- осво master special knowledge and skills in the field of clinical pharmacology;
- диагност diagnose diseases and emergency conditions in newborns in accordance with the International Statistical Classification of Diseases and Health-Related Problems;
- научить teach to justify the use of pathogenetically based drug therapy;
- formation of ideas about the mechanism of action, pharmacokinetics, pharmacodynamics, side effects, indications and contraindications, dosage regimen of drugs in neonatology;
- to justify pharmacotherapy in a particular patient, to determine the route of administration, regimen and dose of drugs, to evaluate the effectiveness and safety of treatment for various diseases in newborns;
- обуч train the management of accounting records in medical organizations at all stages of providing medical care to newborns;
- совершенствовать improve the methodology in working with patients and their relatives, medical personnel, educating doctors with proper deontological and ethical principles and skills;
- to participate in the solution of individual research and scientific-applied tasks for the development of new methods of prevention, diagnosis, treatment in neonatology.

9. **Justification of the choice of discipline:** In the elective discipline "Clinical Pharmacology in Neonatology", a deeper and more complete development of the work of future neonatologists is expected. The process of studying the discipline is aimed at forming the readiness of a specialist who has acquired knowledge in the field of clinical pharmacology, to improve the conduct of individual pharmacotherapy, including in the specialty of neonatology, to contribute to the prevention, timely detection and treatment of side effects of drugs, to ensure more appropriate preparation of applications for medicines and to monitor the correctness of their use.

10. Result of training (competence):

Knowledge (cognitive sphere)	Skills and abilities (psychomotor sphere)	Personal and professional competencies (relationships)
Application: - pharmacodynamics, pharmacokinetics, pharmacogenetics and their significance in assessing the effectiveness and safety of treatment; - metabolism and interaction, monitoring of side effects of drugs, basic principles of drug testing; - computer science, the study of computer information and search systems for clinical	Accuracy: demonstrates the ability to perform medical procedures on dummies during an objective structured clinical examination. Articulation: accurately performs medical procedures on real or standardized patients. Affective Domain (Attitude/Behavior) Gives value: relationships with patients and medical staff during medical procedures. Organization:	Medical documentation: - readiness to identify pathological conditions, symptoms, disease syndromes, and nosological forms in newborns in accordance with the International Statistical Classification of Diseases and Health-related Problems. - Medical documentation: registration of medical documentation on the

pharmacology, the development of a pharmacological form of a medical institution, the principles of pharmacotherapy and clinical pharmacology of medicines for diseases of the cardiovascular, bronchopulmonary system, drugs used in neonatology and in emergency conditions, anti-inflammatory and antimicrobial drugs used in neonatology for infectious diseases; - principles of pharmacotherapy and clinical pharmacology of drugs that regulate the function of hemostasis, urinary system, diseases of the digestive system and pathology of the nervous system in newborns.	-independent organizes medical procedures according to the list of the residency profile; -willingness to manage a team, to tolerate social, ethnic, religious and cultural differences.	specialty profile in accordance with the legislation in healthcare.
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11. Prerequisites: Neonatology in the hospital.

12. Postrequisites: profile disciplines

13. References

Main literature:

1. Shabalov, N. P. Neonatology [Text]: textbook. manual : in 2 volumes / N. P. Shabalov. - 6th ed., ispr. and add. - M.: GEOTAR-Media, 2016. - Vol. 1. - 928 p. (1 copy) 2. Shabalov, N. P. Neonatology [Text]: textbook. manual : in 2 volumes / N. P. Shabalov. - 6th ed., ispr. and add. - M.: GEOTAR-Media, 2016. - Vol. 2. - 880 p. (1 copy)
3. Shabalov, N. P. Neonatology [Electronic resource]: textbook. manual : in 2 volumes / N. P. Shabalov. - 6th ed., ispr. and add. - M.: GEOTAR-Media, 2016. - Vol. 1. - 704 p. - Access mode: <http://www.studentlibrary.ru/book/ISBN9785970437940.html>
4. Clinical pharmacology and pharmacotherapy / ed. by V. G. Kukes, A. K. Starodubtsev. - Ed. 3, add. and pererab. - M.: GEOTAR-Media, 2013-832 p.
5. Clinical pharmacology: national hands. / edited by Yu. B. Belousov, [et al.]. - Moscow: GEOTAR-Media, 2014-976 p.

Additional literature:

1. Clinical pharmacology [Electronic resource]: textbook / ed. by V. G. Kukes, D. A. Sychev. - 5th ed. Rev. and extra - M. : GEOTAR-Media, 2015. - 1024 p.: Il. - Access mode: <http://www.studentlibrary.ru/>.
 2. Petrov V. I. Clinical pharmacology and pharmacotherapy in real practice [Electronic resource]: master class: textbook / V. Petrov, I. - M. : GEOTAR-Media, 2015. - Access mode: <http://www.studentlibrary.ru>
 3. Rational antimicrobial therapy [Electronic resource]: a guide for practicing physicians / ed. by S. V. Yakovlev. - 2nd ed., reprint. and add. - M.: Litterra, 2015. - (Rational pharmacotherapy). - Access mode: <http://www.studentlibrary.ru>
 4. Clinical pharmacology: national guidelines [Electronic resource] / ed. by Yu. B. Belousov, V. G. Kukes, V. K. Lepakhin, V. I. Petrov-M.: GEOTAR-Media, 2014. - <http://www.rosmedlib.ru/>
 5. Petrov V. I. Medicine, based on evidence [Electronic resource]: textbook. manual for universities and postgraduate studies. education of doctors / Petrov V. I., Nedogoda S. V.-M.: GEOTAR-Media, 2012. - 141 p.: ill. - Access mode: <http://www.studentlibrary.ru>
 6. Clinical pharmacology. General questions of clinical pharmacology [Electronic resource]: practicum: textbook / D. A. Sychev [et al.]; edited by V. G. Kukes. - M.: GEOTAR-Media, 2013. - 224 p.: ill. - Access mode: <http://www.studentlibrary.ru/>.
 7. Begg E. Clinical pharmacology [Text] : [textbook. ed.] / E. Begg; translated from the English
- Electronic resources (for example: video, audio, digests):**

1. Scopus / Elsevier Inc., Reed Elsevier. - Philadelphia: Elsevier B.V., PA. - URL: <http://www.sciencedirect.com/> (National project)
2. Doctor's consultant. Electronic medical library: EBS. - Moscow: LLC GK "GEOTAR". - URL: <http://www.rosmedlib.ru>
3. Web of Science / Clarivate Analytics. - URL: <http://apps.webofknowledge.com> (Naitoekt).
5. Scientific electronic library - URL: elibrary.ru

Medical sites:

1. med-site.narod.ru
2. www.medicusamicus.com
3. www.medprof.ru
4. www.rusmedserv.com/topsites/
5. www.doktor.ru.
6. medinfo.net
7. www.spasmex.ru
8. www.webmedinfo.ru
9. www.medicum.nnov.ru
10. medcompany.ru
11. meduniver.com
12. badis.narod.ru
13. studentdoctorprofessor.com.ua
14. www.med39.ru
15. www.kovostok.ru
16. www.drugme.ru
17. lepila.tyurem.net
18. top.medlinks.ru
19. doctor-doctor.ru
20. mepmed.ru

1. **Department:** «Pediatrics-2»
2. **Level of preparation:** Residency
3. **Specialty:** 7R01131 «Neonatology»
4. **Course:** 2
5. **The name of the elective discipline** «Clinical laboratory diagnostics in neonatology»
6. **Number of credits:** 2

7. Purpose of the discipline: improving the quality of research, the use of modern equipment and new research methods that require highly qualified personnel and a modern approach to the automation of laboratory research in clinical and experimental medicine in connection with the rapid expansion of the range of biochemical and general clinical analyses and the volume of work of clinical and diagnostic laboratories for future neonatologists.

8. Objectives:

- study of the organizational foundations of the work of clinical and diagnostic laboratories;
- study of the metabolism of the newborn body in normal and pathological conditions;
- development of modern laboratory research methods;
- interpretation of the obtained research results on the basis of knowledge of the theoretical foundations;

9. Justification of the choice of discipline: In the elective discipline "Clinical laboratory diagnostics in neonatology", a deeper and more complete mastering of the work of future neonatologists is expected. The ability to interpret the results of laboratory functional research methods is necessary for a young specialist to make an accurate diagnosis and conduct a differential diagnosis.

10. Result of training (competence):

Knowledge (cognitive sphere)	Skills and abilities (psychomotor sphere)	Personal and professional competencies (relationships)
Application: can apply his knowledge when solving a problem in a new or unfamiliar environment related to his field of study; - readiness for abstract thinking, analysis, synthesis; - assign a plan of laboratory and instrumental methods of examination; - interpret the results of laboratory and instrumental methods of examination; - provide assistance in case of complications. Analysis: discusses and categorizes the knowledge of biomedical, clinical, social and behavioral sciences in specialized practice - conducts a comprehensive assessment of laboratory and instrumental studies. Rating: - evaluate the results of UAC, OAM, biochemical blood tests, BAC. research, coprology, CBS. - appreciate the indicators of peak flowmetry, ultrasound,	Accuracy: demonstrates the ability to perform medical procedures on dummies during an objective structured clinical examination. Articulation: accurately performs medical procedures on real or standardized patients. Affective Domain (Attitude/Behavior) Gives value: relationships with patients and medical staff during medical procedures. Organization: -independent organizes medical procedures according to the list of the residency profile; -willingness to manage a team, to tolerate social, ethnic, religious and cultural differences.	Medical documentation: - readiness to identify pathological conditions, symptoms, disease syndromes, and nosological forms in newborns in accordance with the International Statistical Classification of Diseases and Health-related Problems; - medical documentation: registration of medical documentation for the specialty profile in accordance with the legislation in healthcare.

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11. Prerequisites: Neonatology in the hospital.

12. Postrequisites: profile disciplines

13. References

Main literature:

1. Kukshin A. A. Clinical laboratory diagnostics [Elektr, Res.]: study.manual / A. A. Kukshin, - M.: GEOTAR-Media, 2015. - 976s.: pl, - Access from the EBS " Student Consultant»
2. Hittins K.-Decoding of clinical laboratory tests.
Moscow. Beecom. Knowledge Lab. 2014, p. 376 b.
3. Kamyshnikov V. S. "Clinical laboratory tests from A to Z and their diagnostic profiles".
Moscow. Medpress-Inform. 2015.
4. M. K. Rybakov, V. V. Mitkov.Echocardiography in tables and diagrams. Desktop reference.
VIDAR. 2011.
5. M. I. Lykov. Ultrasound diagnostics in pediatrics. VIDAR 2017.
6. Clinical protocols of the Ministry of Health of the Republic of Kazakhstan.

Additional literature:

1. I. V. Dvoryakovskiy, G. V. Yatsyk. Ultrasound diagnostics in neonatology. Publishing house "Atmosphere". 2019
2. Bazarbaeva A. A. Differential diagnosis of anemia in children: a textbook.- Almaty, 2011. - 99 p.
3. Kishkun A. A. Manual of laboratory diagnostic methods / A. A. Kishkun. - 2nd ed., reprint. and additional-M.: GEOTAR-Media, 2014. - 760 p.
4. Physiology and pathology of hemostasis [Electronic resource]: textbook. manual / edited by N. I. Stuklov. - M.: GEOTAR-Media, 2016. - Access from the EBS "Consultant of the doctor".
5. Makarenko Yu. M. Laboratory diagnostics. Biochemical research / Yu. M. Makarenko, N. S. Sidorenko. - Rostov n/A: NAUKA, 2013. - 48 p.

Electronic resources (for example: video, audio, digests):

1. Higgins, K. Decoding of clinical laboratory analyses [Electronic resource] : monograph / K. Higgins ; translated from English by E. K. Vishnevskaya. - 7th ed. -Moscow : Knowledge Lab, 2016. - 587 p. <http://elib.kaznu.kz/>
2. Clinical guidelines for the pharmacotherapy of persistent pain in children and adolescents / Association of professional participants in hospice care, Russian Society of Pediatric Oncologists, Association of Pediatric Anesthesiologists and Resuscitators, National Society of Pediatric Oncologists of Russia - Moscow, 2016. - 33 p.

Medical sites:

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2. www.medicusamicus.com
3. www.medprof.ru
4. www.rusmedserv.com/topsites/
5. www.doktor.ru.
6. medinfo.net
7. www.spasmex.ru
8. www.webmedinfo.ru
9. www.medicum.nnov.ru
10. medcompany.ru
11. meduniver.com
12. badis.narod.ru
13. studentdoctorprofessor.com.ua
14. www.med39.ru
15. www.kovostok.ru
16. www.drugme.ru
17. lepila.tyurem.net
18. top.medlinks.ru

- 1. Department:** «Pediatrics-2»
2. Level of preparation: Residency
3. Specialty: 7R01131 «Neonatology»
4. Course: 2
5. The name of the elective discipline «Clinical laboratory diagnostics in neonatology»
6. Number of credits: 2

7. Purpose of the discipline: improving the quality of research, the use of modern equipment and new research methods that require highly qualified personnel and a modern approach to the automation of laboratory research in clinical and experimental medicine in connection with the rapid expansion of the range of biochemical and general clinical analyses and the volume of work of clinical and diagnostic laboratories for future neonatologists.

8. Objectives:

- study of the organizational foundations of the work of clinical and diagnostic laboratories;
- study of the metabolism of the newborn body in normal and pathological conditions;
- development of modern laboratory research methods;
- interpretation of the obtained research results on the basis of knowledge of the theoretical foundations;

9. Justification of the choice of discipline: In the elective discipline "Clinical laboratory diagnostics in neonatology", a deeper and more complete mastering of the work of future neonatologists is expected. The ability to interpret the results of laboratory functional research methods is necessary for a young specialist to make an accurate diagnosis and conduct a differential diagnosis.

10. Result of training (competence):

Knowledge (cognitive sphere)	Skills and abilities (psychomotor sphere)	Personal and professional competencies (relationships)
Application: can apply his knowledge when solving a problem in a new or unfamiliar environment related to his field of study; - readiness for abstract thinking, analysis, synthesis; - assign a plan of laboratory and instrumental methods of examination; - interpret the results of laboratory and instrumental methods of examination; - provide assistance in case of complications. Analysis: discusses and categorizes the knowledge of biomedical, clinical, social and behavioral sciences in specialized practice - conducts a comprehensive assessment of laboratory and instrumental studies. Rating:	Accuracy: demonstrates the ability to perform medical procedures on dummies during an objective structured clinical examination. Articulation: accurately performs medical procedures on real or standardized patients. Affective Domain (Attitude/Behavior) Gives value: relationships with patients and medical staff during medical procedures. Organization: -independent organizes medical procedures according to the list of the residency profile; -willingness to manage a team, to tolerate social, ethnic, religious and cultural differences.	Medical documentation: - readiness to identify pathological conditions, symptoms, disease syndromes, and nosological forms in newborns in accordance with the International Statistical Classification of Diseases and Health-related Problems; - medical documentation: registration of medical documentation for the specialty profile in accordance with the legislation in healthcare.

- evaluate the results of UAC, OAM, biochemical blood tests, BAC. research, coprology, CBS. - appreciate the indicators of peak flowmetry, ultrasound, radiography, computed tomography, NMRI		
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11. Prerequisites: Neonatology in the hospital.

12. Postrequisites: profile disciplines

13. References

Main literature:

1. Kukshin A. A. Clinical laboratory diagnostics [Elektr, Res.]: study.manual / A. A. Kukshin, - M.: GEOTAR-Media, 2015. - 976s.: pl, - Access from the EBS " Student Consultant»
2. Hittins K.-Decoding of clinical laboratory tests. Moscow. Beecom. Knowledge Lab. 2014, p. 376 b.
3. Kamyshnikov V. S. "Clinical laboratory tests from A to Z and their diagnostic profiles". Moscow. Medpress-Inform. 2015.
4. M. K. Rybakov, V. V. Mitkov.Echocardiography in tables and diagrams. Desktop reference. VIDAR. 2011.
5. M. I. Lykov. Ultrasound diagnostics in pediatrics. VIDAR 2017.
6. Clinical protocols of the Ministry of Health of the Republic of Kazakhstan.

Additional literature:

1. I. V. Dvoryakovsky, G. V. Yatsyk. Ultrasound diagnostics in neonatology. Publishing house "Atmosphere". 2019
2. Bazarbaeva A. A. Differential diagnosis of anemia in children: a textbook.- Almaty, 2011. - 99 p.
3. Kishkun A. A. Manual of laboratory diagnostic methods / A. A. Kishkun. - 2nd ed., reprint. and additional-M.: GEOTAR-Media, 2014. - 760 p.
4. Physiology and pathology of hemostasis [Electronic resource]: textbook. manual / edited by N. I. Stuklov. - M.: GEOTAR-Media, 2016. - Access from the EBS "Consultant of the doctor".
5. Makarenko Yu. M. Laboratory diagnostics. Biochemical research / Yu. M. Makarenko, N. S. Sidorenko. - Rostov n/A: NAUKA, 2013. - 48 p.

Electronic resources (for example: video, audio, digests):

1. Higgins, K. Decoding of clinical laboratory analyses [Electronic resource] : monograph / K. Higgins ; translated from English by E. K. Vishnevskaya. - 7th ed. -Moscow : Knowledge Lab, 2016. - 587 p. <http://elib.kaznu.kz/>
2. Clinical guidelines for the pharmacotherapy of persistent pain in children and adolescents / Association of professional participants in hospice care, Russian Society of Pediatric Oncologists, Association of Pediatric Anesthesiologists and Resuscitators, National Society of Pediatric Oncologists of Russia - Moscow, 2016. - 33 p.

Medical sites:

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| 1. med-site.narod.ru | 11. meduniver.com |
| 2. www.medicusamicus.com | 12. badis.narod.ru |
| 3. www.medprof.ru | 13. studentdoctorprofessor.com.ua |
| 4. www.rusmedserv.com/topsites/ | 14. www.med39.ru |
| 5. www.doktor.ru. | 15. www.kovostok.ru |
| 6. medinfo.net | 16. www.drugme.ru |
| 7. www.spasmex.ru | 17. lepila.tyurem.net |
| 8. www.webmedinfo.ru | 18. top.medlinks.ru |
| 9. www.medicum.nnov.ru | 19. doctor-doctor.ru |
| 10. medcompany.ru | 20. mepmed.ru |

- 1. Department:** «Pediatrics-2»
2. Level of Training: Residency
3. Specialty: 7R01131 «Neonatology»
4. Year of Study: 2
5. Title of the Elective Discipline: «Management of scientific research»
6. Number of Credits: 2

7. Course Objectives:

To develop a system of scientific and practical knowledge, skills, and competencies in research methodology and methods in neonatology, as well as their subsequent application in professional and research activities.

8. Course Tasks:

- Teach the mastery of research methods and methodology in the field of neonatology.
- Develop skills in identifying and analyzing relevant scientific issues for in-depth study within the framework of modern scientific paradigms.
- Train students in designing research programs and planning the stages of their implementation.
- Equip students with the ability to select and apply research tools (methods for data collection and processing, information analysis and systematization, and research design selection) to enhance the objectivity of research and practical scientific results.
- Teach the development of organizational and managerial models of scientific processes, phenomena, and objects, as well as the evaluation and interpretation of research results.
- Provide skills in searching, collecting, processing, analyzing, and systematizing information from scientific sources related to research topics.
- Develop skills in preparing reports, scientific-analytical reviews, presentations, and scientific publications in accordance with official public health documentation standards.

9. Rationale for Choosing This Course:

This elective aims to provide high-quality postgraduate education, ensuring the training of highly qualified pediatrician's specialists. The course supports this goal by maintaining an optimal level of educational quality, fostering creative activity among students, creating favorable learning conditions, and integrating innovative technologies into the educational process. Students will gain proficiency in selecting appropriate research methodologies, various research methods, identifying research objects, determining sample sizes and measurement scales, recognizing research errors, and preparing scientific papers, presentations, and publications. These skills will enable them to successfully participate in scientific seminars and conferences relevant to their specialty.

10. Learning Outcomes (Competencies):

Knowledge Domain):	(Cognitive	Skills and Abilities (Psychomotor Domain):	Personal and Professional Competencies (Attitudes):
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Application: - Can apply knowledge in biomedical, clinical, social, and behavioral sciences in specialized practice. - Demonstrates the ability to perform a wide range of medical procedures according to the residency profile. - Is proficient in applying the principles of evidence-based medicine in clinical practice. - Shows a commitment to lifelong professional development. - Demonstrates the ability to work in a multidisciplinary team and teach others. Analysis: - Discusses and categorizes knowledge in biomedical, clinical, social, and behavioral sciences within specialized practice. - Conducts a comprehensive assessment of laboratory and instrumental studies. Evaluation: - Assesses the results of clinical and biochemical blood tests, bacteriological studies, coprology, and acid-base balance (ABB). - Evaluates indicators of peak flowmetry, ultrasound (US), radiography, computed tomography (CT), and magnetic resonance imaging (MRI).	• Accuracy: Demonstrates the ability to perform medical procedures on mannequins during OSCE (Objective Structured Clinical Examination). • Articulation: Performs medical procedures accurately on real or standardized patients. Affective Domain (Attitudes/Behavior): • Values Relationships: Establishes and maintains professional relationships with patients and medical staff during medical procedures. • Organization: Independently organizes and carries out medical procedures according to the internship profile requirements.	Medical Documentation: • Maintains and completes medical documentation relevant to the specialty in accordance with healthcare regulations and legal requirements.
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11. Prerequisites: Elective courses in the internship program.

12. Postrequisites: Specialized doctoral disciplines.

13. References: Primary Sources:

1. Code of the Republic of Kazakhstan «On Public Health and the Healthcare System.»
2. Kulzhanov M.K., Mustafyev S.U., Kashafutdinova G.T., Emberdiyeva Zh.A. Healthcare Management, Almaty, 2007.
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- 1. Department:** «Pediatrics-2»
2. Level of preparation: Residency
3. Specialty: 7R01131 «Neonatology»
4. Course: 2
5. The name of the elective discipline «Clinical laboratory diagnostics in neonatology»
6. Number of credits: 2

7. Purpose of the discipline: improving the quality of research, the use of modern equipment and new research methods that require highly qualified personnel and a modern approach to the automation of laboratory research in clinical and experimental medicine in connection with the rapid expansion of the range of biochemical and general clinical analyses and the volume of work of clinical and diagnostic laboratories for future neonatologists.

8. Objectives:

- study of the organizational foundations of the work of clinical and diagnostic laboratories;
- study of the metabolism of the newborn body in normal and pathological conditions;
- development of modern laboratory research methods;
- interpretation of the obtained research results on the basis of knowledge of the theoretical foundations;

9. Justification of the choice of discipline: In the elective discipline "Clinical laboratory diagnostics in neonatology", a deeper and more complete mastering of the work of future neonatologists is expected. The ability to interpret the results of laboratory functional research methods is necessary for a young specialist to make an accurate diagnosis and conduct a differential diagnosis.

10. Result of training (competence):

Knowledge (cognitive sphere)	Skills and abilities (psychomotor sphere)	Personal and professional competencies (relationships)
Application: can apply his knowledge when solving a problem in a new or unfamiliar environment related to his field of study; - readiness for abstract thinking, analysis, synthesis; - assign a plan of laboratory and instrumental methods of examination; - interpret the results of laboratory and instrumental methods of examination; - provide assistance in case of complications. Analysis: discusses and categorizes the knowledge of biomedical, clinical, social and behavioral sciences in specialized practice - conducts a comprehensive assessment of laboratory and instrumental studies.	Accuracy: demonstrates the ability to perform medical procedures on dummies during an objective structured clinical examination. Articulation: accurately performs medical procedures on real or standardized patients. Affective Domain (Attitude/Behavior) Gives value: relationships with patients and medical staff during medical procedures. Organization: -independent organizes medical procedures according to the list of the residency profile; -willingness to manage a team, to tolerate social, ethnic, religious and cultural differences.	Medical documentation: - readiness to identify pathological conditions, symptoms, disease syndromes, and nosological forms in newborns in accordance with the International Statistical Classification of Diseases and Health-related Problems; - medical documentation: registration of medical documentation for the specialty profile in accordance with the legislation in healthcare.

Rating: - evaluate the results of UAC, OAM, biochemical blood tests, BAC. research, coprology, CBS. - appreciate the indicators of peak flowmetry, ultrasound, radiography, computed tomography, NMRI		
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11. Prerequisites: Neonatology in the hospital.

12. Postrequisites: profile disciplines

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