

For presentation to the Accreditation Council
of the Eurasian Centre for Accreditation and Quality Assurance
in Higher Education and Health Care
May 19, 2023

**REPORT
OF THE EXTERNAL EXPERT COMMISSION
ON FINDINGS OF EVALUATION OF THE EDUCATIONAL PROGRAMME
7R01101 “PAEDIATRIC AND ADULT CARDIOLOGY”
OF A.N. SYZGANOV NATIONAL SCIENTIFIC CENTRE FOR SURGERY JSC
FOR COMPLIANCE WITH THE STANDARDS FOR ACCREDITATION OF
EDUCATIONAL INSTITUTIONS FOR POSTGRADUATE MEDICAL
EDUCATION (RESIDENCY SPECIALTIES)**

conducted between May 3-4, 2023

Almaty, 2023

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LIST OF ABBREVIATIONS AND DEFINITIONS

Abbreviation	Definition
AMS	Administrative and Managerial Staff
HEI	High Education Institution
SCC	State Certifying Commission
SCES	State Compulsory Educational Standard
DSHR	Department of Science and Human Resources
ECAQA	Eurasian Centre for Accreditation and Quality Assurance in Higher Education and Health Care
FCE	Final Certifying Examination
IEP	Individual Education Plan
CS	Clinical Specialties
CHIS, AIS, Damu	Health Information Systems
CP	Clinical Protocol
CoC	Component of Choice
ESC	Elective Subjects Catalogue
MoH	Ministry of Healthcare of the Republic of Kazakhstan
MoEDSc	Ministry of Education and Science of the Republic of Kazakhstan
SR	Scientific Research
NSCS	A.N. Syzganov National Scientific Centre for Surgery Joint Stock Company
NCIE	National Centre for Independent Examination
EP	Educational Programme
OSCE	Objective Structured Clinical Examination
MS	Major Subjects
PGCE	Department for Postgraduate Continuing Education
PHC	Primary Health Care
ATS	Academic Teaching Staff
SYL	Syllabus
RCHD	Republican Centre for Health Development
IWR, GWR	Independent Work of Residents, Work of Residents Guided by a Teacher
ST RK ISO, QMS	Quality Management System of the Republic of Kazakhstan
TSYL	Typical Syllabus
TP	Training Package on
EMB	Educational and Methodological Board
AB	Academic Board
CBL	Case-based learning
ESG	European Standards and Guidelines
ESC	European Society of Cardiology
MCQ	Multiple-choice question
RBL	Research based learning
TBL	Team-based learning

In accordance with the ECAQA Order No. 9 dated April 10, 2023, the External Experts Commission (the “EEC”) was formed to conduct between May 3-4, 2023 external evaluation of the residency educational programme in specialty 7R01101 “Paediatric and Adult Cardiology” in the following membership:

The EEC report contains an assessment of the educational programme 7R01101 “Paediatric and Adult Cardiology” for compliance with the Standards for Accreditation of Postgraduate Educational Programmes (residency specialties) of medical educational organizations and conclusions (the “Accreditation Standards”), the EEC recommendations on further improvement of approaches and conditions for the implementation of the above-mentioned educational programme and recommendations to the ECAQA’s Accreditation Council.

2. General part of the Final Report

2.1 Presentation of the educational programme 7R01101 “Paediatric and Adult Cardiology”

Name of organization, legal form, BIN	A.N. Syzganov National Scientific Centre for Surgery JSC
Governing body	Board of Directors
Top executive officer’s full name	Bolatbek Bimendeyevich Baimakhanov
Date of establishment	April 1945
Location area and contact details	62, Zheltoksan Street Almaty, 050004, Kazakhstan Phone/Fax: 8(727) 279-95-05 E-mail: info@nnch.kz Official website: http://nnch.kz
State license for educational activities in residency (date, number)	Certificate of institutional accreditation. State license of the MoEDSc No. 12018231 dated 21.11.2012. Certificate of specialized accreditation. State license of the MoEDSc No. 12018231 dated 21.11.2012. Certificate of institutional accreditation. State license of the MoEDSc No. 12018231 dated 21.11.2012. Certificate of specialized accreditation. State license of the MoEDSc No. 12018231 dated 21.11.2012.
Starting year of the accredited educational programme (EP)	Since 2023
Duration of training	2 years
Total number of graduates since the EP start	No
Number of residents at the EP since the beginning of the current academic year	No
Full-time teachers/ part-time employees involved in the implementation of the EP, incl. academic degree holders rate, %	Total number of teachers - 2, including full-time - 2, part-time - 0 Academic degree holders rate, % - 50 Categorization, % - 100
Website Instagram Facebook with active pages	Official web-site: http://nnch.kz

The National Scientific Centre of Surgery was founded in April 1945 on the basis of a hospital for World War II veterans and disabled and among the first research institutions joined the Academy of Sciences of the Kazakh SSR. A prominent scientist, talented surgeon, honored worker of science of the Kazakh SSR, academician of the Academy of Sciences of the Kazakh SSR A.N. Syzganov was its founder and first director (until 1975).

Under Decree of the Cabinet of Ministers of the Republic of Kazakhstan No. 671 dated 17.06.94. The educational institution was renamed into the Scientific Centre of Surgery named after A.N. Syzganov Ministry of Health of the Republic of Kazakhstan.

The Republican State Enterprise on the Right of Economic Use “A.N. Syzganov National Scientific Centre for Surgery” was transformed into “A.N. Syzganov National Scientific Centre for Surgery” Joint-Stock Company (the NSCS) upon the Decree of the Government of the Republic of Kazakhstan dated June 28, 2010 No. 658 with 100% state participation in its authorized capital.

The Centre was established in the legal form of a joint stock company in accordance with the Decree of the Government of the Republic of Kazakhstan dated June 28, 2010 No. 658 “On Establishing “A.N. Syzganov National Scientific Centre for Surgery” Joint-Stock Company”. The founder of the Company is the Government of the Republic of Kazakhstan represented by the Committee of State Property and Privatization of the Ministry of Finance of the Republic of Kazakhstan.

The Centre applies the principles and mechanisms of effective corporate governance, utilizes an integrated management system, has implemented the requirements of the Quality Management System of the Republic of Kazakhstan (the “ST RK ISO”) 9001-2009 (ISO 9001:2008), as well as carries out an external conformity assessment of certified management subsystems in accordance with the established procedure. The Centre is planned to implement ST RK ISO 15189-2015.

The governing body is the Board of Directors. Among its members are: a representative of the shareholder, a representative of the authorized body (owner), and more than 30% of the membership is formed by independent directors.

The executive body is collegiate, the Management Board of the Company.

The NSCS is located in Almaty, occupies 2 buildings with a total area of 18,484.80 square meters on 1.98 hectares. Total staff of the Centre: 727.5 full-time employees:

The NSCS has 10 clinical departments, a day hospital, a diagnostic unit with paraclinical services and a surgery block. The number of beds counts 210.

Paraclinical departments have been deployed for the work of clinical departments, whose activities are aimed at improving the quality of care for patients, providing the services necessary for the constant and uninterrupted activity of all clinical departments (the structure is presented in the Appendix).

A.N. Syzganov NSCS’s history of educational activities for personnel training begins with its foundation.

Over the years of its development, A.N. Syzganov NSCS has become one of the leaders in postgraduate medical education for training the next generation of competitive specialists in medicine, the leading scientific and clinical Centre in Kazakhstan, operating in accordance with national and international quality and safety standards based on the integration of education, science, practical activity and innovative approaches in the interests of every person, the society and the country.

The management of educational activities was implemented through collegial bodies: the Academic Council, the Dissertation Council, the Council on Award the Category to Specialists, the Educational and Methodological Board and the Department of Postgraduate Continuing Education.

In 2010, that was the first time in the history of the Centre that the Department of Postgraduate Education was organized.

In 2012, the NSCS received a license for carrying out educational activities in 4 residency specialties according to a permanent State License to Engage in Educational Activities for the Provision of Postgraduate Education (without limitation of the period of validity) No. 12018231 dated November 21, 2012. The Appendix to the State License No. 001 (Order of the Committee for Control in the Sphere of Education and Science under the Ministry of Education and Science of the Republic

of Kazakhstan (the “MoEDSc”) dated November 21, 2012, No. 1543). The Certificate of Institutional Accreditation. The State License of the Ministry of Education and Science of the Republic of Kazakhstan No. 12018231 dated November 21, 2012. The Certificate of Specialized Accreditation. The State License of the Ministry of Education and Science of the Republic of Kazakhstan No. 12018231 dated November 21, 2012. Educational programmes include the following:

7R01117 – Anaesthesiology and Resuscitation, including Paediatric

7R01118 – Cardiac Surgery, including Paediatric

7R01114 – Diagnostic Radiology

The Certificate of Primary Specialized Accreditation No. 0003 dated June 24, 2019. Educational programme: 6R113700 – General Surgery

In 2021, the NSCS went successfully through accreditation by the MoEDSc for the right to conduct research work at the expense of the state budget for a period of 5 years (No. 000047 dated February 25, 2021 the MoEDSc). In Almaty, the Centre was the first to be successfully accredited by the MoEDSc for the right to conduct clinical trials of medicines, medical devices and medical technologies for a period of 5 years.

In 2021, the NSCS went through institutional and specialized accreditation in 5 specialties: “Anaesthesiology and Adult and Paediatric Intensive Care”, “Adult and Paediatric Cardiac Surgery”, “Radiology”, “Adult and Paediatric Vascular Surgery”, “Adult and Paediatric Plastic Surgery” for 5-year period.

In 2012-2022, A.N. Syzganov NSCS has produced 168 practical health care professionals in specialty “Anaesthesiology and Resuscitation, including Paediatric”, “Cardiac Surgery”, including Paediatric”, “Diagnostic Radiology” and “General Surgery”.

The Department of Postgraduate Education achieves annually indicators by 100% according to A.N. Syzganov NSCS JSC strategic plan for educational activities (employment and passing tests on the first try).

To implement educational programmes of additional professional education (advanced training and retraining of physicians) and residency training, as well as in order to control the conduct of academic, methodological and organizational work in education, the Educational and Methodological Board was created to review and approve the educational and methodological documentation of the postgraduate education sector (Order No. 262-p dated August 9, 2013) in August 2014.

2.2 Information about previous accreditation

To date, accreditation of the educational programme 7R01101 “Adult and Paediatric Cardiology” has not been performed. Currently, the primary accreditation of the educational programme is being carried out, i.e. the readiness of the Centre for admission of residents is being assessed.

2.3 Conclusion based on the findings of review of the self-assessment report of the educational programme in specialty 7R01101 “Paediatric and Adult Cardiology” for compliance with the Standards of Accreditation of Postgraduate Education Programs (residency specialties) of medical educational organizations and conclusions

The self-assessment report on the residency educational programme in specialty 7R01101 “Adult and Paediatric Cardiology” (the “Report”) is presented on 106 pages of the main text, 2 appendices on 2 pages, copies or electronic versions of documents that are available at:

<https://nnch.kz/strategicheskie-i-programmnye-dokumenty/strategicheskij-plan-ao-ntsh-im-a-n-syzganova/>

<https://nnch.kz/otdel-postdiplomnogo-obrazovaniya/rezidentura/>

<https://nnch.kz/otdel-postdiplomnogo-obrazovaniya/>

<https://nnch.kz/publikatsii-po-ntp/>

<https://nnch.kz/perechen-zarubezhnyh-publikatsij-sotrudnikov-i-doklady-na-mezhdunarodnyh-konferentsiyah/>

<https://nnch.kz/missiya-tsentra/>

The report is characterized by the completeness of answers to all 9 basic accreditation standards and criteria, as well as the internal unity of information and it is structured taking into account the recommendations contained in the Guidelines for the Organization and Conduct of the Self-Assessment of Educational Programme provided to the educational organization by the accreditation body ECAQA. The report is accompanied by a cover letter signed by the Chairman of the A.N. Syzganov NSCS JSC Board of Directors, Academician of the National Academy of Sciences of the Republic of Kazakhstan Bolatbek Bimendeyevich Baimakhanov, which confirms that the quantitative information and data included in the self-assessment report is reliable and accurate.

The report contains a list of 6 members of the internal self-assessment commission indicating the responsibility of each employee, information about the representative of the organization responsible for conducting the self-assessment of educational programmes, Head of X-ray Surgery, Interventional Cardiology and Arrhythmology Department, Physician of Superior Merit Adil Kudaibergenovich Baimbetov.

The self-assessment procedure of **7R01101 “Adult and Paediatric Cardiology”** educational programme was carried out on the basis of the Order of the University President No. 55-p dated February 21, 2023 “On the Working Group for the Preparation to Accreditation”.

The report was reviewed by the accreditation expert **Gauhar Tleubekkyzy Igimbayeva**. In her review she noted strengths and areas for improvement, as well as recommendations on making alterations and amendments that were taken into account in the feedback process with the representative from the university and appropriate alterations and amendments and additions were made to the self-assessment report.

All standards provide the possibility of using national and international measures, methodological support, confirming compliance with the requirements of accreditation standards. The self-assessment report quite fully presents data on teachers, administrative staff, information on selection and admission, learning outcomes, knowledge and skills assessment results, facilities and resources of the university and clinical sites, contractual obligations with partners (universities, associations, sites), financial information, and plans for development and improvement, etc.

The report is submitted to the ECAQA in its final and complete form with the adjustment of data according to the above recommendations, written in a competent language, the wording for each standard is clear, understandable and described in accordance with the criteria of the standards, the tables are referenced in the text and have continuous numbering.

The quality of the self-assessment report served as the basis for the transition to the next step in the accreditation process - external evaluation. The experts plan to validate the report data, compare the information from the report with the information that will be obtained during a visit to the educational organization, i.e. verification of quantitative and qualitative indicators.

3. Description of the external expert evaluation

The external experts evaluation of the educational programme **7R01101 “Adult and Paediatric Cardiology”** was organized in accordance with the EQACA Guidelines for the External Evaluation of Educational Organizations and Educational Programmes and according to the program approved on April 10, 2023 by the EQACA Director General S.S. Sarsenbayeva and agreed with the Chairman of the A.N. Syzganov NSCS JSC Board of Directors B.B. Baimakhanov. Date of the visit to the organization: May 3-4, 2023

The external evaluation is aimed at validating the data of the self-assessment report and verifying indicators showing the degree of compliance with the criteria of accreditation standards.

The sequence of the visit within 2 days is detailed in the Visit Program (the ‘Program’), which is held by the accreditation organization. The program is proof of the implementation of all planned activities within the framework of an external expert evaluation.

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

- Interviews with management and administrative staff - 2 people;
- Interviews with residents of other specialties - 6 people (to understand the general principles and approaches used in residency of the educational organization and to receive residents' opinions of the educational organization, staff, and resources);
- Exploring the website at <https://nnch.kz/>;
- Interviewing two employees, two teachers;
- Questionnaire survey of teachers and residents – the number is not clarified;
- Overseeing of the training of residents: not carried out
- Review of resources in the context of fulfilling accreditation standards: the NSCS clinical and laboratory departments were visited, where it is planned to conduct training under the educational programme 7R01101 “Adult and Paediatric Cardiology”;
- 15 educational and methodological documents were studied (the list of documents reviewed is presented in **Appendix 2**).

The staff of the accredited organization established the presence of all persons indicated in the Visit Program and according to the lists of interviewees (Table 1).

Table 1 - Information on the number and categories of participants to the meeting, interviews, talks with the EEC members

No.	Position	Number
1	Deputy Chairman of the Board for Scientific, Clinical and Innovative Work, Cand. Sc. in Medicine A.T. Chormanov	1
2	Deputy Chairman of the Board for Financial, Economic and Operating Activities K.Kh.Tungatov	1
3	Science and Education Manager A.T. Chormanov	1
4	Scientific Secretary A.T. Aubakirova	1
5	Head of the Department of Postgraduate Education A. Zh. Smailova	1
6	Head of the Cardiology Unit A.K. Baimbetov	1
7	Department Physician K.A.Bizhanov	1
8	Head of the Nephrological Unit I.K. Madadov	1
9	Nephrologist K.I. Dabyltayeva	1
10	Head of the Anaesthesiology and Resuscitation Unit T.K. Kuandykov	1
11	Residency graduate students - A. Kudaibergen, M. Berikkyzy, K. Dosymbetov, B. Rakhmanberdi, Ye. Kudaibergenov, Ye. Kalshabay	6
12	Residency students - A. Akshikeshov, A. Kozhamkul, Ye. Sharbek, M. Asan, M. Zagainova, A. Mukanova	6
13	HR Department – B.B. Nikbayev	
14	Interviews with employers of residency graduate students (online): Central City Clinical Hospital - Deputy Director for Surgery Zh.B. Baimakhanov City Clinical Hospital No. 7 - Chief Physician M.Ye. Ramazanov City Clinical Hospital No. 7 - Head of the Department of Anaesthesiology and Intensive Care Ye.B. Yespenbetov City Cardiology Centre - Head of the Department of Interventional Cardiology O.S. Sakhov Research Institute of Cardiology and Internal Medicine - Head of the Department of Cardiac Surgery R.M. Tuleutayev	4
15	City Clinical Hospital named after I.V. Davydovsky of the Department of Healthcare of Moscow, Head of the Department of Arrhythmology - online	1

On the last day of the visit, on May 4, 2023, a meeting of the EEC members on the findings of an external assessment was held. The final discussion of the findings of the external evaluation of the educational programme, the review of documents, the results of talks, interviews, questionnaires was held. The findings of external evaluation were summarized. The expert individually filled out the “Quality profile and Criteria for External Evaluation of the Educational Programme 7R01101 “Adult and Paediatric Cardiology” for Compliance with the EQACA Standards of Accreditation”. There were no significant comments on the readiness of the educational programme for admission of residents in August 2023. All recommendations on improving the educational programme were discussed and the Chairman G.T. Igimbayeva held the final open vote on recommendations for the accreditation period to the EQACA Accreditation Council. Despite the fact that the educational programme is new and goes through primary accreditation, all the criteria for primary accreditation standards have been met and no inconsistencies have been established. However, there are recommendations for improvement, which the NSCS is obliged to implement during the post-accreditation monitoring period. During the announcement of the findings of the external evaluation of the educational programme, the Chairman of the EEC announced the need to draw up short-term and long-term tasks to implement the EEC recommendations.

There were created comfortable conditions for the EEC work and ensured access to all necessary information and material resources. The Commission notes the high level of the NSCS corporate culture, the high degree of openness of the staffing team in providing information to the EEC members. The Commission highlights the high satisfaction of residents of various specialties with acquiring practical skills in the NSCS and the lack of worthy competitors in comparison with other medical organizations and research centres.

The questionnaire survey of residents in specialty 7R01101 “Adult and Paediatric Cardiology” was not conducted due to the lack of admission of students to this specialty. Taking into account 2 teachers in cardiology, the questionnaire was not conducted, and all questions regarding the educational process were clarified during the interview. At the end of the Visit Program, the Chairman of the EEC announced recommendations for the management and employees of the educational organization based on the findings of external evaluation within the framework of specialized accreditation.

4. Analysis for compliance with accreditation standards based on the findings of external evaluation of the residency educational programme in specialty 7R01101 “Paediatric and Adult Cardiology”

Standard 1: MISSION AND OUTCOMES

Proof of compliance:

1.1 Mission

The mission of the NSCS (the “Centre”) is to serve the community or society, while improving and preserving the health of the people of Kazakhstan through the application of advanced traditions in surgery, science and education.

The vision of the Centre is to strengthen the leading position in the surgical service of the country, represented by all types of modern surgical technologies based on the unity of clinical, scientific and educational practice. The NSCS staff aims to become the best and most innovative centre in Central Asia.

The mission of the NSCS is reflected in the Strategic Plan for 2019-2023 (Minutes of the Meeting of the Board of Directors No. 3 dated May 29, 2019, the Strategic Plan was amended and supplemented twice - approved by the Minutes of the Meeting of the Board of Directors No. 4 dated July 2, 2020; No. 7 dated October 12, 2020). The Strategic Plan is available on the NSCS website at <https://nnch.kz/strategicheskie-i-programmnye-dokumenty/strategicheskij-plan-ao-nntsh-im-a-n-syzganova#>.

The educational programme in specialty 7R01101 “Adult and Paediatric Cardiology” was developed on a collegiate basis and approved at the Meeting of the Educational and Methodological

Board (the “EMB”) (Minutes of the Meeting No. 2 dated February 21, 2023) and the NSCS Scientific Council (No. 1 dated March 29, 2023).). At the time of external assessment within the framework of accreditation, the residency educational programme in specialty 7R01101 “Adult and Paediatric Cardiology” was not submitted for the USMHE (Unified System on Management in Higher Education).

The results of the talk with the deputy chairmen of the NSCS Board of Directors, the Science and Education Manager, the Head of the Department of Postgraduate Education, heads of departments, interviews with residents and the department physicians, are found to comply with the criteria of **Standard 1**. All participants of the educational process know the mission of the educational programme, took part in the formation of proposals for formulating the mission, while the mission was brought to the attention of prospective residents through the website, social networks, and informational letters to medical organizations. The NSCS Strategic Plan for a 5-year period 2019 to 2023 was reviewed. It involves one of the most relevant areas as an “Integrated Academic Health System”, the purpose of which is to improve productivity and the quality of research activities, improve the quality of educational services, thereby contributing to and confirming the implementation of the accreditation standard, while demonstrating goals, objectives and prospects of the organization. During the visit to the NSCS departments, experts noted the strengths of the educational organization in relation to the accredited educational programme, especially in the practical training of residents, the acquisition and development of clinical skills and professional competencies.

The results of documentation review demonstrate that the mission of the organization and the mission of the educational programme 7R01101 “Adult and Paediatric Cardiology” have a single direction, and the educational process is based on the State Compulsory Educational Standard and the current regulatory legal acts (RLA) in postgraduate education and healthcare.

During the visits to the NSCS departments, the experts noted the strengths of the educational organization in relation to the accredited educational programme, including:

1. Ensuring by the NSCS continuing professional development of its specialists both domestically and abroad, organizing master classes with the involvement of leading foreign experts, attracting key foreign experts in cardiac surgery, interventional cardiology and transplantology to promote a culture and standards focused on a patient and transfer knowledge and skills to domestic specialists through mentoring;

2. Introduction of the “Management by Objectives”, a system based on the possibility of achieving the main goal through the fulfilment of key performance indicators by all employees of the NSCS departments;

3. Providing the optimal volume of educational services in accordance with international standards;

4. Implementation of professional and scientific training programs applied at leading universities and medical centres in foreign countries;

5. Implementation of the methodology to measure the indicators of the Strategic Plan, on the basis of which a differentiated approach is carried out for each employee of a particular unit

Thus, the NSCS positions itself as a stable organization of science, education and practice, which has every reason to conduct training for residents, including in specialty “Cardiology”, since there is a modern clinical base and close and real communication with patients is provided.

The Deputy Chairman of the Board for Scientific, Clinical and Innovative Work A.T. Chormanov and Deputy Chairman of the Board for Financial, Economic and Operational Activities K.Kh. Tungatov to the question of experts: “*In which regions is there need for cardiologists?*”, answered: representatives of the NSCS management noted that they constantly keep in touch with the regions of the country where a shortage of physicians of relevant specialties remains acute.

The NSCS constantly informs the authorized bodies in the field of education, science and health about its plans, keeps in constant contact with them, since the Chairman of the NSCS Board, acad. B.B. Baimakhanov is the chief external expert of the MoH and academician of the NAS RoK.

The project activity of the NSCS is beyond doubt, since the organization annually carries out at least 2-3 scientific projects, including employees and residents (without formalizing this process).

1.2 Professionalism and professional autonomy

The training of residents, judging by the documentation analysis, includes building professionalism (these are the final outcomes and teaching methods, the example of mentors, feedback from residents of other specialties). The NSCS promotes the professional autonomy of residents, which they noted in interviews with experts (6 people), through the choice of electives, participation in the discussion of elective topics, admission to clinical practice and independent work (under the “tutelage” of a mentor in the first year of study and independently in subsequent years of study). This information can be extrapolated to the program “Adult and Paediatric Cardiology”.

A.T. Chormanov to the question of experts: “Do residents work part-time in the NSCS?”, answered: “Yes, they work in order to develop practical skills and work side by side with mentors, have close communication with patients, learn to quickly respond to different situations related to patients, medical equipment, etc.

The NSCS is independent in making the decisions in the drafting of an educational programme (the Academic Council and the EMB are provided for this), when choosing the assessment method of residents (which, however, needs to be improved in terms of the development of some documents), concerning the selection and admission of residents (the NSCS has developed the specific criteria for admission, which are intended for strict screening and identifying the best applicants; the admission criteria are described in Section 4 hereof). The Admissions Committee is created from among the NSCS ATS and with administration participation. Teachers from among the NSCS staff are also selected autonomously.

The assessment of educational achievements of residents is carried out by various forms of check, which are determined by the NSCS independently (“Regulations on Organizing the Educational Process” dated January 5, 2021). Testing and assessment tools, teaching methods and checking the achievements of residents, approved at the Meeting of the Department of Postgraduate Continuing Education (the PCE), are subject to further review and adoption by the EMB.

So, to the question facing the NSCS physicians “*What are the functional responsibilities of clinical tutors?*” received the answer: “The functional responsibilities of clinical tutors are prescribed in the “Regulations on Clinical Tutors”, which all interested persons are familiar with. The work with residents is conducted by experienced tutors who are in the NSCS employment. The quality of teachers is formed due to the qualification requirements placed upon teachers (who are also tutors). Our management is trying to attract employees with academic degrees of doctors and candidates of sciences, PhD degree and/or having the highest or first qualification or professional grade in specialty (in our case, cardiology) to teach in the residency, they also require scientific and pedagogical experience, active participation in scientific and methodological and research work (they are evaluated by participation in projects, publications)”.

The NSCS approved Human Resource Management Program (the Order No. 104 – p dated March 5, 2018), which states that staffing autonomy follows from the possibility to find internal and external candidates to the full-time and part-time job openings. Internal candidates search provides the ability to fill a vacancy from within the Centre’s workforce first. The further multi-level candidate selection contributes to the effective recruitment of personnel by professional, business, moral qualities using modern technologies (HR Policy of the NSCS (Minutes No. 6-2016 as of November 23, 2016).

Almost all residency graduates are employed both by the NSCS and regional clinics. According to residents, it is a privilege and responsibility to be graduated from the NSCS, and, as a rule, they are very quickly employed by medical organizations in Kazakhstan because they are sure about on-the-job competence and self efficiency of the NSCS graduates.

1.3 Educational outcomes

Experts have found that the educational programme is compiled in accordance with the SCES 2022. The NSCS has departments of interventional cardiology, functional diagnostics, and congenital heart defects, where residents will be provided with appropriate resources for training in cardiology (starting with outpatient issues, and ending with the transfer of patients to a hospital for surgical care). Currently, 2 teachers have been appointed (since there are no residents yet) who are qualified to teach cardiology, but it is planned to attract part-time workers from outpatient clinics.

The program 7R01101 “Adult and Paediatric Cardiology”, developed within the framework of the SCES (Order 647 in a revised version of 2020) and Qualification Characteristics of the Specialty (Order of the MoH No. 148 as of October 22, 2020), takes into account the main types of resident learning outcomes. *However, there are only two elective courses and they do not cover the full range of in-depth and additional knowledge that future cardiologists should have.*

The learning outcomes include knowledge, skills, the need for analysis, communication skills and continuous training of a resident; they are generally the core of knowledge and skills of a cardiologist and an interventional cardiologist. The educational programme by its structure and teaching methods calls for the need to be aware of current medical trends, use evidence-based medicine data for the diagnosis and effective treatment of internal diseases, thus to instil in residents lifelong learning skills.

Practicing communication skills during medical rounds and case conferences, debriefing scenarios of clinical situations played with an actor, questioning a resident in 360 degrees form in a resident the skill of professional behaviour with a patient, its surroundings and colleagues.

There are no questionnaires of teachers on the quality of previous training of residents in the available specialties offered by the NSCS residency due to the fact that the recruitment of residents is planned for the fall of 2023.

Experts have established a clear continuity between the previous learning outcomes of residents (prerequisites) and residency training, and subsequent programs of continuous professional development (Sub-clause 1.3). The Centre has developed 7 programs in residency specialties, including “Adult and Paediatric Cardiology”. Residents are informed about it.

During online meeting employers of residency graduates noted the high level of training of residents, emphasizing good clinical training and demonstration of mastery of practical skills, highlighting the achievement of the learning outcomes by the Centre graduates, who can work independently, applying in practice not only the skills acquired during the residency training period, but also constantly mastering and improving new clinical practices in their individual professional activity.

The residency graduates expressed the wish that the program would provide more time to studying theory and training practical skills necessary to care for children.

1.4 Participation in formulation of mission and outcomes

The NSCS through the inclusion of the President in the membership of the EMB and conducting feedback with residents ensures their participation in developing individual components of the educational programme or making improvements to the curriculum. Teachers are also members of the EMB, so they are directly involved in formulating a mission and outcomes.

The goals and objectives of the NSCS activity were developed in accordance with the Address of the Head of State to the People of Kazakhstan: The Strategy “Kazakhstan 2050 Is a New Political Course of the Established State”, as well as in accordance with the key directions of the Strategic Plan and the Concept of Development of the Republic of Kazakhstan until 2020, which is the second stage of the implementation of the Development Strategy of Kazakhstan until 2030.

When forming the program, its goals, and final outcomes, discussions were held at the sessions of the Academic Council (all employees of the Centre, students, members of various associations, employers) and the Board of Directors.

The mission, strategic goal and vision of the NSCS are focused on training healthcare professionals who are in demand and competitive in the labour market, with the joint responsibility of the government and the centre, guarding the health of the country’s population.

The NSCS educational strategy assumes the practical implementation of the following objectives:

- To introduce international standards of management and develop of scientific and innovative activities, competitive in the international market;
- To develop and improve the quality management of medical services;
- To prepare competent specialists for medical organizations and organizations of medical education, taking into account their needs and specifics of work.

However, there are no questionnaires of residents and graduates on this issue.

The EEC conclusions by criteria. Compliance with 14 standards (including 9 basic, 5 quality development standards): fully complied - 9/5.

Standard 1: fulfilled

Recommendations for improvement identified during the external visit: No

Standard 2: THE EDUCATIONAL PROGRAMME

Proof of compliance:

2.1 Framework of the postgraduate medical education programme

To implement the educational programme in specialty 7R01101 – “Adult and Paediatric Cardiology” in the organization documentation there are available TP, which defines the goal and reflects the integration of practical and theoretical components, as well as independent work. It is found to correspond to the SCES and standard requirements. There were not conducted visits to practical sessions, because this accreditation is primary, and students were not recruited to the cardiology residency. The Centre ensures compliance with ethical aspects in the implementation of educational programmes, as the Code of Ethics (January 5, 2021) was submitted for review and study to experts, and during the interview, residents replied that they read the contents of this document.

The analysis of educational activities has shown that the scientific basis and all the achievements of science in the advising disciplines have been taken into account, necessary additions have been made to the bibliography of the TP and syllabuses, which teachers apply in the classroom.

The tutoring system, which is described in the document “Functional Responsibilities of Clinical Tutors” (Sub-clause 2.17), was evaluated. At the time of accreditation, it has not been determined who will be the curator/clinical tutor to cardiologists.

The procedure for informing residents about their rights and responsibilities is described in the Residents’ Guide, but access to such information needs to be improved for students on the NSCS website. This indicates compliance with Standard 2 in terms of adapting training to the needs of residents.

The qualification obtained as a result of mastering the educational programme corresponds to level 7 (which is specified in the educational programme cipher code) and is explained when admitting residents (**ESG 1.2**). The program 7R01101 – “Adult and Paediatric Cardiology” is included in the Classifier of Specialties, but the NSCS is currently implementing measures to register the program in the USMHE.

In order to improve the quality of educational activities, the NSCS has established an *internal quality assurance system* (Sub-clause 2.1.5) based on international standards and guidelines for quality assurance of higher and postgraduate education in the European Higher Education Area (**ESG**).

The experts have been familiarized with the *Code of Ethics of a Resident* (2.1.8) and, following a meeting with residents and administrative staff, evidence has been obtained that ethics is observed and no conflict situations have been observed over the past five years. Complaints from patients against residents were also not recorded.

The fundamental value in the educational process is academic integrity, the implementation of which is provided by the Centre. In order to ensure the principles of academic integrity, in accordance with Annex 5, Paragraph 37 of the Order of the Minister of Education and Science of the Republic of Kazakhstan dated October 30, 2018 “On Approval of Standard Rules for the Activities of Educational Organizations of Appropriate Types”, the NSCS checks articles, monographs, methodological recommendations, textbooks, etc. for elements of plagiarism and to determine the level of originality using the Anti-Plagiarism software. The check is carried out by employees of the Department of Scientific Management and Innovative Technologies. The system provides information about the text originality with an indication of similarities in percent and is electronically signed by the verifier.

There are embraced 5 principles of academic integrity, which are specified in the self-assessment report. From the first day of studying all residents are informed about academic integrity policy and

anti-plagiarism policy, after familiarization with the policies they are to affix signature into the List of Familiarization.

The NSCS helps residents to develop and obtain the necessary skills and abilities that allow them to flourish their *personal development and can be helpful in the future while building a career*. (ESG G 1.2). This was confirmed during a conversation with residents from different specialties and the attitude of teachers-mentors and the PCE Department management to students (Sub-clause 2.1.9). For example, residents freely move around the clinic, communicate with colleagues and medical staff, participate in meetings and duty shifts, and organize journal clubs and discussion of new scientific publications on the profile specialties. The educational programme is aimed at forming and developing the skills that a future doctor, manager, researcher, communicator, and active user of IT technologies (as DAMUMED system, which record electronically patient health history) should have, as well as at improving analytical and speaking skills (residents report at the morning briefings to the NSCS director or its deputies).

One core competency based on the NSCS model of medical education is to form and develop the skill of self-development and personal growth throughout life. For this purpose, the program provides for independent work of residents and work of residents under the guidance of a teacher (the IWR, GWR).

The ratio between IWR and GWR in the total amount of independent work is determined by a teacher-mentor alone. Monitoring of independent work and evaluation of its results is organized as a unity of two strategies: student self-monitoring and self-assessment; teacher monitoring and evaluation, etc.

As part of the IWR, residents teach the skills of critical review of literature, articles and scientific data through writing abstracts and creating presentations in accordance with a syllabus for each subject or module, essays on topical problems of diagnosis and treatment of the most common diseases.

The syllabuses for compulsory, major and allied subjects and the Electives Working Curricula set out the themes and types of independent work of residents.

The educational trajectory of residents and the stepwise approach to mastering practical skills according to the principle of teaching “proceed from simple to complex” are clearly developed for the educational programme to each subject (Sub-clause 2.1.4).

Residents represent the ability to continuous professional growth of a learner, which is a combination of individual educational achievements, in the form of a “Portfolio”. The experts got acquainted with the Portfolio structure and were satisfied with it. A mentor will stimulate the activities of a resident during the academic year (so that to keep the portfolio constantly filled and updated) and advise them on creating a portfolio.

Residents participate in sanitary and educational work, which is carried out in secondary schools, colleges, which also contributes to the self-development skills, presentation skills, and oratory. During the meeting with experts, 6 residents confirmed that they are satisfied with this type of their activities and they also initiate some speeches, especially on topical topics (disease prevention). Experts believe that there are a lot of topics and issues in cardiology that it is desirable to consecrate in schools and colleges.

2.2 Scientific method

The educational programme includes the scientific foundations and methodology of medical research, including clinical research and clinical epidemiology. During the conversation with the residents, the experts learned that they use scientific data in training process and know the basics of evidence-based medicine. The teachers said that they teach residents methods of critical review of literature, articles and scientific data, as well as the use of scientific developments. This form of training is organized in the form of a “journal club”, which is held every week on Mondays, that is, residents are constantly engaged in scientific work (Sub-clause 2.2.1). In 2017-2019, the NSCS residents participated in 9 fragments of scientific research. Based on the results of their participation in scientific research, poster reports were prepared at the conference in Turkey (2022).

The Centre has introduced the Learning Through Research Program (Sub-clause 2.2.2), which is aimed at the forming research competencies among residents, although the residency program itself is

more practice-oriented. But the residency graduates can continue their studies in the PhD program, so this they should master this skill. In addition, the NSCS management gives encouragement to scientific publications of residents and their presentations at conferences.

The training program for residents provides for the implementation of various forms of educational and research work (preparation of reports, papers, research, publication of scientific articles, poster reports, work in scientific circles, participation in scientific and practical conferences, etc.). Teachers involve residents in the implementation of scientific and technical projects carried out by them not by adding residents as the project formal members, but residents can participate in the execution of individual fragments or help in writing an article.

The NSCS has a strong “ground” and opportunities for the research work to be conducted by residents. So, over the past 5 years, 6 major scientific projects have been carried out and are being carried out, including one in vascular pathology (Revascularization of aortic arch branches in multifocal atherosclerosis with assessment of gas exchange and brain metabolism in the perioperative period), and in 2019-2022, 3 multicenter clinical studies were performed, including 2 in cardiovascular direction: 1) Investigation of surgical treatment for asymptomatic carotid artery stenosis-2 (Asymptomatic Carotid Surgery Trial-2). Parent organizations: ESVS, University of Oxford (2019-2020); 2) The Heart Failure Registry of the Heart Failure Association of the European Society of Cardiology (ESC).

Based on the above, the NSCS management and teachers provide training to residents so that they can effectively and efficiently use scientific data and developments in practice, apply the basics of evidence-based medicine, possess the skill of critical review of literature, articles and scientific data.

The Centre operates in accordance with the clinical protocols of the MoH based on evidence-based medicine, which also has a positive effect on the quality of the educational programme in cardiology.

The practical training includes elements of problem-based learning and project research. To develop students’ critical thinking skills involved in making judgments and solving problems. based on evidence-based medicine, active teaching methods are used: for example, diagnosis justification and patient surveillance in accordance with the clinical protocol; working in small groups of two or three residents to form a critical approach to the analysis of scientific papers, completeness disclosure of the stated topic, the persuasive writing, the logic report writing; executive summary to improve the ability to formulate the main problem, synthesize the available information and clearly formulate conclusions and recommendations; mind maps to visually organize and structure thoughts and ideas around a central topic.

Experts are confident that the same approach will be used for training of residents in cardiology.

On the basis of the NSCS the Council of Young Scientists functions and it promotes the publication and introduction of the results of scientific works into practice, the participation of residents in international and interuniversity scientific conferences.

2.3 The residency program structure, composition and duration

The educational programme in specialty 7R01101 – “Adult and Paediatric Cardiology” has been developed in accordance with the SCES 2022 (Sub-clause 2.3.2). This means that the content, scope and sequence of courses for the educational programme strictly correspond to the SCES. Clinical training of residents is conducted under the guidance of teachers, curators, and clinical tutors.

The educational programme 7R01101 “Adult and Paediatric Cardiology” subjects for 210 credits, including: core courses – 208 credits, including electives – 8 credits, final assessment – 2 credits (Sub-clause 2.3.1).

The major subjects are Cardiac Electrophysiology - 20 credits, Non-invasive Cardiac Imaging - 32 credits, Cardiology at Hospital -80 credits, Outpatient Cardiology - 32 credits, Intensive Cardiology - 22 credits, Interventional Cardiology - 14 credits (Sub-clauses 2.3.3-2.3.4).

Thus, there are documents containing requirements for the structure and content of educational programmes. Adil Kudaibergenovich Baimbetov is responsible for selecting and applying innovations in the educational process.

The experts were given the results of the questionnaire survey of 27 residents in other educational programmes (as of December 5, 2022) in order to understand the main training trends and existing problems. Residents participated in the survey were of the following specialties: plastic surgery - 6 (22%), anaesthesiology and intensive care – 4 (15%), cardiac surgery – 2 (7%), radiology - 10 (37%), general surgery – 1 (4%), angiosurgery – 4 (15%). Thus, 22 survey respondents (81%) answered that they were completely satisfied with their learning outcomes at the NSCS, and 4 (15%) residents answered “yes rather than no”. Among the learning problems that are of particular concern now, 19% pointed to the schedules of classes, 14% - to the quality of organizing and conducting GWR, 14% - to the quality of teaching a class – 4 (14%); 4% noted that they are concerned about the quality of knowledge assessment process, 4% - highlighted practice with patients. 89% of respondents rated the professional level of the organization’s teachers as average - 4% and 7% found it difficult to assess. 67% of residents were completely satisfied with the practical skills acquired during training, and 22% answered “yes rather than no” and 11% - “rather no than yes”. Thus, there is a clear problem when residents are the least confident in their professional skills. According to this survey, only 70% of respondents are completely satisfied with the availability of the necessary scientific and educational literature in the library; the rest are either partially satisfied (22%) or not satisfied (8%), which also revealed another problem in organizing residency programs in the NSCS.

The problem faced by NSCS residents is the lack of access to high-speed internet or WI-FI in the department rooms, as well as there are not enough simulators to learn practical skills.

To modify and amend the structure, content and length of the educational programme (Sub-clause 2.3.5) in accordance with science and the needs of practical healthcare and society, is one of the main functions of the PCE Department, since the program is new, and all this will be planned.

2.4 Organization of educational process and the relation between postgraduate medical education and delivery health care

The educational process management reflected in the self-assessment report (**Standard 2**) and general approaches to management were confirmed by the views expressed in the interview with the Head of the Department of Postgraduate Education A.Zh. Smailova. In addition, the verification of **Standard 2** showed that there is no constant monitoring and periodic evaluation of residency programmes of different areas, there is also no periodic external quality assurance assessment scheme (Sub-clause 2.4.1).

The experts got acquainted with the work of departments, including the work of specialized departments (urology and cardiac surgery). In total, 8 offline meetings and 2 online meetings were held, and during a cross-interview it was found that there is a constant contact of residency graduates with their curators, the relationship of curators and clinical tutors with stakeholders is monitored. This is facilitated by mentoring (supervision), which is carried out in the organization.

During the conversation with residents, the experts found that the organization promotes the development of practical competencies of residents, *but residents noted the absence of a simulation centre* (Sub-clause 2.4.2). In addition, representatives of the management agreed with the experts’ recommendation on the need to conclude an agreement with S.D. Asfendiyarov Kazakh National Medical University to learn and enhance some practical skills in the University Simulation Centre.

The training of residents in specialty 7R01101 – “Adult and Paediatric Cardiology” is aimed at meeting the needs of practical healthcare.

The integration between training and delivery health care (with on-the-job training in the NSCS Department of Interventional Cardiology) is clearly monitored, since clinical practice guidelines in disease management have been introduced into the educational process, and residents are focused on compliance with standards and requirements for providing patient care Clause 2.4).

The EEC conclusions by criteria. Compliance with 22 standards (including 19 basic, 3 quality development standards): fully complied – 18/3, partially complied – 1/0.

Standard 2: fulfilled

Recommendations for improvement identified during the external visit:

1) To create a separate, well-visualized section on residency in the NSCS website, where to place basic information on the residency educational programmes, including the mission and learning outcomes, requirements for admission to the residency, issues of academic integrity, ethics, rights and responsibilities of residents, training requirements, etc.) (2.1.8);

2) To add the following electives in the component of choice: “Differential diagnosis of rhythm disturbances”, “Innovative diagnostic methods in cardiology”, “Arrhythmia treatment” and systematically update the topics of electives, basing them on the current needs of practical healthcare and modern scientific data on cardiology (2.3.1).

Standard 3: ASSESSMENT OF RESIDENTS

Proof of compliance:

3.1 Assessment methods

The policy and procedure for evaluating the learning outcomes within the framework of the educational programme is carried out using criteria developed in accordance with the goals and objectives of the training program and the qualifications assigned within the framework of the current point-rating system for assessing knowledge and monitoring the teaching and learning process in accordance with directive, regulatory and internal documents (the Law of the Republic of Kazakhstan “On Education” dated July 27, 2007 No. 319-III; the Order of the Acting Ministry of Healthcare of the Republic of Kazakhstan dated July 31, 2015 No. 647) (Sub-clauses 3.1.1, 3.1.2). The list of compulsory subjects for the final check during the midterm assessment is specified by the subjects passed, which are reflected in the WC. In addition, a technical specification, which is a matrix of test assignments, is drawn up, the number of test questions in accordance with the number of credits completed for subjects. PCE Department, teaching staff and the specialty curator are responsible for the implementation of the policy of assessment of residents.

The policy and methods of assessment of residents are developed by the PCE Department.

However, there is no system of formative (current) assessment of the NSCS students. There is no constant current control, only ***paper records of attendance for residents are kept***. There are only exam grades are shown in paper record lists. Exams are conducted by the method of a mini clinical evaluation exercise (Sub-clause 3.1.3).

The Chair and members of the Board of Examiners are appointed from among the NSCS full-time employees (***there are no independent examiners***) (Sub-clause 3.1.6). During the visit to the organization, the Head of the Department of Postgraduate Education A. Zh. Smailova to the question “Are external examiners involved in order to make assessment process more fair, qualitative and transparent?” answered “No”.

There Centre uses portfolios as an additional form for assessing resident teaching skills (Sub-clause 3.1.2), ***but there are no checklists to evaluate scientific and practical activities, seminars, duty shifts, etc.***; no letters of reference from the curator for students, although these data are present in the self-assessment report.

During the interview, residents told about the forms of assessment, for example, if they are not ready and do not complete the task, then residents are given time to prepare for the next time, and the Satisfactory or Fail grade is not entered the records, although in words it is done. The examination scores varying 92-98% are also assigned to a module/subject. Thus, there is no ***assessment of the present level of academic performance***, midterm examination, a portfolio assessment, including the evaluation of the IRW. Such assessment procedure is appreciated positively and fully supported by residents (5 students are studying free with a government scholarship, 1 student - on a fee-paying basis). It should be noted that residents are satisfied with their studies in the NSCS, and in their opinion there is no worthy competitor among the clinics available in the country (including in

scientific centres in Astana). The system of appeal of assessment results is reflected in syllabuses for subjects and there was no appeal during the period of work in the NSCS.

The criteria for passing examinations or other types of assessment, including the number of allowed retakes, needs to be improved.

To verify the data of **Standard 3**, the experts asked questions to the Head of the Department of Postgraduate Education A.Zh. Smailova, and she agreed with the lack of proper performance assessment of residents. A.Zh. Smailova also noted the lack of teaching and pedagogical experience among the NSCS staff responsible for resident mentoring. Some of the employees have certificates of pedagogical competency (2 certificates were presented) that were obtained at the Kazakh National Women's Pedagogical University.

The EEC members recommended undergoing training to improve pedagogical competencies, including the assessment of students' knowledge at S.D. Asfendiyarov KazNMU, because the assessment of students' competencies in medical organizations has a significant difference from the assessment of schoolchildren or students of non-medical organizations.

After the visit to the organization and the interview with Smailova A.Zh., the experts were convinced that there is a documentation system that is transparent and accessible to all teachers and staff, and includes documents such as annual operational plans, regulations of departments, contracts with residents, and educational and methodological documentation (work program, working curricula, syllabuses, training log books), evaluation tools (statements), records, certificates and passports (Sub-clause 3.1.7).

The results of assessment of residents are only registered in the examination record lists for each subject.

There is a document for appeal (Sub-clause 3.1.5).

3.2 Relation between assessment and learning

When conducting interviews with potential clinical tutors (2) regarding assessment methods, the experts were convinced that with excellent work on developing clinical skills of residents, the NSCS staff needs to undergo training on the assessment of students. Residents also shared their opinion about the lack of evaluation of students, with the exception of attending a scientific journal club and working with patients. For example, according to residents they had a lot of time on studying theories at the university, but now they are happy to work with patients and the ability to “work with their hands” (Sub-clause 3.2.1).

The interviewed representatives of employers (5) also indicated that the level of graduates' competence corresponds to the modern development of medical practice and science, as they have excellent clinical skills, and are able to work independently, and are constantly improving in their practical activities. Employers are fully satisfied with the quality of training of NSCS residents, but the educational organization did not conduct systematic feedback with them (Sub-clause 3.2.2).

The EEC conclusions by criteria. Compliance with 9 standards (including 9 basic, 3 quality development standards): fully complied – 0/1, partially complied – 6/2.

Standard 3: fulfilled

Recommendations for improvement identified during the external visit:

1. When assessing residents, to regularly apply the methods of formative assessment and midterm examination, providing them with appropriate methodological documentation. To introduce the GPA calculation for midterm assessment and as proof in admission to the final academic assessment (Platonus). To develop and implement assessment sheets for assessing the independent work of residents (3.1.1, 3.1.2, 3.1.3, 3.1.4, 3.1.7, 3.2.1, 3.2.2);
2. To involve external examiners (independent examiners, stakeholders) in the assessment process of residents and document it (3.1.3, 7.2.1, 7.4.1);

Standard 4: RESIDENTS

Proof of compliance:

4.1 Admission policy and selection

The admission of residents in specialty 7R01101 – “Adult and Paediatric Cardiology” is carried out in accordance with the following regulatory documents of the Republic of Kazakhstan, which guarantees the availability of criteria, the selection process of students, and taking into account the individual skills of applicants (Sub-clause 4.1.1): 1) Order of the Minister of Education and Science of the Republic of Kazakhstan dated October 31, 2018 No. 600 “On Approval of Standard Rules for Admission to Study in Educational Institutions Implementing Training Programs of Higher and Postgraduate Education; 2) Order of the Minister of Health of the Republic of Kazakhstan dated December 15, 2020 No. KR DSM-270/2020 “On Approval of the Rules for Placing a State Order, Admission to Study and Training of Medical Personnel in Residency”; 3) SCES-2022; 4) Rules for Admission to the Residency for the Current Academic Year.

The residency program is a clinical oriented and in-depth specialized preparation program in specialty 7R01101 “Adult and Paediatric Cardiology”.

The requirements for admission of residents, as well as the rules for transferring residents from other educational institutions, are described in more detail in the “Rules for Admission to the Residency” for the corresponding academic year, based on regulatory legal acts (clause 4.1.2). The Centre considers in the selection process personal achievements, as well as the results of research work, etc. of applicants (Sub-clause 4.1.4).

Every year, the NSCS convenes an admissions committee. The Centre has procedure for conducting examinations, during which an examination board is formed, which is composed of the most experienced, qualified NSCS teachers with an academic degree. The admission of potential residents to the residency program is carried out on a competitive basis based on the results of entrance examinations. This ensures transparency in selection procedures and equity in access to the training process (Sub-clause 4.1.3).

The educational residency program in specialty 7R01101 – “Adult and Paediatric Cardiology” lasts 3 years.

According to the Head of the Department of Postgraduate Education A. Zh. Ismailova approaches to the admission of residents are based on the requirements of the country and internal regulations. The experts validated the data according to standard 4. In general, all the criteria are met.

The Centre includes a mechanism for appeal against decisions on admission of residents (Sub-clause 4.1.5).

However, residents are not involved in the process of developing admission and selection policies, and their opinion is not fully considered during it. In addition, mechanisms for periodic review of the admission and selection policy, the number of residents, based on relevant social and professional data, and human resource needs have not been worked out (Sub-clauses 4.1.5-4.1.6).

4.2 Number of residents

The NSCS analyzes and compares its opportunities (material and technical, the bed capacity of departments, the number of teachers – 2) with the planned number of residents in specialty “Adult and Paediatric Cardiology”. The NSCS can accept not more than 4-5 residents for one academic year, as there is a shortage of cardiologists in Kazakhstan, especially of Paediatric cardiologists in the regions (small cities) (Sub-clause 4.2.1). The state order for cardiology specialists is limited and is distributed mainly to universities, but there are a lot of potential residents who aim to study on a fee-paying basis in the NSCS.

The admission of residents to the NSCS (if we evaluate this criterion in relation to other educational residency programs) occurs without discrimination in relation to the gender, nationality or ethnicity and social status of people in Kazakhstan, since the NSCS strictly follows the Law of the Republic of Kazakhstan “On Education” and the Law of the Republic of Kazakhstan “On Languages”. (Sub-clause 4.2.2)

4.3 Resident counselling and support

To implement the competency-based medical education, the NSCS applies a system of academic counselling for residents (Sub-clause 4.3.1). To this end, by order of the Chairman of the Board, a curator is assigned to a resident, who provides the functions of an academic tutor, participates in the formation and implementation of an individual curriculum, manages the educational and scientific

activities of the student, and assists in finding a job. A curator or tutor is appointed from among the teaching staff (Standard 2.1.7). In addition, the resident will be assigned a clinical tutor from a medical organization, where training in related disciplines will be conducted. This is reflected in the “Regulations on the Organization of the Educational Process”.

Information materials on a resident support desk are on the information boards in the Centre as well as are available on the NSCS website www.nnch.kz, where the Chairman of the Management Board operates also a blog. The principle of confidentiality is observed in the implementation of social support, and counselling (Sub-clause 4.3.2).

The Resident Support Desk operates by means of the Department of Postgraduate Continuing Education. All NSCS staff and teachers are constantly ready to offer counselling and advice residents for issues related to training, scientific activity, mastering theoretical knowledge and practical skills necessary for mastering the residency educational programmes.

Residents participate in sports and physical activity, visit a sports hall available in the NSCS, various sports clubs as well as participate in mass sports events held by the regional and city administration.

During the survey of students, high satisfaction was determined (87.2%) with the availability of support services in the NSCS. All residents surveyed (100%) are satisfied with the availability of guides, documents on educational programmes.

The NSCS residents participate in all sports events (football, basketball, table tennis) and charity events (“The Doors Open Day”, image-building, sanitary and educational events, master classes), carry out consultations in all regions of the country, and also take part in the discussion and telemedicine consultations for emergency patients (Sub-clause 4.3.3)

Residents are involved within the work of commissions for the evaluation of educational programmes; participate in the volunteer movement (lists of volunteers who participated in the work of dispensary clinics and quarantine area during the COVID-19 pandemic are kept in the Department for PGCE).

The planning of educational conditions, assessment methods, and the educational process is based not only on regulatory and legal documentation, management decisions and teacher proposals, but also includes the opinion of residents (Sub-clause 4.3.4). To this end, the NSCS has introduced sociological surveys, questionnaires, including questions on the schedule, methods of teaching and evaluation, conditions of training in clinics, provision of methodological and information and communication materials, and relationships with teachers.

4.4 Resident representation

The Centre ensures the implementation quality of the educational programme by the participation of residents in the discussion of the NSCS mission and educational programmes. However, they are not available on the NSCS website. The Council of Residency Leaders, along with supervisors and teachers, includes residents to participate in the consideration of issues related to the educational process and the approval of training materials on residency (Sub-clause 4.4.1).

The institution creates motivation for residents in the form of awards, participation in national and international conferences, master classes and trainings, publication of joint scientific papers, participation in scientific research conducted in the NSCS (Sub-clause 4.2.2). The active part of residents in the public, scientific life of the clinical facility, inside or outside the educational institution is encouraged in reviewing portfolio materials.

4.5 Working conditions

According to the Order of the Minister of Healthcare of the Republic of Kazakhstan dated December 15, 2020 No. KR DSM-270/2020 “On Approval of the Rules for Placing a State Order, Admission to Study and Training of Medical Personnel in Residency”, resident doctors studying under a state educational order are paid a scholarship, according to the Rules for the Appointment, Payment and Size of Government Scholarships to students of educational organizations, approved by the Resolution of the Government of the Republic of Kazakhstan dated February 7, 2008 No. 116.

Resident doctors are granted vacations between academic periods. The duration of vacations during the academic year is not less than seven weeks, with the exception of the final year, in

accordance with the state mandatory standard of residency in medical specialties and the educational programme for residency specialties.

To combine training with work (no more than 0.5 rates) in areas of activity close to the future specialty in a free time the residents obtain the consent of the curator, department head and the department of PGE.

If residents have a certificate of specialist, they are allowed during extracurricular time to conduct independently treating activity in public and private medical institutions.

The heads of the residency clinical bases ensure the inclusion of resident doctors' positions in the staffing structure of units engaged in medical services, and the provision of jobs to resident doctors for the period of training at the clinical base.

The EEC conclusions by criteria. Compliance with 20 standards (including 14 basic, 6 quality development standards): fully complied – 14/6.

Standard 4: fulfilled

Recommendations for improvement identified during the external visit: нет

Standard 5: TEACHERS

Proof of compliance:

5.1 Recruitment and selection policy

Staff: 2 total, 2 full-time teachers, 0 part-time teachers. Experts are familiar with the Regulations “On Mentors” (as of Jan 5, 2022).

The representative of the educational organization responsible for conducting the educational programme in cardiology is the Head of the Department of Interventional Cardiology A.K. Baimbetov. By profession, he is an interventional cardiologist. The doctor K.A. Bizhanov, who is responsible for the work plan and the general set of documentation on residency, and the Head of the Department of Postgraduate Education A.Zh. Smailova are on the permanent staff of the educational institution. The talk with the teachers allowed the experts to learn about approaches to attracting employees from clinical bases for teaching and learning, about the recruitment policy and strategy for residents, complete information to support the educational programme, as well as to identify problems in human resources management and development, since most part-time employees seem not to employ a teaching methodology (Sub-clauses 5.1.1, 5.1.2).

During a talk with teachers, it was found that they are completely satisfied with the job and workplace arrangement in the educational organization. The Centre teachers have the 100% opportunity to engage in scientific work and publish the results of research in full.

At this stage of the introduction of a new educational programme in cardiology, two teachers are enough. In addition, the Centre requires employees with a specialization in cardiology (including Paediatric).

5.2 Teacher obligations and teacher development

According to the course for developing pedagogical mastery the mission was defined as follows: “To achieve the teaching staff professionalism with leadership, to ensure the effective teaching and learning at all levels of medical and pharmaceutical education based on the introduction of a Teacher Competence Model”. The NSCS teachers perform different functions such as teaching, mentoring, clinical and scientific activities, which on the one hand is difficult, but achievable, since there are personal job schedules (Sub-clause 5.2.1), and the residency orientation (practice-orientated) allows to be harmoniously combine different functions, which is confirmed by positive feedback from residents through annual questionnaires.

The professional development program implemented in the NSCS through retraining and advanced training courses is determined by the contingent of students at the rate of 20% of the total number of teaching staff (Sub-clause 5.2.2). Thus, each employee fully undergoes training with a total duration of at least less than (4 credits) with interruptions at main work once every five years,. For employees who want to take on-the-job training, it is carried out in the amount of at least 40 academic

hours per week, or according to a specially established schedule. The participation of teachers in professional development programs is reflected in the TS personal reports and plans, and subjected to control. Upon completion of advanced, an official report or certification document that confirms that the training has been completed is issued. (Sub-clause 5.2.3)

In order to verify the data of Standard 5, at a meeting with the head of HR department and during interviews with teachers, experts received an opinion on approaches to the development of teachers' pedagogical competence, motivation to work with residents, mentoring (Sub-clause 5.2.4) teachers-mentors receive salaries based on their functions and therapeutic activities. Experts have found that teachers initiate research topics for residents, and stimulate the need for additional training and independent work with literature or medical documentation.

During an interview with the Deputy Chairman of the Board for Financial, Economic and Operational Activities K.Kh. Tungatov it turned out that it is planned to allocate 25 million tenge on teacher training at the international level, and 14 million tenge - at the republican level. The most important thing to be done is to get an application from the Department of PGE.

Every year in December, the "Best Teacher of the Year" is selected through a questionnaire and based on the results of scientific and educational activities; national and departmental awards of the Ministry of Health are given to teachers.

Annually, the representative of the educational organization responsible for conducting the educational programme in cardiology, the Head of the Department of Interventional Cardiology, A.K. Baimbetov, speaks at republican conferences, congresses, and travels to other cities in Kazakhstan with master classes. One trip is planned to the ESC Congress (ESC, Amsterdam, August 2023) with a poster report (its thesis has been selected, followed by publication in the ESC journal, Thomson Reuters, IF 35 855)

The EEC conclusions by criteria. Compliance with 8 standards (including 7 basic standards, 1 quality development standard): fully complied – 7/1.

Standard 5: fulfilled

Recommendations for improvement identified during the external visit: нет

Standard 6: EDUCATIONAL RESOURCES

Proof of compliance:

6.1 Physical facilities

While studying at the NSCS, residents have the opportunity to gain knowledge about the organization and scope of medical care at all levels - from primary health care to highly specialized; students also have access to modern medical equipment, including laboratories (clinical, biochemical, bacteriological, immune enzyme test systems, polymerase chain reaction laboratory technique), functional diagnostic departments, x-ray rooms, rehabilitation departments, physiotherapy rooms, and exercise therapy rooms (Sub-clause 6.1.1).

The Department of PGE, the R&D Management Department, together with the scientific centre, conduct an analysis of needs and satisfaction in educational and methodological literature on specialties, levels and languages of instruction twice a year (Sub-clause 6.6.3). Taking into account the needs of teaching staff and the analysis carried out the Department of PGE forms applications for the purchase and publication of books and textbooks for the new academic year. However, residents mark the priority for some monographs/ textbooks.

The Centre regularly improves IT technologies and updates its physical facilities. By September 2023, it is planned to introduce the ESUVO.Platonus.KZ automated platform for the entry of educational residency programs into the Bologna System. The Centre ensures all the conditions to uninterrupted access both to the Internet and the local computer system. In recent years, the NSCS has updated own computer equipment park, modernized computer classes, and improved its official website performance (Sub-clause 6.3.3).

Every year, the Department of PGE studies and analyzes the needs and satisfaction of departments with medical equipment available and forms a general clinical application for its purchase.

6.2 Learning settings

In order to implement the residency program in the specialty 7R01101 – “Adult and Paediatric Cardiology”, contracts will be signed with a number of medical organizations in Almaty. Today, the NSCS has its own base as well there is the agreement with the State Unitary Enterprise based on the Right of Economic Management “City Cardiology Centre”. The NSCS applies in practice to pay attention to the availability of accreditation certificates when signing contracts with medical organizations, certifying that the activities of a clinical base comply with the accreditation standards in the field of healthcare of the Republic of Kazakhstan. In addition, the NSCS possesses the traditional practice to annually update contracts by the Clinical Work Department (Sub-clause 6.2.1).

A review of the resources showed that they correspond to the goals and objectives of educational activities. Employees of the educational organization ensure collegial and ethical relations with medical staff, and the clinical base management to achieve the learning outcomes of residents (Sub-clause 6.2.1). The Centre has a sufficient number of thematic patients, modern equipment and ensures access to students, and employees who simultaneously perform the functions of teachers and curators (mentors) provide high-quality training in compliance with ethics and deontology. Before starting the relevant subject of the educational programme, every resident receives a syllabus from a teacher and knows what skills should be acquired and developed during the training.

The equipment of clinical bases contributes to the high-quality organization of the educational process and the provision of safe specialized and highly specialized inpatient and outpatient care to the population of the region.

Practical techniques are trained by residents daily in the NSCS offices, *and to a lesser extent in the simulation centre* (on the basis S.D. Asfendiyarov KazNMU).

In order to validate the implementation of the self-assessment report data and obtain evidence about the quality of programs, interviews were conducted with residents in various specialties (there are no residents in cardiology). Experts asked questions about satisfaction with training, sufficiency of time for patient supervision, work in Damumed with medical documentation, satisfaction with teaching methods and qualifications of teachers, social and moral support for residents in need, participation in journal clubs, availability of international databases of professional literature. In general, residents are satisfied with the training, assessment methods, and purposefully enrolled in this organization, as they believe that the educational organization has good resources, image and international connections.

Residents showed their commitment to the educational institution, were active in answering questions from external experts, demonstrated their point of view on the organization of training, assessment of their skills, advisory support, opportunities to participate in research, financing. Experts have studied the residents' documents (portfolios). *However, residents believe that they have not enough time to master practical skills in the simulation centre and teachers do not actively use these resources* (Sub-clause 6.2.2).

6.3 Information technology

Every year, the fund of the NSCS Scientific Library is updated by about 5-10%, according to requests for the purchase of literature by employees (Sub-clause 6.6.3). Now the library's fund has more than 12356 copies of literature (books, dissertations, abstracts, periodicals in Kazakh, Russian and foreign languages). *When reviewing the library, experts drew attention to the presence of outdated medical literature in large quantities, although there are also modern textbooks.*

The NSCS has an Internet Centre (Sub-clause 6.3.1). It provides information security for the functioning of the educational institution's network, the work of registered users with e-mail, as well as open access to educational information resources of the Internet and the Damumed medical portal for all teachers and residents from any computer included in the institution's telecommunications network (Sub-clause 6.3.2). Elements of distance learning methods were actively used during the

pandemic (telemedicine, zoom conferences), but there is no portal for distance learning, since residency programs must be implemented in an offline format (Sub-clause 6.3.3).

6.4 Clinical teams

The X-ray Surgery, Interventional Cardiology and Arrhythmology Department has all the conditions to acquire the skills of coordinated work in a multidisciplinary team for providing emergency care to patients with a cardiovascular complications, continuity of care at the phases (pre-hospital post-hospital), and sequence of actions. Residents participate in multidisciplinary team meetings; carry out the instructions of senior colleagues within their competence. The educational outcomes of residents are checked by a teacher, and documented in the portfolio. *An analysis of the effects of learning in a team on outcomes was not presented.*

With the help of informal teaching methods, residents are planned to develop leadership skills and ability to teach other healthcare professionals, for example, the NSCS interns and nurses (Sub-clause 6.2.4).

6.5 Medical research and scholarship

The NSCS ensures adequate integration and balance between practical training of residents (75% of the program) and conducting research (informal participation in projects and preparation of scientific publications), which is described in Standard 2. (Sub-clause 6.5.1).

The research base and priority directions in the field of scientific research of the educational institution are described in detail in Section 2.2 hereof (Sub-clause 6.5.2). Annually, the Head of the Department of Interventional Cardiology, A.K. Baimbetov, speaks at republican conferences, congresses, and travels to other cities in Kazakhstan with master classes. One trip is planned to the ESC Congress (ESC, Amsterdam, August 2023) with a poster report (its thesis has been selected, followed by publication in the ESC journal, Thomson Reuters, IF 35 855). In 2022, 20 implementation acts, 3 patents, 4 innovation certificates were prepared and approved. The criterion 6.5.3 is fully fulfilled.

6.6 Educational expertise

The expertise is carried out in the form of an analysis of the needs for specialists, an analysis of teaching methods to train residents, and the results allow us to draw conclusions about the quality of innovative changes in postgraduate education (Sub-clause 6.6.1). For example, all graduates of the NSCS residency are 100% employed and have positive recommendations in their capacity as specialists.

Every year, leading specialists, based on the results of their clinical, scientific and pedagogical work, are encouraged by diplomas, cash prizes, and various awards from the Ministry of Health of the Republic of Kazakhstan, the government (p.6.6.2).

6.7 Learning in alternative settings

The opportunity for residents to study in other medical organizations is provided by agreements/memoranda of the NSCS with foreign leading scientific centres and clinics, including university ones (Sub-clause 6.7.1).

In total, the NSCS has signed more than 30 Memorandums of Cooperation with leading clinics in Kazakhstan and outside the country (Japan, South Korea, Great Britain, the Netherlands, Turkey, Russia, Armenia, Uzbekistan, Belarus, Kyrgyzstan, Ukraine, Azerbaijan); clinics with cardiology departments, for example, Nagasaki National Medical Centre (Nagasaki, Japan); Erasmus University (Rotterdam, Netherlands); Ajibadem International Hospital (Istanbul, Turkey); A.N. Bakulev Research Centre for Cardiovascular Surgery of the Russian Academy of Medical Sciences (Moscow, Russia); Faculty of Medicine of St. Petersburg State University (St. Petersburg, Russia); the Republican Scientific and Practical Centre “Cardiology” (Minsk, Belarus); M.M. Mirakhimov National Centre of Cardiology and Therapy under the Ministry of Health of the Kyrgyz Republic (Bishkek, Kyrgyzstan).

The academic policy of the educational institution provides a system for the transfer and offsetting of learning outcomes between educational organizations and the use of academic credits (Sub-clause 6.7.2).

Since there are quite a lot of agreements (30), however, it is difficult to apply procedures for the implementation of academic mobility due to the difference in educational programmes of Kazakhstan

and foreign countries. However, short-term movements of teachers abroad are carried out at the expense of the NSCS and sponsors (participation in international conferences) (Sub-clause 6.7.3).

The EEC conclusions by criteria. Compliance with 18 standards (including 11 basic standards, 7 quality development standards): fully complied – 10/7, partially complied – 1/0.

Standard 6: fulfilled

Recommendations for improvement identified during the external visit:

- 1) To provide the residency program in specialty “Adult and Paediatric Cardiology” with appropriate clinical facilities in order to meet all the requirements for the subjects or disciplines of the educational programme included in SCES 2022 (6.2.1);

Standard 7: PROGRAMME EVALUATION

Proof of compliance:

7.1 Mechanism for programme monitoring and evaluation

The educational programme for the residency 7R01101 “Adult and Paediatric Cardiology” is a set of documents regulating the learning process in the residency. The educational programme provides the objectives, expected outcomes, composition, conditions and technologies for the implementation of the educational process, as well as the assessment of the quality of residency training. In order to improve the educational and methodological support of the educational programme, the TP is being developed.

The planning of the educational process is represented by the structure of logically related documents (typical curricula, SC, ESC, individual curricula of students, working curricula, and TP).

The portfolio of residents is structured in documents reflecting the professional growth of a future specialist.

Upon completion of each subject or discipline and the academic period, feedback data are collected and analyzed.

The educational programme monitoring begins at the stage of its development and discussion at the meeting of the EMB, when the content, subjects or disciplines, topics of electives are formed. Subsequently, feedback from teachers and residents is collected (to a greater extent, not the program content is evaluated, but the methods of teaching and evaluating residents) (Sub-clause 7.1.1)

The absence of an electronic grade book indicates the lack of fairness in conducting the educational process, there is no formative assessment, result scores of midterm examination, and as a result there is the assessment of residents without reliability and validity.

When interviewing residents, studying the grade books and documentation on the PGE, the ***absence of assessment sheets of residents*** was revealed (duty shifts, assessment of clinical skills, maintenance of medical documentation, a 360-degree assessment, etc.).

The assessment of the learning outcomes is carried out based on the results of examination sessions (final academic assessment), and since all residents successfully pass the examination for an independent assessment of knowledge, therefore, such outcome indirectly reflects the intended outcomes in the cardiology program (Sub-clause 7.1.2). All other accreditation standard requirements 7.1.2 are fulfilled in the NSCS through an assessment of the academic performance and activity of residents (in order to understand that the resident admission policy allowed choosing qualified applicants). The level of qualification of teachers is assessed according to the submitted documentation, therapeutic skills (recovery of patients, quality of medical care, and absence of complaints), while all teachers involved in the cardiology residency program have a high professional level, but with a bias in interventional cardiology. Teaching methods are limited to conducting seminars, clinical reviews, bedside training, which requires the NSCS to introduce more diverse methods. However, residents (during the interview) believe that they only need training directly at the bedside.

The evaluation procedure of methods for assessment of residents’ knowledge and skills, sufficiency and quality of learning resources, is also based on feedback data from residents.

7.2 Resident and teacher feedback

Teachers and residents have the opportunity to participate in evaluation and subsequent improvement of the educational programme on a regular basis through various feedback channels (the weblog of the Board Chairman, questionnaires, word-of-mouth, direct address to a teacher and the head of the Department of PGE) (7.2.1). The blog of the Chairman of the Management Board is used to collect feedback from teachers and residents, where NSCS students and employees may receive answers to their questions about the conditions for implementing the educational programme.

Each structural subdivision and department of the educational institution maintains a journal on quality improvement, in which all inconsistencies, claims, consumer complaints (patients), their causes, and the implementation of corrective actions are recorded.

7.3 Performance of residents and graduates

After mastering the educational programme, successfully passing the final academic assessment, upon completion of the residency programme in the NSCS, 100% of graduates receive a specialist certificate, % of graduates are awarded a second qualification category, and 100% of graduates are employed.

Interviews were conducted with employers of residency graduates online (see table 1). All employers noted the high clinical and theoretical training of residents (in relation to other specialties, but the results can be extrapolated to the cardiology programme).

Monitoring of residents graduated from the residency programme is planned to be carried out through feedback collection from employers (practical healthcare system). Taking into account the 100% employment of graduates from other educational programmes, employers are satisfied with the skills of students graduated from the NSCS (Sub-clause 7.3.2).

Given that the Department of PGE is engaged in selection of residents, planning of the educational programme, and monitoring of graduates, the results of the evaluation of the clinical practice of residents and graduates are available to responsible persons. (Sub-clause 7.3.3)

7.4 Involvement of stakeholders

Online interviews with five employers were conducted included such questions as: knowledge of the university's mission, participation in the development of the mission and proposals to the strategic plan, involvement in the work of advisory bodies, satisfaction with the basic knowledge and skills of residents, participation in the training of residents through mentoring, providing the department and residents with the necessary resources for practical training and formation clinical thinking, problems of interaction with departments and universities in general, 100% employment of residency graduates.

However, there is no questionnaire survey of stakeholders.

7.5 Approval of educational programmes

The NSCS has developed mechanisms for approving educational programmes which provide for the evaluation of programs at the stages of planning, implementation, analysis of results and implementation of changes, which allows monitoring the process of implementing the EP and the progress of residents, and ensures the identification and timely resolution of emerging problems.

The programme is approved at a meeting of the EMB composed of the main stakeholders.

The expertise is carried out according to the approved SOP "Development and Discussion of Educational programmes (EP)", Order No. 600 as of Aug 2, 2018.

The system of quality control and monitoring and compliance of clinical facilities, material and technical equipment and other educational resources of the residency program are described in Clause 6 hereof.

The EEC conclusions by criteria. Compliance with 10 standards (including 7 basic standards, 3 quality development standards): fully complied – 3/3, partially complied – 4/0.

Standard7: fulfilled

Recommendations for improvement identified during the external visit:

1) To involve external examiners (independent examiners, stakeholders) in the assessment of residents and document this process (3.1.3, 7.2.1, 7.4.1);

2) To introduce an electronic database on assessment of residents (for example, on the Platonus

platform) in order to ensure the transparent implementation of the educational programme and the learning outcomes of residents, as well as the convenience of monitoring the learning outcomes (7.1.1);

3) To develop and implement assessment sheets for evaluating the independent work of a resident (7.1.2) in order to obtain information about the knowledge and skills acquired by residents and motivation for independent study.

Standard 8: GOVERNANCE AND ADMINISTRATION

Proof of compliance:

8.1 Governance

The residency programme was established in accordance with the Law “On Education” of the Republic of Kazakhstan (Government Decree No. 319-III ZRK dated July 27, 2007). The residency program is implemented under License No. 12018231 dated Nov 21, 2012; Appendix to License No. 001 (Order of the Committee for Control in the Field of Education and Science under the MEDSc dated Nov 21, 2012 No. 1543); License of the MEDSc No. 12018231 dated Nov 21, 2012 and the Certificate of Institutional Accreditation, as well as it is expected to obtain the Certificate of Primary Accreditation on the Educational Programme: 7R01101 – “Adult and Paediatric Cardiology”.

The NSCS ensures that postgraduate education programme is conducted in accordance with the following documents:

1. The Law of the Republic of Kazakhstan “On Education”, Article 5, Subparagraph 2-1 in order to implement the Decree of the Government of the Republic of Kazakhstan dated May 20, 2013 No. 500 “On Approval of the State Educational Order for Training of Specialists with Higher and Postgraduate Education”, which regulates the number of *state educational orders for training of residents in the field of healthcare system*.

2. Model Regulations on Admission to Training in Educational Institutions Implementing Educational programmes of Higher and Postgraduate Education, Article 5, Subparagraph 11) of the Law of the Republic of Kazakhstan “On Education” dated July 27, 2007 and Model Regulations on Admission to Training in Educational Institutions Implementing Professional Training Programs of Postgraduate Education, approved by Order No. 600 dated October 31, 2018 (as supplemented and amended in June 2020), which determine the *procedure for selection of citizens to residency*. The procedures for admission and selection of residents are described in detail in Standard 4.1.

3. The State Educational Standard on Residency Programme for Medical Specialties and the Model Professional Training Program for Medical Residency Specialties, approved by Order No. 647 of the Acting Minister of Health and Social Development of the Republic of Kazakhstan dated July 31, 2015, which *determines the composition of the educational programme*.

The NSCS *has developed and approved the main internal document* that defines the scope of responsibilities and powers of the NSCS in relation to the residency EP, including the obligation to ensure the educational process in full with all necessary information sources and access to online educational resources. This document is guided by the Department of PGE when implementing management of the residency educational programme. In accordance with the Law of the Republic of Kazakhstan “On Education” and other regulatory legal acts governing the activities of medical higher educational institutions, the NSCS has developed and approved documents defining the scope of responsibilities and powers of the NSCS in relation to the residency EP, including obligations to ensure the educational process in full with all necessary information sources: textbooks, teaching guides, teaching aids and guidance papers in subjects or disciplines, handout materials and instructions for independent work, electronic textbooks, and access to online educational resources:

- Academic Policy (Regulation on Organization of the Educational Process as of Jan 5, 2021) All documents have been updated in accordance with the terms of their validity. The QMS Department is responsible for timely updating.

The procedure for admission of citizens to training in the residency is established by the Model Regulations on Admission to Training in Educational Institutions Implementing Professional Training

Programs of Postgraduate Education, approved by Order No. 600 dated October 31, 2018 (as supplemented and amended in June 2020), the State Compulsory Educational Standard on Residency in Medical Specialties. All students who have mastered the residency program in specialty 7R01101 – “Adult and Paediatric Cardiology” and those who have successfully passed the final academic assessment will get a national document on conferring a doctor qualification in specialty 7R01101 – “Adult and Paediatric Cardiology”.

On the basis of the Order of the MEDSc “On Approval of the Types and Forms of National Education Documents and the Regulations for their Issue” dated January 28, 2015 No. 39, in accordance with Article, Subparagraph 6-3) of 5 of the Law of the Republic of Kazakhstan “On Education” dated July 27, 2007, a certificate of completion of residency is issued, in addition, the NSCS after the FCE, issues a certificate of a specialist without awarding a category in specialty 7R01101 – “Adult and Paediatric Cardiology of the new professional training program in medical residency specialties, approved by the Order of the Acting Ministry of Health and the Social Development of the Republic of Kazakhstan dated July 31, 2015. No. 647, Model Regulations on Admission to Training in Educational Institutions Implementing Educational programmes of Higher and Postgraduate Education, Article 5, Subparagraph 11) of the Law of the Republic of Kazakhstan “On Education” dated July 27, 2007.

The procedures for the admission and selection of residents are described in detail in Standard 4.

The programme is implemented in accordance with the requirements of regulations regarding the admission of residents (selection criteria and number), the learning process, assessment of knowledge and skills, established learning outcomes, and programme management.

The principles and approaches of periodic assessment of management and employees regarding the achievement of the mission have been implemented.

The Department of PGE under the supervision of the Deputy Chairman of the Board for Clinical, Scientific and Innovative Activities coordinates the implementation, control and monitoring of the implementation of residency programmes in all licensed specialties.

8.2 Academic leadership

The Centre has the management system provided for (by the Charter, the management structure, the Regulations on Divisions and job descriptions). There have been identified persons responsible for the development strategy of postgraduate education.

The Deputy Chairman of the Board for Scientific, Clinical and Innovative Activities is responsible for the strategy of postgraduate education development. The Department of Postgraduate Education together with the Department of Research and Development Management and other departments ensure the learning process through the development and approval of all educational learning materials, monitoring the performance of activities.

The Department of PGE is an administrative structural subdivision of the NSCS, which organizes the training of specialists of higher professional postgraduate education. The purpose of the department is to train and coordinate the activities of highly qualified scientific and teaching staff of various profiles in the form of residency. The Department of PGE interacts and regulates its relations with educational and non-medical units in accordance with the NSCS structure. General direction and guidance on the work of the Department is provided by the Head. The Head reports directly to the Deputy Chairman of the Centre Board of Scientific, Clinical and Innovative Activities.

The heads of departments are directly responsible for the organization and effectiveness of the formative and summative assessment and midterm assessment in disciplines, consult and take exams on a subject in accordance with the academic calendar, working program, syllabus and exam schedule.

8.3 Educational budget and resource allocation

The resources in the A.N. Syzganov NSCS are allocated in all areas of the surgical service affecting the work in practical, scientific, educational, research activities of all clinical and paraclinical units (Sub-clause 8.3.1).

In the light of the implementation of the Strategic Plan principal directions, the budget of the A.N. Syzganov NSCS is formed from several sources at their own expense (according to the programme - Residency Training, according to the programme – Advanced Training of Personnel, the

according to the programme – Statutory Free Medical Assistance and High-Tech Medical Services, the program – Basic Financing and Compulsory Social Health Insurance) (Sub-clause 8.3.1).

The financing of the residency program depends on the formation of an annual state order. Every year, the Government of the Republic of Kazakhstan approves the state educational order for the training of specialists with higher and postgraduate education, according to which the budgets of the residency program is determined. In accordance with the Order of the Minister of Health of the Republic of Kazakhstan dated June 14, 2004 No. 474 “On Approval of Rules for Calculating the Cost of Training per One Student, a Resident, a Master’s Student, a Doctoral Student (PhD) in Educational Institutions and Scientific Organizations in the Field of Healthcare Inside the Country by State Educational Order” (as supplemented and amended on August 8, 2011) the financial and economic calculations of the cost of training in a residency is carried out within the framework of the state educational order, rational use of funds, allocated from the republican budget for the training of specialists with medical and pharmaceutical education (Sub-clause 8.3.2).

The implementation of residency programmes is supported by the salary fund of residency teachers, providing students with educational resources (educational and scientific literature, access to the Internet and to international information databases of literature, information and communication technologies), strengthening the program through invitation of foreign teachers, academic mobility programs and the opportunity for residents to participate in international and republican conferences, seminars Sub-clause 8.3.2).

In order to ensure the efficient use of financial resources (including distribution), Department of Economics and Finance has been established to review the results of the formation and use of financial resources (Sub-clause 8.3.2).

The NSCS pays great attention to:

- strengthening the individual contribution of each teacher to the results of their work;
- orientation to the final results of all activities of the structural unit and teachers;
- - variability of key indicators taking into account the specifics of the structural unit;
- the possibility of using the wage savings fund for the self-development of teaching staff;
- specification of the work plan of the structural unit and each teacher;
- transparency of ranking through the development of unified criteria;
- timely execution of control orders;
- differentiated remuneration of teaching staff;
- increase the level of motivation of teaching staff;
- strengthening of labor discipline in the team.

Teachers are provided with financial assistance (according to the trade union system), the scientific activity of teaching staff is stimulated (payment for articles with a high impact factor, participation in R&D), which affects the introduction of innovations in the educational process in the residency (Sub-clause 8.3.2).

The NSCS’s financial activities are also reviewed quarterly at a meeting of the Board of Directors. In addition, financial activity is evaluated using specific financial indicators. The following indicators characterize the stable financial condition of the NSCS. According to the accounting report, all indicators are maintained, and the financial condition of the NSCS is considered stable.

8.4 Administration and management

The Centre TS and employees carry out their work and activities in accordance with the internal labour regulations and job descriptions approved by the director of the educational institution.

The NSCS conducts purposeful work on the training and retraining of academic staff. The procedure for recruitment and appointment of academic staff is carried out by concluding employment contracts, as well as competitive replacement of vacant positions in accordance with the requirements of the current legislation (Sub-clause 8.4.1).

The total number of the NSCS academic staff in specialty 7R01101 – “Adult and Paediatric Cardiology” includes 4 (100%) qualified doctors, 2 of them (50%) have a PhD degree. There is no those who have a candidate of sciences degree. The share of teachers with academic degrees and titles is 50% (Sub-clause 8.4.1).

In recent years, there has been a significant increase in the number of scientific publications among the Centre ATS in publications with a positive impact factor. In 2022, the number of scientific articles in publications with a non-zero impact factor was amounted to 7 (Sub-clause 8.4.1).

On April 5, 2018, in accordance with the Decree of the Government of the Republic of Kazakhstan, the state-owned stake (100%) of A.N. Syzganov National Scientific Centre of Surgery JSC was transferred to the possession and use of the S.D. Asfendiyarov Kazakh National Medical University NJSC, which made certain adjustments to the quality management system, including regular internal and external reviews and audits, including those providing the residency program processes (Sub-clause 8.4.2).

The Centre defines the overall strategy, main directions, priorities and objectives of the policy in the field of improving the quality of education in accordance with the mission, vision and strategic plan for the development of the NSCS. Ensuring the quality of the educational process in the residency is determined by the fulfilment of mandatory requirements for the level of training (SCES 2022, educational programmes) and the creation of a system for monitoring the effectiveness of the ATS work and the implementation of the IEP by residents (open classes, monitoring attendance and obtaining practical skills). The Department of PGE, the EMB together with members of the Educational programmes Committee (employers, students) are responsible for monitoring the quality of the educational process (Sub-clause 8.4.3).

The effectiveness of the acquired education is also confirmed by the results of annual employer and student of feedback survey to assess the level of satisfaction with educational programmes. The educational programme of the residency in specialty “Adult and Paediatric Cardiology” is accredited for the first time, so there are no survey data at the moment (Sub-clause 8.4.3).

8.5 Requirements and regulations

The mechanism of interaction of the A.N. Syzganov NSCS operating as a national medical research organization, with authorized bodies (MoH, MEdSc) and the healthcare sector is regulated by the legislation of the Republic of Kazakhstan; implementation of state programs, decrees and orders; contracts and agreements with health management bodies; contracts and agreements with healthcare organizations; written appeals of authorized state bodies and medical organizations.

A.N. Syzganov NSCS will implement the educational residency program in specialty 7R01101 – “Adult and Paediatric Cardiology”, the developers of which are employees of the Department of Interventional Cardiology, Arrhythmology and Endovascular Surgery, while they are also among the developers of more than 40 clinical protocols for the diagnosis and treatment of cardiovascular diseases (Sub-clause 8.5.1).

When developing the educational programme in specialty 7R01101 – “Adult and Paediatric Cardiology”, the following normative documents are taken into account: the Law “On Education”, the State Program for the Development of Healthcare until 2025, the classifier of specialties (2022), the State Compulsory Educational Standard (SCES 2022), regulatory legal acts on residency. The NSCS has a state license for postgraduate education (residency) and is engaged in the inclusion of an educational programme in cardiology in the ESUVO.

A.N. Syzganov NSCS actively interacts with the MEdSc on the organization of the educational process in residency through the development and implementation of SCES 2022 and coordinating with the priority areas of national legislative and program documents (the Law of the Republic of Kazakhstan “On Education” dated June 27, 2007 No. 319-III (as supplemented and amended on May 30, 2020), :On Approval of the State Program for the Development of Education and Science of the Republic of Kazakhstan for 2020 – 2025”, and Resolution of the Government of the Republic of Kazakhstan dated December 27, 2019 No. 988 (Sub-clause 8.5.1).

The EEC conclusions by criteria. Compliance with 11 standards (including 8 basic standards, 3 quality development standards): fully complied – 8/3.

Standard 8: fulfilled

Recommendations for improvement identified during the external visit: No

Standard 9: CONTINUOUS RENEWAL

Proof of compliance:

The NSCS regularly initiates procedures for regular review and updating of the organizational structure (approved annually by the Academic Council), the process of training residents (the Department of PGE annually reviews), the structure and composition of the program (the Department of PGE and responsible teachers), learning outcomes (based on the current SCES and qualification characteristics), assessment of knowledge and skills (Sub-clause 9.1).

To improve the effectiveness of teaching residents, teachers conduct classes using new innovative educational technologies, situational tasks are used, clinical cases are analyzed, game training (business, role-playing games) is conducted, problem–built training – PBL is used, team training -TBL is widely used (Sub-clause 9.1).

The Department of PGE regularly conducts seminars on innovations, testology, and teachers who have been trained in new educational technologies in the Republic of Kazakhstan and abroad apply cascade model of training in the NSCS (p.9.1).

The equipment of the NSCS makes it possible to effectively implement active teaching methods (analysis of clinical cases, rounds and consultations, conducting diagnostic research methods, reports and reports at medical conferences, weekly scientific and practical conferences, etc.), training through research (conducting practical classes at interactive stations for viewing visualizing medical images, interactive whiteboard, participation of residents in scientific circles and scientific and practical conferences) (item 9.1).

The system of moral motivation of personnel will be based on the provisions of the Labour Code of the Republic of Kazakhstan and other regulations of the Republic of Kazakhstan. Financial incentives for the Centre employees and structural divisions for work performed are made in accordance with the “Regulations on Remuneration, Bonuses and Other Social Benefits in A.N. Syzganov NSCS JSC”, approved by the Decision of the Management Board.

The NSCS have employees with national awards for their contribution to the development of science and education of the Republic of Kazakhstan.

Thus, the Centre provides an opportunity for the teaching staff to improve and develop their pedagogical skills and professionalism. The Department of Innovative Technologies and Training Quality Monitoring, as well as the HR Department are responsible for control over the professional development of teaching staff.

The NSCS maintains its reputation and image the by preserving and developing traditions that have a decisive impact not only on the image, but also on the effectiveness of its activities in the educational market. Internal audits of the activities of the institution and its divisions are carried out in accordance with internal regulatory documents and are routine. In accordance with the schedule of internal audits approved by the Chairman of the Management Board, the Centre carries out internal quality checks (audits). Based on the results of audit, the head of the unit audited develops corrective actions aimed at preventing the possibility of the identified inconsistencies in the future. The effectiveness of corrective actions is checked by the same head, the control is carried out by an auditor (Sub-clause 9.1).

The NSCS improves mechanisms for periodic review, study and evaluation of implemented educational programmes and ensures the quality of the program management process. Educational programmes are regularly studied and evaluated through collecting feedback from interested parties, as well as an analysis of students' academic performance. The Centre is also constantly improving the procedures for evaluating programs at the level of the PGE sector, with the inclusion of all aspects (context, resources, performance indicators, customer satisfaction, employment, etc.) and a wider range of stakeholders. Thus, analytical work is carried out at the level of the clinical unit in order to evaluate the program in the form of an annual report on PGE. The improvement of the program evaluation procedure at the Centre level is carried out through the discussion of the program composition and special subjects or disciplines at the meetings of the PGE sector and at the meeting of the NSCS Academic Council (Sub-clause 9.1).

The NSCS applies innovative technologies in the educational process based on a powerful material and technical base, the improvement of which is carried out in accordance with the demands of time, prospective research, analysis of results, own experience and the study of literature on medical postgraduate education. Accordingly, in a comparative aspect with past experience, current activities, it becomes possible to improve the procedures for updating postgraduate medical education programs (Sub-clause 9.2).

The EEC conclusions by criteria. Compliance with 2 standards (including 1 basic standard, 1 quality development standard): fully complied – 1/1.

Standard 9: fulfilled

Recommendations for improvement identified during the external visit: No

CONCLUSION:




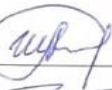

After conducting external evaluation of the educational programme, it was found that out of **114 standards** (including 82 basic standards and 32 quality improvement standards), 70 (85.4%) basic accreditation standards and 30 (93.8%) quality improvement standards demonstrate full compliance; 12 basic standards and 2 quality improvement standards are partially fulfilled. Non-compliance with the standards has not been established. The implementation of the quality improvement standards indicates the compliance of the educational institution with the international practice of training residents.

5. Recommendations for improving the educational programme 7R01101 – “Adult and Paediatric Cardiology”:

1. To create a separate, well-visualized section on residency in the NSCS website, where to place basic information on the residency educational programmes, including the mission and learning outcomes, requirements for admission to the residency, issues of academic integrity, ethics, rights and responsibilities of residents, training requirements, etc.) (2.1.8);
2. To add the following electives in the component of choice: “Differential diagnosis of rhythm disturbances”, “Innovative diagnostic methods in cardiology”, “Arrhythmia Treatment” (2.3.1) and systematically update the topics of electives, basing them on the current needs of practical healthcare and modern scientific data on cardiology.
3. When assessing residents, to regularly apply the methods of formative assessment and midterm examination, providing them with appropriate methodological documentation. To introduce the GPA calculation for midterm assessment and as proof in admission to the final academic assessment (Platonus). To develop and implement assessment sheets for assessing the independent work of residents (3.1.1, 3.1.2, 3.1.3, 3.1.4, 3.1.7, 3.2.1, 3.2.2);
4. To involve external examiners (independent examiners, stakeholders) in the assessment process of residents and document it (3.1.3, 7.2.1, 7.4.1);
5. To provide the residency program in specialty “Adult and Paediatric Cardiology” with appropriate clinical facilities in order to meet all the requirements for the subjects or disciplines of the educational programme included in SCES 2022 (6.2.1);
6. To involve external examiners (independent examiners, stakeholders) in the assessment of residents and document this process (3.1.3, 7.2.1, 7.4.1);
7. To introduce an electronic database on assessment of residents (for example, on the Platonus platform) in order to ensure the transparent implementation of the educational programme and the learning outcomes of residents, as well as the convenience of monitoring the learning outcomes (7.1.1);
8. To develop and implement assessment sheets for evaluating the independent work of a resident (7.1.2) in order to obtain information about the knowledge and skills acquired by residents and motivation for independent study.

6. Recommendation to the ECAQA Accreditation Council

The EEC members have established that the educational programme 7R01101 – “Adult and Paediatric Cardiology” comply with Accreditation Standards and came to a unanimous decision to recommend that the ECAQA Accreditation Council accredit this programme for period of **3 years**.

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**Quality profile and criteria for external evaluation of the educational programme
(generalization)**

Standard	Criteria for evaluation	Number of standards	BS*/QIS	Evaluation		
				Fully complied Largely complied	Partially complied	Not complied
1.	MISSION AND OUTCOMES	14	9/5	9/5		
2.	EDUCATIONAL PROGRAMMES	22	19/3	18/3	1/0	
3.	ASSESSMENT OF RESIDENTS	9	6/3	0/1	6/2	
4.	RESIENTS	20	14/6	14/6		
5.	TEACHERS	8	7/1	7/1		
6.	EDUCATIONAL RESOURCES	18	11/7	10/7	1/0	
7.	PROGRAMME EVALUATION	10	7/3	3/3	4/0	
8.	GOVERNANCE AND ADMINISTRATION	11	8/3	8/3		
9.	CONTINUOUS RENEWAL	2	1/1	1/1		
		114	82/32	70/30	12/2	
				114		

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

№	Наименования документов	Количество
1.	Отчет по самооценке образовательной программы АО «Национальный научный центр хирургии им. А.Н. Сызганова» на соответствие стандартам аккредитации образовательных программ по специальности резидентуры 7R09115 «Нефрология взрослая, детская»	1
2.	Кодекс чести преподавателя	1
3.	Академический календарь резидентуры	1
4.	Кодекс чести слушателя резидентуры	1
5.	Сферы компетенции выпускника резидентуры	1
6.	Перечень документов для поступления в резидентуру	1
7.	Политика в области качества ННЦХ	1
8.	Положение о промежуточной аттестации	1
9.	Положение об итог. госуд. аттестации	1
10.	Портфолио резидентов	2
11.	Журналы посещаемости резидентов по дисциплинам	5
12.	Экзаменационные ведомости	5
13.	Сертификаты повышения педагогической квалификации	2
14.	Положение об организации учебного процесса	1
15.	Положение об отделе ПО	1
16.	Справочник -путеводитель 2021	1