

To the Accreditation Council of the
Eurasian Centre for Accreditation and
Quality Assurance in Education and Healthcare
June 24, 2024

**REPORT
OF THE EXTERNAL EXPERT COMMISSION ON THE RESULTS OF THE
EVALUATION OF THE “NATIONAL SCIENTIFIC CENTER FOR
ESPECIALLY DANGEROUS INFECTIONS NAMED AFTER
M.AIKIMBAYEVA” FOR COMPLIANCE WITH THE STANDARDS OF
INSTITUTIONAL ACCREDITATION OF ORGANIZATIONS OF
ADDITIONAL AND NON-FORMAL EDUCATION (CONTINUOUS
PROFESSIONAL DEVELOPMENT)**

period of external expert evaluation: June 11-13, 2024

Almaty, 2024

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LIST OF SYMBOLS AND ABBREVIATIONS

| Abbreviation | Designation |
|-----------------------------------|---|
| ECAQA | Eurasian Centre for Accreditation and Quality Assurance in Education and Healthcare |
| WFME | World Federation of Medical Education |
| RK | Republic of Kazakhstan |
| NSCEDI | National Scientific Centre for Especially Dangerous Infections named after M. Aikimbaeva |
| MOH RK | Ministry of Health of the Republic of Kazakhstan |
| Ministry of Agriculture of the RK | Ministry of Agriculture of the Republic of Kazakhstan |
| MSHE RK | Ministry of Science and Higher Education of the Republic of Kazakhstan |
| CSEC MOH RK | Committee for Sanitary and Epidemiological Control of the Ministry of Health of the Republic of Kazakhstan |
| CPCR MNE RK | Committee for the Protection of Consumer Rights of the Ministry of National Economy of the Republic of Kazakhstan |
| ITC | International training center |
| CRL | Central reference laboratory |
| GIS | Geographic information system |
| SSAD | State Standard of Additional Education |
| DET | Distance educational technology |
| KazMNU | Kazakh National Medical University |
| MO | Medical organization |
| ISTC | International Science and Technology Centre |
| MNE RK | Ministry of National Economy of the Republic of Kazakhstan |
| RW | Research work |
| CDP | Continuous professional development |
| NCE | National Center of Expertise |
| SPC SEEM | Scientific and Practical Centre for Sanitary and Epidemiological Expertise and Monitoring of the RSE on the REM "National Centre for Public Health" of the Ministry of Health of the Republic of Kazakhstan |
| NRCV | RSE on the REM "National Reference Centre for Veterinary Medicine" of the Committee for Veterinary Control and Supervision of the Ministry of Agriculture of the Republic of Kazakhstan |
| RVL | Republican Veterinary Laboratory |
| EDI | especially dangerous infections |
| RSE on the REM | Republican state enterprise on the right of economic management |
| PCS | Plague Control Station |
| PD | Profile disciplines |
| Academic staff | Academic staff |
| PEC | Permanent expert commission |
| PDC | Profile disciplines of choice |

| | |
|-----------|---|
| AT | Advanced training |
| PCR | Polymerase chain reaction |
| RSCI | Russian Science Citation Index |
| CIS | Commonwealth of Independent States |
| SAET | Specialized anti-epidemic teams |
| IWS | Independent work of student |
| SOP | Standard Operating Procedure |
| ST RK | National standard of the Republic of Kazakhstan |
| ISO | International standard approved by the International Organization for Standardization |
| CDC | Centers for Disease Control |
| DTRA | Defence Threat Reduction Agency |
| GMP | Good Manufacturing Practice |
| ISO | International Organization for Standardization |
| SPF | Specific Pathogen Free |
| TC | Typical curriculum |
| LBS-3 | Level of biological safety |
| Emergency | Emergencies |
| FELTP | Field Epidemiology & Laboratory Training Program |
| LBS-2 | Level of biological safety -2 |
| LBSA | Level of biological safety when working with animals |

1. Composition of the External Expert Commission

In accordance with ECAQA Order No. 23 dated May 30, 2024, an External Expert Commission (hereinafter referred to as EEC) was formed to conduct an external institutional evaluation of the “National Scientific Centre for Especially Dangerous Infections named after Masgut Aikimbaev” of the Ministry of Health of the Republic of Kazakhstan during the period June 11-13, 2024 in the following composition:

| № | Status as part of the EEC | Full name | Academic degree/title, position, place of work/place of study, course, specialty |
|----------|----------------------------------|--------------------------------|--|
| 1 | Chairman | Akhmetova Almira Kalikapasovna | Candidate of Medical Sciences, Associate Professor, Acting Professor of the Department of Infectious Diseases, Dermatovenereology and Immunology of Semey Medical University. |
| 2 | International expert | Urunova Dilbar Makhmudovna | Candidate of Medical Sciences, Head of the Laboratory of Epidemiology of Infectious Diseases. Republican Specialized Center for Epidemiology, Microbiology, Infectious and Parasitic Diseases, Republic of Uzbekistan |
| 3 | Academic expert | Ibraeva Gulmira Alpyspaevna | Candidate of Medical Sciences, Associate Professor, Director of the “National Center for Continuing Education PROFESSIONAL”, International trainer on HIV/AIDS infection, member of the working group of the Commission for “Verification of Measles and Rubella Elimination of the Republic of Kazakhstan” under the Ministry of Health of the Republic of Kazakhstan, member of the working group of the Committee for Continuing Medical Education of the EMA REMC of the Ministry of Health of the Republic of Kazakhstan on the development of normative legal acts and legislative documents in the field of additional professional education |
| 5 | Expert employer | Dauletova Kamar Samalbekovna | chief nurse of the RSE on the REM "Republican Scientific and Practical Center for Mental Health" of the Ministry of Health of the Republic of Kazakhstan |
| 6 | Expert listener | Mukhaliev Yerdan Yerlanovich | Assistant of the Department of Children's Infectious Diseases of the JSC “Kazakh National Medical University named after S.D. Asfendiyarov”, infectious disease specialist. |
| | Expert observer | Amandykov Alibek Begendikovich | Head of the Department of International Cooperation and Public Relations, NU “Eurasian Center for Accreditation and Quality Assurance in Education and Healthcare” |

The work of the EEC was carried out in accordance with the Regulations on the EEC.

Report of the EEC of the RSE on the REM "National Scientific Centre for Especially Dangerous Infections named after Masgut Aikimbaev" of the Ministry of Health of the Republic of Kazakhstan for compliance with the Standards of institutional accreditation of organizations of additional and non-formal education (continuous professional development) (hereinafter referred to as the Accreditation Standards), recommendations of the EEC for improving core activities and recommendations for the ECAQA Accreditation Council.

2. General part of the final report

2.1 Presentation of the RSE on the REM “National Scientific Centre for Especially Dangerous Infections named after Masgut Aikimbaev” of the Ministry of Health of the Republic of Kazakhstan

| | |
|--|---|
| Name of organization, legal form of ownership, BIN | RSE on the REM "National Scientific Centre for Especially Dangerous Infections named after Masgut Aikimbaev" |
| Governing Body | Ministry of Health of the Republic of Kazakhstan |
| Full name of the first manager | Zhumadilova Zauresh Bapanovna |
| Created date | 1949 |
| Location and contact details | Republic of Kazakhstan Almaty Jahanger Street, 14 1 |
| State license for educational activities - date, number (if applicable) | Series AA No. 0000699 dated April 26, 2004 |
| Information about branches, subsidiaries (if any) | not available |
| Year of commencement of the implementation of additional and non-formal education programs, total number of programs and number of students trained | Start year: 1949 The total number of additional education programs is 21 with hours ranging from 60 to 900 hours Total number of students trained - more than 10,000 |
| Number of listeners this year | 177 |
| Full-time teachers/part-time workers involved in the implementation of additional education programs, incl. % sedate | The total number of teachers is 23, including full-time teachers - 23, part-time teachers - 0. Sedateness - 60.9% Categorization - 15% |
| Availability of a unit responsible for the educational process in additional and non-formal education | Name: International Training Centre Year of creation: 1949 Head: Isaeva Svetlana Berdimuratovna |
| Number of scientific projects over 5 years | 12 |
| Number of international treaties over 5 years | 12 |
| Website Instagram Facebook with active pages | https://nscedi.kz https://www.instagram.com/nscedi.kz https://m.facebook.com/crlalmaty |
| Information about accreditation as a medical organization (date, number, period) | License for medical activities No. 20000473 dated January 13, 2020 |

| | |
|----------------------------|---|
| Website | https://nscedi.kz |
| Instagram | https://www.instagram.com/nscedi.kz |
| Facebook with active pages | https://m.facebook.com/crlalmaty |

Strengths of the RSE at the REM “National Scientific Centre for Especially Dangerous Infections named after Masgut Aikimbaev” of the Ministry of Health of the Republic of Kazakhstan and **achievements over 5 years:**

- Availability of a modern laboratory of the Central Reference Laboratory (LBS2, LBS3, LBSA3);
- Certification according to international standards ISO 9001:2015, ISO 35001:2019, ISO 27001;
- Availability of a training center with a bacteriological hall that meets all safety requirements and is equipped with equipment. Classes are taught by highly qualified teachers, supported by support staff to optimize the learning process;
- Highly qualified Academic staff;;
- Extensive partnerships with leading international organizations and research institutes.

Currently, NSCEDI is a leading research centre whose mission is to ensure the biological safety of the country, develop and implement the scientific basis for monitoring, prevention, and assessing the risk of human infection with especially dangerous infections on the territory of Kazakhstan to prevent and reduce diseases in people and animals.

The key areas of activity of the NSCEDI are: conducting scientific research in the field of biosafety, diagnostics, clinical practice, treatment and prevention of especially dangerous infections, training of specialized personnel and advanced training of doctors, biologists, secondary medical professionals, development, production and sale of immunobiological drugs for diagnosis, prevention and treatment infectious diseases in medicine and veterinary medicine, participation in measures for sanitary protection of the borders and territory of the Republic of Kazakhstan from the importation and spread of especially dangerous infections;

Over the past 5 years, 19 educational programs have been developed and implemented, of which 13 are additional education and 6 are non-formal education. At least 200 students are trained annually (during the COVID pandemic in 2020-2021 - 2,726 students). There is a well-equipped International Training Centre for the implementation of educational programs.

From 2018 to 2024, 3 scientific and technical programs (STP) were completed at the NSCEDI under the targeted financing program (TFP), 7 Grants from the Ministry of Science and Higher Education of the Republic of Kazakhstan (MSHE RK). The scientific centre cooperates with 7 international organizations, including GIZ (German Society for International Cooperation), CDC (Centres for Disease Control and Prevention in the USA and China), and the World Health Organization.

2.2 Information about previous accreditation

The educational activities of NSCEDI are accredited by the Eurasian Centre for Accreditation and Quality Assurance in Education and Healthcare on July 26, 2019, registration number is IA00016.

2.3 Brief description of the report on institutional self-assessment of the RSE on the REM “National Scientific Centre for Especially Dangerous Infections named after Masgut Aikimbaev” of the Ministry of Health of the Republic of Kazakhstan for compliance with the Standards of institutional accreditation of organizations of additional and non-formal (CPD) education and conclusions

The report on the institutional self-assessment of the RSE on the REM “National Scientific Centre for Especially Dangerous Infections named after Masgut Aikimbaev” of the Ministry of Health of the Republic of Kazakhstan is presented on 66 pages of main text, 12-page appendices, copies or electronic versions of 16 documents located at <https://drive.google.com/file/d/1nKP8sZfJdAZAiXfwbB2DBsjjZ5mAWtIO/view>.

The report is characterized by the completeness of the answers to all 9 main accreditation standards and criteria, structured taking into account the recommendations of the Guidelines for self-assessment of medical educational organizations in ECAQA, provided by the RSE on the REM "National Scientific Centre for Especially Dangerous Infections named after Masgut Aikimbaev" of the Ministry of Health of the Republic of Kazakhstan (hereinafter referred to as NSCEDI) accreditation centre - ECAQA, as well as internal unity of information. Attached to the report is a covering letter signed by Director Zhumadilova Zauresh Bapanova, which confirms the accuracy of the quantitative information and information included in the self-assessment report.

The report contains a list of 17 members of the internal self-assessment committee, indicating the responsibilities of each employee, information about the representative of the organization responsible for conducting the institutional self-assessment.

Institutional self-assessment of the RSE on the REM “National Scientific Centre for Especially Dangerous Infections named after M. Aikimbaev” of the Ministry of Health of the Republic of Kazakhstan “On the creation of a working group to conduct institutional self-assessment and write a report” was carried out on the basis of order No. 131 dated April 26, 2024.

All standards contain the actual practice of NSCEDI in training students in 13 additional and 6 non-formal education programs. The description in the self-assessment report is quite complete and updated in terms of the number of students, teachers, administration, information about selection and admission, learning outcomes, results of assessment of knowledge and skills.

Information is presented on the own material and technical base of the centre for training NSCEDI, which includes lecture halls, a specialized bacteriological hall, a library, work rooms, bacteriological boxes for the preparation of educational materials for practical classes, teaching rooms, auxiliary premises, a laboratory room, an isolation ward, infectious a room for working with infected animals, separate rooms in the central laboratory for conducting practical and theoretical classes. The total area is 6324.5 m², of which the useful area is 5531.79 m².

The report is presented to ECAQA in a completed form, with data adjusted according to the above recommendations, written in literate language, the wording for each standard is clear and understandable and described in accordance with the criteria of standards, tables and annexes, which contain links in the text and are continuously numbered.

The quality of the institutional self-assessment report served as the basis for moving to the next stage of the accreditation procedure - external evaluation. The experts plan to validate the report data, compare the information from the report with the information that will be received during the visit to the educational organization, i.e. verification of quantitative and qualitative indicators.

3. Description of external expert evaluation

External expert work within the framework of the institutional evaluation of the NSCEDI was organized in accordance with the Guidelines for Conducting External Evaluation of Educational Institutions and Educational Programs in ECAQA and in accordance with the visit program. Dates of visit to the organization: June 11-13, 2024.

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

The expert commission requested information about the previous accreditation of the educational program and recommendations made in 2019. The experts analysed their implementation and came to the conclusion that the recommendations for improving the activities of this organization have been implemented.

The sequence of the visit of the external expert commission (EEC) is presented in detail in the Visit Program to the NSCEDI.

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

- interviews with management and administrative employees – 7 people;
- meeting with listeners – 10 people;
- studying the website <https://nscedi.kz/>
- interviewing 11 employees, including 4 teachers;
- survey of teachers and students - 13 and 35, respectively;
- observation of student training: attending 3 practical classes on the following topics:
 1. “Inoculation technique.” Teacher: Abieva A.A, nursing staff 24 people, location: training centre, laboratory. The student population is laboratory assistants.
 2. «“Preparation of smears and Gram staining.” Teacher: Baizhumanova Zh. A., location: training centre, laboratory, and contingent of students - laboratory assistants),
 3. «“Qualitative method of antibiotic sensitivity, disc method”, Teacher: Abieva A.Venue: training centre, laboratory, and contingent of students - laboratory assistants);
- review of resources in the context of meeting accreditation standards: 5 practical training bases were visited, including a bacteriological hall, a faunal museum, a training centre, a training room for biological safety level 2, a library where training is conducted in 19 educational programs with the participation of 25 full-time teachers/part-time teachers;
- study of educational and methodological documents in the amount of 32 units both before the visit to the organization and during the visit to the departments (the list of documents studied is in Annex 2).

The NSCEDI team ensured the presence of all persons indicated in the visit program and according to the lists of interview sites (Table 1).

Table 1. Information on the number and category of participants in meetings, interviews, talks with members of the EEC

| № | Position | Quantity |
|----------|--|-----------------|
| 1 | Director | 1 |
| 2 | Head of Strategic Development and International Development Department | 1 |
| 3 | Head of the international training centre | 1 |
| 4 | Head of the Department for Implementation of Innovative Technologies | 1 |
| 5 | Head of reference laboratory | 1 |
| 6 | Head of Human Resources Department | 1 |
| 7 | Head of Quality Management System Department | 1 |
| 8 | Employees participating in training | 4 |
| 8 | Students of CPD programs | 10 |
| 9 | Program alumni | 6 |
| 6 | International partners | 3 |
| 7 | Country partners | 2 |

On the last day of the visit to the organization, a meeting of EEC members was held based on the results of the external evaluation. Members of the EEC have begun drafting the final report of the EEC. Generalizations of the results of the external evaluation are made. The experts individually

completed the “Institutional Quality Profile and the criteria for external evaluation of the NSCEDI for compliance with the ECAQA Accreditation Standards.” No comments were made by the EEC members. Recommendations for improvement for the NSCEDI were discussed and the chairman Akhmetova A.K. held a final open vote on recommendations for the ECAQA Accreditation Council for the accreditation period.

Comfortable conditions were created for the work of the EEC, and access to all necessary information and material resources was organized. The commission notes the high level of corporate culture of the team, prompt provision of information to members of the EEC, provision of access to all training bases with the provision of one-time equipment, clear organization of the appearance of all interviewed participants, timely connection of online participants.

While conducting a survey of students, 76.9% rated the work of the External Expert Commission on Accreditation as positive, 30.1% as satisfactory. The majority of respondents (84.6%) believe that it is necessary to accredit organizations implementing CPD programs.

According to 84.6% of teachers, the survey conducted by ECAQA is useful for developing recommendations for improving key areas of activity of the accredited organization.

At the end of the visit, the chairman of the EEC announced recommendations based on the results of the external evaluation as part of institutional accreditation to the management and employees of the educational organization.

3. Analysis of compliance with accreditation standards based on the results of an external evaluation of the RSE on the REM “National Scientific Centre for Especially Dangerous Infections named after Masgut Aikimbaev” of the Ministry of Health of the Republic of Kazakhstan

Standard 1: MISSION AND OUTCOMES

1.1 Mission

The mission of the NSCEDI has been defined, including: Ensuring the biological safety of the country, developing and implementing the scientific basis for monitoring, prevention, and evaluation the risk of infection of people with especially dangerous infections (hereinafter referred to as EDI) in the territory of Kazakhstan to prevent and reduce diseases of people and animals.

NSCEDI has defined a vision as: improving the system of epidemiological monitoring of EDI, aimed at protecting public health, by reducing the risks of epidemic spread of EDI.

The strategic goal is aimed at improving the system of epidemiological monitoring of EDI, aimed at protecting public health, by reducing the risks of epidemic spread of EDI.

All information is brought to the attention of interested parties, including employees, listeners, and international partners: WHO, CDC, the GIZ, through publications on the official website of the NSCEDI named after M. Aikimbaev: <https://nscedi.kz/missiyasy-2/> and information through joint meetings and informal meetings.

The mission was developed and approved for 2021-2025 by decision of the Supervisory Board of the NSCEDI No. 4 dated May 20, 2022. The mission defines 3 strategic directions:

1. Ensuring biological safety and reducing the level of impact of hazardous biological factors on the health of the population of the Republic of Kazakhstan.

2. Raising the level and intensifying fundamental and applied research work to improve monitoring of natural foci of especially dangerous infections and introducing research results into practice.

3. Modernization of production for the production of diagnostic and prophylactic drugs. The key topic is the continuous education of specialists, which contributes to their professional growth and development throughout their lives.

While developing the mission, the following public health issues were taken into account:

- implementation of effective epidemiological monitoring of particularly dangerous infections

in the Republic of Kazakhstan,

- the needs of the practical healthcare system, which should include the existence on the territory of the republic itself of active natural foci of especially dangerous infections: plague, tularemia, hemorrhagic fevers (CCHF, HFRS, etc.), as well as hospital-unsafe areas for anthrax.

NSCEDI shows its social responsibility for the timely and effective diagnosis of dangerous contagious, including imported infections, through the timely and effective implementation of anti-epidemic measures, which allows preserving the life and health of not only the individual patient and the people, animals and environment around him. The Scientific Centre pays great attention to the issues of training specialists in the field of epidemiology and monitoring of EDI, biosafety and biosecurity by carrying out measures for the effective training of specialists working with hazardous pathogens, ensuring the medical and social effectiveness and economic efficiency of the organization of the epidemiological service. Information for potential consumers of educational programs is posted on the organization's website and on social networks (<https://www.instagram.com/nscedi.kz>, <https://m.facebook.com/CRLALMATY>) and is reflected in the strategic plan of the RSE on the REM "National Scientific Centre for Especially Dangerous Infections named after Masgut Aikimbaev" of the Ministry of Health of the Republic of Kazakhstan for 2021-2025.

The mission contains the wording "Ensuring the biological safety of the country, developing and implementing the scientific basis for monitoring, prevention, assessing the risk of infection of people with especially dangerous infections (hereinafter referred to as EDI) on the territory of Kazakhstan to prevent and reduce diseases of people and animals," which implies a desire to conduct research and aspects of global health.

The experts were familiarized with the strategic development plan for the period 2021-2025, which includes 3 areas and was approved at the meeting of the Academic Council No. 4 on May 20, 2022

The strategic plan takes into account important goals and objectives aimed at ensuring the epidemiological well-being and biological safety of the population.

Strategic direction 1. Ensuring biological safety and reducing the level of impact of hazardous biological factors on the health of the population of the Republic of Kazakhstan.

Goal 1.1. Strengthening the prevention of infectious diseases, including especially dangerous infections

Strategic direction 2. Raising the level and intensifying fundamental and applied research work to improve monitoring of natural foci of especially dangerous infections and introducing research results into practice.

Goal 2.1 Introduction of innovative technologies and approaches to monitoring infectious diseases, including EDI

Strategic direction 3. Modernization of production of diagnostic and prophylactic drugs

Goal 3.1 Introduction of innovative research developments into public health practice

The strategic plan was signed and approved by the decision of the Supervisory Board of the RSE on the REM "NSCEDI named after M. Aikimbaev of the Ministry of Health of the Republic of Kazakhstan No. 4 dated May 20, 2022, and on its basis an annual (operational) plan is drawn up annually. The experts got acquainted with the operational plans for 3 years.

NSCEDI systematically collects and analyses information about the main areas of its activities and draws up the results in the form of a report. The general director is responsible for this.

Thus, the SWOT analysis for last year showed:

- Lack of digital monitoring of infectious disease outbreaks at the branch level and poor communication with the National Centre for Infectious Disease Outbreaks.

- Insufficient material and technical base in branches and their divisions, with buildings, structures, vehicles, equipment and inventory that are morally and physically outdated.

- Physical security of branches and divisions does not meet the requirements of Government Decree No. 1151.

- Lack of funding for retraining personnel to manage outbreaks of infectious diseases leads to decreased professional preparedness when working with pathogens, the risk of laboratory contamination and potential serious epidemiological complications.

In order to make adjustments, the NSCEDI planned to provide funding to ensure anti-epidemic preparedness, the formation of an SPES to localize and eliminate outbreaks of infectious diseases in disaster zones and during terrorist attacks

The mission and strategic goal takes into account national priorities in continuous professional development.

The strategic development plan is accompanied by financial support in the form of grants, scientific and technical projects, funding from the state budget, and the provision of paid educational services.

The experts are familiar with the financial performance indicators of the NSCEDI. Thus, the financing indicators for key areas of activity of the NSCEDI in 2024 increased by 20% compared to the previous year.

The increase in funding is associated with an increase in the number of students in additional professional education programs and an increase in sales of manufactured products (immunobiological drugs)

The mission and vision are available to all participants in the educational process and external stakeholders by publication on (<https://www.instagram.com/nscedi.kz>, social networks <https://m.facebook.com/CRLALMATY>), information stands.

During the visit to the units, experts noted the strengths of the NSCEDI, including:

- Availability of a modern laboratory of the Central Reference Laboratory (LBS2, LBS3, LBSA3);
- Certification according to international standards ISO 9001:2015, ISO 35001:2019, ISO 27001;
- Availability of a training centre with a bacteriological hall that meets all safety requirements and is equipped with equipment. Classes are taught by highly qualified teachers, supported by support staff to optimize the learning process;
- Highly qualified Academic staff;
- Extensive partnerships with leading international organizations and research institutes.

The NSCEDI has units that are directly related to the organization of training for students, which can be noted as the best practice in education, namely, the presence of an equipped training center, a faunal museum, a library, and access to the CRL.

This conclusion was made because members of the commission visited these facilities.

The results of studying the documentation demonstrate that the mission of the organization is being fulfilled, and the educational process is structured in accordance with the current Laws and Statutory Instruments (LSI) in additional education and healthcare. With regard to additional and non-formal education, the following is determined: training is conducted in 19 programs (13 advanced training, 6 certification courses), for the implementation of these programs there is a training centre with a bacteriological hall, training rooms, a lecture hall and an interactive whiteboard.

At the same time, during meetings with teachers and students, experts identified a number of problems: outdated microscopes (preferably multi-track, so that a teacher and several students can look at the same time), poor access to the Internet and, accordingly, to databases and web resources, lack of a computer lab in the library and hostel, subjective assessment of practical skills.

1.2 Professionalism and professional autonomy

Proof that the educational programs and activities of the NSCEDI are aimed at achieving the goal of increasing the professional and personal development of students is the presence in the NSCEDI of a specialized unit - a personnel training centre. This centre provides additional training and advanced training for specialists working with pathogens of particularly dangerous and zoonotic infections. This is an International Training Centre, whose students are both Kazakh specialists from

various ministries (health, agriculture, education) and foreign specialists (Afghanistan, Mongolia, Kyrgyzstan, Tajikistan, Uzbekistan, Turkmenistan, Armenia, Georgia, Azerbaijan). In 2020, NSCEDI staff organized and conducted 29 trainings, over 950 seminars and 19,200 briefings for medical personnel, primarily for infectious disease specialists, virologists and microbiologists, as well as for primary care workers. Thanks to this training, more than 5 thousand doctors and 15 thousand mid-level medical workers were covered. In addition, in the same year, NSCEDI together with 9 regional branches organized distance learning for medical and veterinary institutions in various regions on the use of personal protective equipment to prevent infection with COVID-19. As a result of online consultations and trainings, 160 connections were registered with a total number of participants of over 2,900 people, including 1,696 primary health care employees and 919 employees of regional medical institutions.

Potential students can choose advanced training programs by tailoring the educational programs provided according to their needs. In addition to existing courses, the training program is adapted in accordance with the needs of consumers (employers and individuals), including the expansion and clarification of certain specializations and topics in the terms of reference of the contract.

To verify Standard 1, a meeting was held with the head of the organization, General Director Zhumadilova Zauresh Bapanovna. During the conversation, the experts asked the following questions:

- Strategic plan for the development of NSCEDI and prospects for its development;
- scientific grants and projects;
- sources of financing;
- problems in the educational process;
- quality management system;
- International cooperation.

During the answers, the director of the organization confirmed that the NSCEDI has a strategic development plan for 2021-2025 in 3 strategic directions and 3 priority areas, sustainable financial income from the state budget, from scientific grants and projects, from the educational process. The organization has target indicators and certain resources. Additional sources of income are being considered, the reorganization of some departments is being considered, and major renovations are planned in old buildings.

While conducting a survey of 35 students (on the resource <https://webanketa.com/>), out of 22 questions, a number were devoted to the quality of the educational process and the variety of training programs. It was found that 97.1% of students would recommend studying at this educational organization to their acquaintances, friends, and relatives. And 100% of respondents believe that managers and teachers are aware of the problems of students related to learning. To the question “Do you think this educational organization allows you to improve the necessary knowledge and skills in your specialty?”, 97.1% of students answered positively, 2.9% could not yet answer this question.

During the face-to-face conversation with the students, the following information was received that they were provided with literature, sufficient handouts in the bacteriological hall during practical classes, safety measures were strictly followed when working with pathological material, the teachers were highly qualified and friendly.

The 13 teachers surveyed (21 survey questions) also answered that 76.9% were satisfied with the organization of work and workplace in this educational organization, and 23.1% partially agreed with this statement. Experts determined that the organization has a healthy microclimate, since the manager is quite accessible to both students and employees, and responds promptly to requests and complaints. In the questionnaire, 92.3% of teachers are satisfied with the microclimate of the organization, and 7.7% are partially satisfied. According to 84.6%, in an educational organization, a teacher has the opportunity to realize himself as a professional in his specialty. For your information, a total of 13 people responded (25 in total), with teaching experience of up to 5 years – 46.2%, up to 10 years – 23.1%, over 10 years – 30.7%.

1.3 Final learning outcomes

For each educational program (cycle, course), the final *learning outcomes* are determined. They are based on the current LSI, recommendations of the Ministry of Health of the Republic of Kazakhstan, the Ministry of Education and Science of the Republic of Kazakhstan, the Ministry of Agriculture of the Republic of Kazakhstan, the Security Council of the Republic of Kazakhstan, take into account the opinion of leading scientific experts of domestic and foreign, as well as practical specialists working with EDI, based on the results of systematic meetings at specialized conferences, seminars and roundtables. Such events allow us to identify existing problems and new directions and timely improve work plans and training programs. Expanding the circle of stakeholders makes it possible to more accurately assess the activities of the NSCEDI, expanding and improving programs for continuous professional development of specialists and are spelled out in the regulations for writing an educational program.

The development of educational programs in accordance with the current LSI, the admission of students taking into account the basic education received ensures continuity between the final learning outcomes of basic and postgraduate medical education programs and additional education (Order of the Minister of Health of the Republic of Kazakhstan dated August 1, 2023 No. 142. Registered with the Ministry of Justice of the Republic Kazakhstan August 3, 2023 No. 33225 On amendments to the order of the Minister of Health of the Republic of Kazakhstan dated November 30, 2020 No RK MMOH-218/2020 “On approval of the list of specialties and specializations subject to certification of specialists in the field of healthcare”).

Experts studied documents for 19 educational programs and found that for most programs the Certificate of Examination was given by the same reviewer, regardless of the name of the educational program.

All structural divisions of the NSCEDI, potential consumers of educational services take part in the development of the final results of training for students through posting on the NSCEDI website and social networks. At the stage of program development, authorized bodies, other organizations, and individuals are informed about the direction and content of the program by posting it on the NSCEDI website and social networks. The recommendations received are taken into account when updating the program, and thus the NSCEDI ensures the participation of stakeholders.

The experts familiarized themselves with the minutes of the meeting of the Academic Council in 2024, which reflected the participation of employers in the development of educational programs. At the same time, the experts did not see the changes made to the EP after discussing them with employers and other interested parties.

While developing the final learning outcomes, NSCEDI took into account their connection with the requirements of the CDP. Thus, experts studied the Strategic Plan of the RSE on the REM “National Scientific Center for Especially Dangerous Infections named after Masgut Aikimbaev” of the Ministry of Health of the Republic of Kazakhstan for 2021-2025 and received evidence that the organization is working in 3 strategic and 3 priority areas, and has developed target indicators.

Experts noted that global health issues were reflected in the continuing education curriculum and topics such as “International Biosafety Standards: Laboratory Biosafety Levels, Microbial Risk Groups, Laboratory and Personnel Requirements.” The programs are adapted to new international standards.

Control over the quality of educational programs is carried out by Isaeva S.B., Ph.D., head of the international training centre and Alymkulova Z.T. - Researcher at ITC. Monitoring the quality of educational activities at all levels of education, studying needs and collecting wishes after training, students are surveyed (feedback) based on the results of the courses, all reviews, wishes and criticisms are taken into account. The results are reflected in the “Feedback Analysis” document.

The experts are familiar with the documents on the educational process.

The surveyed teachers responded that 46.2% were completely satisfied with the level of previous training of students, and 53.8% were partially satisfied.

Experts have established a clear continuity between the final results of previous training and the continuous professional development programs offered in the accredited educational organization. The organization has developed 13 continuing education programs, including for specialists with higher medical education in the specialty “Epidemiology”. Information about the number and variety of programs is carried out through (<https://www.instagram.com/nscedi.kz>, <https://m.facebook.com/CRLALMATY>), 46.2% of teacher respondents believe that students of this educational organization have a high level of knowledge and practical skills after completing the training program, and 53.8% partially agree with this.

1.4 Participation in the formulation of mission and final results

Structural divisions of the NSCEDI and potential consumers of educational services took part in the development of the mission of the NCPH, which is confirmed in Minutes No. 4 of the 20.05.22 meeting of the Academic Council. This mission is the main version for the last 5 years and significant changes have affected the development and implementation of the scientific basis for monitoring OI, taking into account the situation with Covid 19. Representatives of the authorized bodies have been informed about the mission. Thus, information about the mission was sent to the Department of Science and Human Resources of the Ministry of Health of the Republic of Kazakhstan in 2022.

During communication with teachers and international partners, it was not possible to obtain a clear answer to the question of whether they participate in the formulation of the mission and goals of the organization. However, the following responses were received: “We are familiar with the mission and help to implement it” and “What personal contribution, for example from students, to improving the content and methods of teaching?” Students noted in their feedback questionnaires that there is an opportunity to improve the learning process. Employers have also made changes to the subject matter of training cycles. For example, in the 2022-2023 academic year, additional education programs were developed on the topic “Biosafety for especially dangerous infections of pathogenicity group I-II” and informal education on the topic “Biosafety, epidemiology and microbiology of infectious diseases of pathogenicity group II.” This was done based on suggestions from employers, taking into account the shortage of specialized specialists identified during the Covid-19 pandemic. During the pandemic, 2,726 students were trained in the 2020-2021 academic year, although the usual number of students is about 200.

From a survey of 13 teachers (21 questions in the questionnaire) it follows that 76.9% of them are satisfied with the organization of work and workplace in the NCPH, and 23.1% partially agree with this statement. Experts note a healthy microclimate in the organization, since the manager is available to both employees and students and promptly responds to requests and requests. According to the questionnaires, 76.9% of teachers are satisfied with the microclimate of the organization, and 23.1% are partially satisfied. In addition, 84.6% believe that at the university a teacher has the opportunity to realize himself as a professional in his specialty.

Conclusions of the EEC on the criteria. Comply out of 9 standards: fully - 6, partially - 3, do not comply - 0.

Recommendations for improvement:

- 1) To inform students about the expected final outcomes of training according to the Kirkpatrick model or exclude it as a form of training (1.3.2)
- 2) To involve key stakeholders in the development of the mission and learning outcomes (1.4.1. - 1.4.2)

Standard 2: EDUCATIONAL PROGRAMMES

2.1 Model

At NSCEDI, training is organized taking into account the needs of practical healthcare. In total, there are 14 CDP programs and 6 non-formal education programs. The length of additional education programs ranges from 2 credits (60 academic hours) to 8 credits (240 academic hours) for continuing education programs and from 16 credits (480 academic hours) to 30 credits (900 academic hours) for certificate courses. One credit is equal to 30 academic hours.

Specializations for doctors, non-medical specialists and laboratory technicians include:

1. CDP for doctors on the topic “Especially dangerous viral infections: epidemiology, laboratory diagnostics and biosafety; PCR in the diagnosis of especially dangerous infectious diseases” (108 hours).
2. Program “Biosafety for especially dangerous infections of I-II pathogenicity groups” (240 academic hours / 8 credits).
3. Program “Biosafety when working with pathogenic biological agents of II-IV pathogenicity groups” (240 hours / 8 credits).
4. Program “Biosafety and disinfection in case of especially dangerous infections” (120 hours / 4 credits).
5. Program “Biosafety and Infection Control” (120 hours / 4 credits).
6. Program “GIS Technologies” (120 hours / 4 credits).
7. Program “Basics of biosafety in the laboratory” (60 hours / 2 credits).
8. Program “Fundamentals of biosafety and biological protection in laboratories” (60 hours / 2 credits).
9. Program “Fundamentals of biological safety and biological protection in laboratories of the Republic of Kazakhstan” (60 hours / 2 credits).
10. Program “Advanced course of biological safety and biological protection in laboratories of the Republic of Kazakhstan” (120 hours / 4 credits).
11. Program “Fundamentals of biological safety and biological protection (for laboratory assistants)” (60 hours / 2 credits).
12. Program “Laboratory diagnosis of cholera” (120 hours / 4 credits).
13. Program “Laboratory diagnosis of plague” (120 hours / 4 credits).
14. Program “Features of deratization, disinfestation and disinfection for especially dangerous infections” (120 hours / 4 credits)

For certification courses for specialists, in accordance with the list, the following courses are conducted for doctors, veterinarians, non-medical specialists and laboratory technicians:

1. Biosafety when working with microorganisms of I-II pathogenicity groups (plague, cholera) (900 hours / 30 credits).
2. Biosafety when working with particularly dangerous microorganisms of II pathogenicity group (cholera) (630 hours / 21 credits).
3. Biosafety when working with microorganisms of II pathogenicity group (630 hours / 21 credits).
4. Disinfection (480 hours / 16 credits).
5. Biosafety when working with microorganisms of I-II pathogenicity groups (480 hours / 16 credits).
6. Laboratory work in a bacteriological laboratory (480 hours / 16 credits)

Since 2020, 4 programs have been developed (2 topics of non-formal education and 2 topics of advanced training). They include the following topics::

- “Biosafety, epidemiology and microbiology of especially dangerous infections of II pathogenicity group” (for laboratory specialists handling pathogenic biological agents of II pathogenicity group, causing especially dangerous infectious diseases) – 630 hours / 21 credits.
- “Biosafety, epidemiology and microbiology of infectious diseases of II pathogenicity group” (for laboratory specialists handling pathogenic biological agents of II pathogenicity group) – 630 hours / 21 credits.

- “Biosafety for especially dangerous infections of pathogenicity groups I-II” – 240 hours / 8 credits.
- “Biosafety when working with pathogenic biological agents of pathogenicity groups II-IV” – 240 hours / 8 credits.

This is due to changes in the epidemiological situation and the needs of practical healthcare.

NSCEDI offers different forms of training: full-time, distance and hybrid, to enable students to study without interruption from their main place of work. To do this, the student indicates in the application the preferred form of training.

The CDP program has a defined goal that reflects the integration of practical and theoretical components. The ratio in hours is as follows: lectures - 208 hours, seminars - 10 hours, practical classes - 520 hours, as well as other types of training provided for in the educational program - 18 hours. Self-study takes up a quarter of the total hours. The student’s forms of independent work include tests, solving situational problems, applying the acquired knowledge to analyse situations and make decisions, as well as forming one’s own position and opinion when working.

The experts reviewed the following documents:

- “Rules of official ethics”, approved by the General Director on February 24, 2021 (Order No 34).
- List of training programs.
- Approved schedule of ongoing cycles.
- Certificate course program and passport (6 in total).
- Program and passport of the advanced training program (13 in total).
- Certificates of examination of educational programs of certification courses.
- Reviews of educational programs of additional education.

Aspects of medical ethics and bioethics are included in training programs at all levels and all course students are introduced to the rules in the first lesson.

The experts also confirmed that the training is carried out in accordance with the current state policy, the integration of international programs into the training system, as well as the active involvement of students in scientific research on current health issues, both at the level of the Ministry of Health and the Ministry of Education and Science of the Republic of Kazakhstan, and in international projects (for example, DTRA, CDC, ISTC). After the adoption of the Law of the Republic of Kazakhstan dated May 21, 2022 No. 122-VII ZRK “On biological safety of the Republic of Kazakhstan”, training in biosafety for workers handling microorganisms of EDI and/or materials suspected of being contaminated with them has become one of the important policies of the state. The structure of the educational program meets the requirements of the methodological recommendation “Recommendations for the organization and implementation of educational programs of additional education in the field of healthcare.”

Aspects of medical ethics/bioethics are included in training programs at all levels of training and all students of the courses are familiar with the rules in the first lesson.

Experts found confirmation that the training is carried out in accordance with the current policy of the state, the integration of international programs into the personnel training system, the active involvement of students in conducting scientific research on current health issues, both through the Ministry of Health and the Ministry of Education and Science of the Republic of Kazakhstan, and in international projects (DTRA, CDC, ISTC). After the adoption of the Law of the Republic of Kazakhstan dated May 21, 2022 No. 122-VII ZRK “On biological safety of the Republic of Kazakhstan”, training of personnel in biosafety working with microorganisms of EDI and/or materials suspected of being contaminated with them is one of the important policies of the state. The structure of the educational program complies with the requirements of the methodological recommendation “Recommendations for the organization and implementation of educational programs of additional

education in the field of healthcare” (methodological recommendations approved by the Ministry of Health of the Republic of Kazakhstan, Almaty 2021).

NSCEDI works closely with professional associations: Interaction with PSC and NCE is ongoing in terms of the formation of applications for the academic year of PP and AT. The letter indicates information that NSCEDI plans to conduct courses indicating thematic cycles and whether there is a need for specialists to take these courses interaction with DSEC of the Ministry of Health of the Republic of Kazakhstan by courier mail. Interaction is carried out with the institutions of the Ministry of Agriculture and the MSHE of the Republic of Kazakhstan in terms of training veterinary and biological specialists for the institutions of the said ministries. This cooperation makes it possible to receive both feedback from representatives of practical healthcare and science, and to invite members of the association to conduct professional development cycles.

Continuing professional development activities are officially recognized as the NSCEDI has institutional accreditation dated July 26, 2019, which expires in 2024.

The structure of the educational program is presented: in the methodological recommendation “Recommendations for the organization and implementation of educational programs of additional education in the field of healthcare” (methodological recommendations approved by the Ministry of Health of the Republic of Kazakhstan, Almaty 2021).

- By attending practical classes on the topic: “Inoculation Techniques”, volume 6 hours, experts received convincing evidence that the training is carried out according to plan, before the start of the lesson, students answer tests, receive feedback from the teacher, and have the opportunity to improve their skills in carrying out sowing techniques on workplace in the bacteriological hall of the training centre. At a practical lesson on the topic: “Preparation of smears and staining using the Gram method,” the experts also made sure that students have the opportunity to individually stain smears and have all the necessary materials for this.
- The organization ensures compliance with ethical aspects in the implementation of educational programs, since experts have studied the “Rule of Official Ethics” approved by the General Director on February 24, 2021. (Order No. 34), and during the interview, listeners responded that they were informed about the contents of this document. During the entire period of educational activity there were no precedents for violation of ethics.

The analysis of educational activities showed that the scientific basis and all the achievements of science in the advising disciplines were taken into account, additions were made to the EP, and teachers used them in the classroom.

The procedure for informing students about their rights and responsibilities is reflected in educational journals, but the organization has not developed a “Regulation on the organization of the educational process in additional education”, and this procedure is not regulated. This was clarified during the work of the commission.

Additional education (continuous professional development) is the main component of the process of continuous improvement of the knowledge and skills of mid-level and post-secondary health care professionals. This approach is consistent with international principles of professional development and the European Higher Education Area (ESG 1.2).

The Science Centre does not have an anti-plagiarism system.

2.2 Scientific method

Educational programs are developed based on the principles of scientific methodology, evidence-based practice and experience. While forming educational programs, the best domestic and international experience in the prevention and monitoring of EDI, biological safety and biological protection is taken into account. Research results are included in lecture material, discussed at seminars, and modern laboratory diagnostic technologies are tested in practical classes. The educational program “Biosafety for especially dangerous infections of I-II pathogenicity groups” (240 hours) includes the scientific foundations and methodology of medical research for epidemiological

and epizootological monitoring, diagnosis of especially dangerous infections. The EP “Fundamentals of biosafety and biosecurity in laboratories of the Republic of Kazakhstan” (60 hours) includes data on the development of research on the development of domestic diagnostic and preventive drugs for particularly dangerous infections.

Taking into account the specifics of research, ensuring biological safety and biological protection, trained specialists who have undergone mandatory training are allowed to carry out laboratory research within the framework of scientific programs:

- 1) certification cycle “Biosafety, epidemiology and microbiology of especially dangerous infections of I-II pathogenicity groups”,
- 2) advanced training “Fundamentals of biosafety in the laboratory (LBS2)”
- 3) advanced training “Advanced course on biosafety and biosecurity (LBS3)”.

While talking with students, experts found out that they use scientific data in their training and know the basics of evidence-based medicine.

Students have access to updated scientific and clinical data, since the educational organization has organized access to scientific results, since research is currently being conducted on the following scientific projects:

1. Grant of the Ministry of Education and Science “Study of molecular genetic characteristics and variability of plague and tularaemia strains in epidemiological surveillance of zoonosis” (2023–2025)

2. Grants from the Ministry of Education and Science “Study of molecular genetic characteristics and variability of plague and tularaemia strains in epidemiological surveillance of zoonosis” (2023-2025)

Students of certification cycles and advanced training courses at the training centre are involved in conducting certain areas of research within their competence (analysis of modern literature on epidemiological and epizootological monitoring of infections, principles of study design, international and domestic approaches to conducting diagnostic studies, etc.).

While surveying students, it was found that the educational organization has access to students’ participation in research work and 8.6% of people are completely satisfied with this, 5.7% are partially satisfied, 8.6% are dissatisfied. “I have no desire to do research” answered 71.4%.

2.3 Content of additional and non-formal education programs and their relationship with the provision of medical care

There are documents containing requirements for the structure and content of educational programs, including on the basis of Order of the Ministry of Health of the Republic of Kazakhstan dated November 9, 2022 No RK MOH-132 “On approval of a standard program of professional training, retraining and advanced training of personnel in the field of biological safety.” Responsibility for the selection and implementation of innovations in the educational process lies with Isaeva S.B. - Ph.D., Head of the international training centre.

The content of the work programs reflects the needs of the healthcare system, including the basis for development is the order of the Ministry of Health of the Republic of Kazakhstan dated November 30, 2020 No RK MOH-218/2020 “On approval of the list of specialties and specializations subject to certification of specialists in the field of healthcare”, as well as specifics of research work and scientific achievements of teachers and other regulatory links: Order of the Minister of Health of the Republic of Kazakhstan dated December 21, 2020 No RK MOH-303/2020 “On approval of the rules for additional and non-formal education of specialists in the field of health care, qualification requirements for organizations implementing educational programs additional and non-formal education in the field of healthcare, as well as rules for recognizing learning results obtained by healthcare professionals through additional and non-formal education.”

For the successful implementation of educational programs, the organization has resources for evaluating the practical skills of students:

- training of specialists in the anti-epidemic regime for working with material contaminated or suspected of being contaminated with pathogens of pathogenicity I-IV groups;
- training in methods and techniques for safe work in a bacteriological laboratory with material contaminated or suspected of being contaminated with pathogens of EDI of I-IV pathogenicity groups.

During the retraining cycle, the main emphasis in personnel training is on experimental training of a specialist who will be able to apply the acquired practical skills in the field and in stationary laboratories. The disadvantages of these cycles are that they are based only on national biosafety rules, and the laboratories in which the training is conducted are not equipped in accordance with international norms and standards of biosafety engineering systems. Therefore, it will not be easy for a specialist who has completed the course to work in modern laboratories. In addition, these cycles focus only on bacteriological agents. To achieve effective work with especially dangerous infections, in addition to classical methods, it is necessary to introduce special training on modern equipment in compliance with the requirements of biological safety and biosecurity. In order to train in modern biological safety requirements, the bacteriological hall is equipped with biological safety boxes for working with pathogenic biological agents. Also, the theoretical part of the training includes lectures on the following topics: “Modern personal protective equipment”, “International biological safety standards”.

Teachers provide students with methodological and didactic materials, additional literature to prepare for classes, with which 97.1% are completely satisfied, 2.9% are partially satisfied.

Students of advanced training programs are also provided with 100% access to equipment (educational and real) in order to master practical skills in their specialty has its own training centre with a bacteriological hall with 24 seats, training rooms, a lecture hall with an interactive whiteboard. And to the survey question “Is there enough time for practical training (colouring smears, etc.)”, 100% of the students responded with complete agreement. At the same time, 100% of students claim that after completing classes the teacher provides feedback (listens to your opinion, conducts a mini-questionnaire, works on mistakes).

The students surveyed are fully satisfied with the schedule of training sessions (100%).

Management of the educational process, reflected in the self-assessment report (Standard 2) and general approaches to management were confirmed during a visit to the department of additional education and training centre and a conversation with the head Isaeva S.B. and employees. At the same time, verification of Standard 2 showed that the organization has not developed a “Regulation on the organization of the educational process of additional education.”

Experts got acquainted with the work of departments, including Postgraduate Education and the Training Centre. A total of 5 meetings were held and during cross-interviews it was established that the organization of the educational process in the NSCEDI corresponds to what was stated in the self-report.

While attending a practical lesson on the topic “Qualitative method of antibiotic sensitivity (disc method)” (teacher is A. A. Abieva, volume 6 hours), during a conversation with students, the experts were convinced that the organization promotes the development and improvement of the practical competencies of healthcare professionals (laboratory technicians), including on simulation equipment in a separate bacteriological mini-box (a bacteriological table enclosed by glass doors, with individual lighting and a container for transferring infectious material). At the same time, students deepen their theoretical knowledge and develop communication skills.

Thus, during a conversation with the management of the organization, experts received information about the quality of practical classes and their provision with consumables, and teachers confirmed that students are trained directly at the training centre in a bacteriological classroom, equipped with everything necessary.

Of the 35 students surveyed, 100% responded that teachers in the classroom use active and interactive teaching methods quite often. When visiting an educational organization, experts identified problems in introducing new teaching methods, including PBL, CBL, TBL.

Conclusions of the EEC on the criteria. Complies with 13 standards: completely -13.

Standard 3: ASSESSMENT OF STUDENTS' COMPETENCIES AND DOCUMENTATION

3.1 Assessment methods

NSCEDI ensures transparency of the entire educational process and knowledge control system and provides the listener with a wide range of educational services, using modern educational technologies in training and ensuring continuous monitoring of the quality of training.

The NSCEDI has developed a system for assessing the knowledge of students. The assessment system is presented as a separate section in the educational programs being developed and is determined by the current control of knowledge during the course of the cycle, the end-of-course assessment (testing). At the same time, along with traditional assessment methods - testing (input and final control), writing SOPs, presentations on assignments, the level of acquired practical knowledge is assessed (for example, skills of bacteriological work in LBS-2 or LBS-3), solving situational problems, business games according to developed scenarios (for example, evacuation of an unconscious person from a LBS-3 box with disinfection), analysis of laboratory protocols and comparison of them with similar ones in their organization.

The International Training Centre is responsible for the educational process of additional education at NSCEDI. The centre presented pre- and post-tests to determine the level of knowledge of students and the results of acquired skills and abilities. The presented control and measurement tools confirmed the implementation of an appropriate assessment policy, which allows for a comprehensive assessment of the educational achievements of students.

Assessment methods are formed based on a focus on achieving final outcomes, namely the ability to conduct laboratory tests for particularly dangerous and bacterial infections, as well as anti-epidemic measures, while observing the principles of biosafety and biosecurity. Monitoring the effectiveness and efficiency of the organization of cycles is determined by the method of questionnaires, surveys and feedback. To ensure transparency in the evaluation of learning outcomes, the NSCEDI has an assessment results appeal system. The appeal procedure is carried out upon request from listeners in writing. During the period of activity of the NSCEDI there were no applicants for appeal.

So, to verify Standard 3 data, experts asked questions to the Head of the *International Training Centre, Svetlana Berdimuratovna Isaeva*:

1. *How implemented is Kirkpatrick's model?*
2. *What is its effectiveness in the educational process?*

The answer is that levels 1 and 2 of the model are used, levels 3 and 4 are not yet involved in the process.

The organization has test questions, situational tasks, which are drawn up in accordance with the requirements of the LSI of PE and approved at the meeting of the Academic Council (dated April 10, 2024). Reviews on the Control and Measuring Tools were not submitted, reviewed and discussed at the meeting of the Academic Council. Head of the International Training Centre Isaeva S.B. replied that there are no plans for additions and updates to the CIS; no additions or changes have been made by the Academic staff.

The commission verified documents and methods for assessing students.

Questionnaires have been compiled for students for all ongoing certification courses and CDP cycles.

The NSCEDI has developed and implemented a monitoring and documentation system on a systematic basis. During a visit to the organization and during an interview with employees of the Human Resources Development Department, Ospanbekova Gulfairaz Nurakhmetovna, the head of the International Training Centre, Isaeva Svetlana Berdimuratovna, the commission was convinced that there is a documentation system that is transparent and accessible to all teachers and staff, and includes such documents as such as annual operational plans, annual reports, regulations of departments,

agreements with teachers and students, and educational and methodological documentation (Educational programs, logs of attendance and student performance), certificates, evidences and verifications.

At the same time, there are no assessment tools (checklists, statements). The commission noted that there is no need to maintain educational and methodological documents (individual student plan, syllabuses), because they are excluded in accordance with Order No. 303 "On approval of the rules for additional and non-formal education of health care professionals, qualification requirements for organizations implementing educational programs for additional and non-formal education in the field of health care, as well as rules for recognizing learning results obtained by health care professionals through additional and non-formal education" of the Ministry of Health of the Republic of Kazakhstan dated December 21, 2020.

A standard operating procedure (hereinafter referred to as SOP) has been developed, which describes the algorithm for enrolment and expulsion of students, and the list of documents required for enrolment. The Head of the Quality Management System Department, Irina Balapanovna Utepova, fully presented all the developed Operational Procedures, SOPs, and monitoring system.

At NSCEDI, educational and methodological work is directed and coordinated by the International Training Centre, whose tasks are to organize monitoring of the quality of methodological support of the educational process, methodological support and improvement of the educational process, generalization and dissemination of best practices in organizing and improving educational and methodological work.

Independent work of the student with the teacher, designed to implement the advisory and supervisory function (monitoring), is carried out both individually and in a group.

A review of the website showed that its pages contain documents necessary for students - document forms (applications for individuals, contracts, information on cycles, the necessary list of documents - determining their compliance with the course of study they have chosen, information is regularly updated. This information has been received during an interview with listeners, the head of the International Training Centre, Isaeva Svetlana Berdimuratovna.

The results of the student assessment are documented on paper, in the form of answers during pre- and post-testing and on questionnaires.

The organization evaluates the reliability and validity of assessment methods by examining the analysis of the results of the Questionnaire, Annex 12.

While conducting interviews with four teachers (Meka-Mechenko T.V., Begimbaeva Ye.Zh., Alymkulova Z.T., Shakiev N.N.), out of 24 people involved in the educational process) regarding assessment methods, experts Convincing information has been received that pre-, post-tests and questionnaires are used in the educational process. The commission members asked the following questions:

- 1. How do you evaluate levels 3 and 4 according to the Kirkpatrick model? The answer is ambiguous, we don't know about this model.*
- 2. How do you assess the level of practical skills acquired by students during the training process? Do you use checklists? Answer – the Questionnaires contain questions aimed at assessing practical training. We don't have checklists.*

During the interview, students of two certification courses (10 people), as well as students of previous training courses (online meeting), spoke about forms of knowledge assessment, for example, before starting training in cycles, they take a pretest, then a posttest and exams. Listeners (biologists, veterinarians, epidemiologists) confirmed that they were satisfied with the educational process. It was noted that practical classes are held in specialized halls designed for 24 seats and during classes the group is divided into 4 subgroups and the educational process is conducted by teachers and accompanied by three laboratory assistants.

This is the first time students have heard about assessing students' knowledge using the Kirkpatrick model, as a teaching method introduced by the Centre into the educational process. *Listeners also*

shared their opinions about the timeliness of counselling before tests and certification exams, the clarity of the entire assessment procedure and its fairness. Students noted that they receive regular feedback from teachers.

During a visit to the organization, management was asked the question: “Are external examiners involved in order to improve the fairness, quality and transparency of the assessment process?” And the answer was yes. However, experts did not receive any clear confirmation.

The experts examined the resources for organizing the assessment of knowledge and practical skills, namely, they studied the analysis of the students’ results, which noted an increase in knowledge and confirmed the effectiveness of training. Monitoring of quality training for students is carried out based on analysis of test results and questionnaires.

The interviewed representatives of employers also indicated that the training of students corresponded to the modern development of medical practice and science, but the educational organization did not provide systematic feedback to them.

Managing Director of the Office of Strategic Development and International Cooperation Zarkymanova Anara Temirkhanovna was asked the following questions:

1. How many employees work at the Centre and of them, how many people are involved in the educational process? Answer: I don’t have this data. It is answered by the International Training Centre.

2. Training of employees, in particular in Korea and China, is carried out at what expense? The answer is at the expense of the inviting party.

3. Are employees with Master's and PhD degrees trained by your centre? Are you conducting postgraduate education? The answer is that they are prepared by other organizations. The Centre does not provide postgraduate education.

3.2 Documentation of additional and non-formal education

The organization of the educational process at the Centre is carried out in accordance with the regulatory framework for additional education. The organization has implemented a system for documenting the educational process. NSCEDI provides the public service “Issuance of documents on completion of advanced training and certification courses for personnel in the healthcare industry” (hereinafter referred to as the public service) in electronic format through the “electronic government” web portal www.egov.kz, www.elicense.kz (hereinafter referred to as the web -portal) (Annex 18).

The NSCEDI has a document flow monitoring system, which includes the following documents:

- Orders on admission and expulsion of students;
- Journal of registration of issuance of certificates;
- Journal of attendance and progress of students;
- Certificate of advanced training;
- A personal student file is created for each listener;
- PE DE;
- Class schedule;
- Agreements with organizations on the provision of additional educational services on a paid basis with individuals;
- Agreements with organizations on the provision of additional educational services on a paid basis by legal entities through Public Procurement of the Republic of Kazakhstan.
- Certificates and standard certificates of completion of certification courses and CDP programs (Annex 17).

In total, experts reviewed 18 documents on additional and non-formal education.

Transparency of documentation is confirmed by checking documentation and interviewing Centre employees. Record keeping has been introduced, including electronic, which experts have become familiar with. Record keeping is conducted in Russian and the state language.

The Centre creates a Portfolio of additional and non-formal education programs, which are presented on electronic media, including 6 educational programs for certification courses on biosafety issues for various audiences and 13 educational programs for advanced training cycles (for specialists with higher and secondary vocational education). For the purpose of self-assessment of the knowledge and skills of students, a knowledge assessment system has been introduced - a point-rating letter system for evaluating the educational achievements of students.

The actual training of the student is confirmed by the issuance of certificates of the certification course with a mandatory attachment (transcript), certificates of advanced training, certificates indicating the training organization, topic, number of hours (credit units) and registration of certificates in the Document Issuance Journal. The experts familiarized themselves with the Document Issuance Log, which must be brought into compliance with the requirements for maintaining strict reporting documents.

Conclusions of the EEC on the criteria comply with 10 standards: fully – 7, partially – 3, do not comply – 0.

Recommendations for improvement:

- 1) To objectively assess practical skills, develop checklists (3.1.2).
- 2) To improve the educational process by introducing new assessment methods (3.1.3).
- 3) The journal for issuing certificates of advanced training should be brought into compliance with the requirements of the order for issuing documents of strict reporting (3.1.3).
- 4) It is necessary to develop “Regulations on the organization of the educational process of additional education” (3.1.3).
- 5) To bring the system of documenting the educational process in accordance with regulations in additional education (3.2.1).

Standard 4: HEALTH PROFESSIONALS (INDIVIDUALIZED PROFESSIONAL DEVELOPMENT)

4.1 Motivation

NSCEDI provides high-quality training in various specialties, well-designed and in-demand programs of additional professional education, which reflect all aspects of specialization, providing only the necessary knowledge and skills that they use in their practical activities. The formation of a contingent is carried out by accepting individual applications and applications from medical organizations, agricultural organizations and other interested services, in the case of visiting the Customer’s base when forming a group of at least 15–20 people.

EEC experts received evidence that the Centre carries out educational activities in accordance with established state requirements, LSI in the field of continuous professional education (CPE), taking into account a flexible and mobile system for training specialists. According to the regulations of additional education, the Centre has a policy for recruiting and accepting students. The head of the International Training Centre (ITC), Isaeva S.B., spoke about the policy for admitting students. Approaches to the admission of students are based on the LSI of CPE, namely, on the basis of order No. 303 “On approval of the rules for additional and non-formal education of specialists in the field of health care, qualification requirements for organizations implementing educational programs for additional and non-formal education in the field of health care, as well as rules for recognition learning outcomes obtained by healthcare professionals through additional and non-formal education” dated December 21, 2020; Order No. 218 “On approval of the list of specialties and specializations subject to certification of specialists in the field of healthcare” of the Ministry of Health of the Republic of Kazakhstan dated November 30, 2020; Order No. 132 “On approval of a standard program for professional training, retraining and advanced training of personnel in the field of biological safety” dated November 9, 2022, Ministry of Health of the Republic of Kazakhstan.

Admission is carried out on the principle of equal access to additional education (Tables 3,4).

For the period 2020-2024 3,883 students were trained in additional education programs. All of them successfully completed the training - 3883 students, 100%. For example, the most popular programs were Biosafety Certification Courses, with 177 participants trained in 2024 (100%).

A balance was ensured between the existing potential of the educational organization and the opportunities for training and recruitment of students, since the organization has all the educational resources and Academic staff.

In general, all Standard 4 criteria are met. The experts familiarized themselves with the documentation for the admission of students, including their statements and wishes. Many documents are well drawn up, but there are comments regarding the maintenance of the Journal for the issuance of documents (a document of strict accountability) and the Journal for the attendance and progress of students. It is necessary to keep these logs separately, in accordance with the LSI of CPE.

Regarding the practice of academic counselling, personal support for students and the development of not only professional skills, experts interviewed 4 teachers and the head of the ITC.

Consulting of students on the choice of training topic and event format is carried out if there is a need for training or at the beginning of training. For this purpose, the website <https://nscedi.kz/missiyasy-2> contains information about the educational process under PE programs. Phone calls are accepted and correspondence is carried out by e-mail.

CDP programs are recognized by specialists and all interested parties and are a priority.

4.2 Teaching strategies

One of the priority directions of the Development Strategy of the NSCEDI is the creation of appropriate conditions for specialists with an individual approach to advanced training and certification of healthcare system specialists, which is reflected in the policy of the Centre.

The organization provides flexibility in learning paths by registering students and applications from medical institutions, taking into account their choice and needs, thereby developing competencies. The organization uses various teaching methods, the main emphasis is on practical classes taking into account the specifics of the students' work, taking into account a specialized organization, educational programs aimed at: Biosafety, epidemiology and microbiology of especially dangerous infections of I-II pathogenicity groups, Biosafety when working with pathogenic pathogens II-IV pathogenicity groups." Hybrid forms of training using IT technologies are used. Seminars and conferences are held with duration of hours from 6 to 18.

Distance learning technologies are more often used in programs: certification courses on the MOODLE platform. This allows students from different cities of the country to undergo full-fledged training without interrupting their work. *During conversations with students, experts found that the methods of teaching students were satisfactory.*

4.3 Participation and influence of students in additional and non-formal education programs

NSCEDI provides students with the opportunity to discuss their training needs with the leaders and organizers of continuous professional development programs, through preliminary discussion and request for specific training topics. NSCEDI cooperates with international partners GIZ, CDC, with country partners of the National Centre of Expertise, Research Institute for Biological Safety Problems. This cooperation includes conducting seminars and trainings on training specialists in biosafety.

NSCEDI annually sends a calendar-thematic plan to the CSEC, PCS, NCE and other medical organizations. Information letters are submitted monthly and posted on the website. Listeners can consult by telephone with NSCEDI specialists. During interviews with trainees, experts found that trainees can express their opinions on the content of professional development programs and non-formal training programs. Thus, the students recommended creating a computer class so that there would be access to Internet resources, incl. and to electronic ones, so that they do not have difficulties in writing and preparing students' independent work. The listeners recommended removing the

distance learning form, because All certification training courses conducted by the Centre consist of 50% distance learning and 50% face-to-face format.

NSCEDI employees are members of various working groups of the Ministry of Health of the Republic of Kazakhstan when developing issues in their specialty, members of the EMA of REMA, included in the working groups of the Ministry of Health of the Republic of Kazakhstan, the Ministry of Education and Science of the Republic of Kazakhstan, the Ministry of Agriculture of the Republic of Kazakhstan, the Security Council of the Republic of Kazakhstan on biosafety, are members of editorial boards, authors/co-authors of programs/projects with the countries of Germany, Russia, USA, European Union, China, Pakistan on issues of biosafety and biosecurity, ensuring epidemiological well-being regarding plague in the territory of transboundary natural foci of the Russian Federation and the Republic of Kazakhstan, on issues of joint survey of natural foci in transboundary territory.

4.4 Working conditions

At the NSCEDI, the additional education program is implemented at the Personnel Training Centre and the Central Clinical Hospital in accordance with concluded agreements with certain medical educational and scientific organizations; CPD programs are implemented in safe conditions on the territory of the NSCEDI.

In special rooms (infectious department for dissecting and infecting laboratory animals, bacteriological hall, etc.), students undergo practical classes under the guidance of a teacher. All necessary conditions are created for students of the NSCEDI to help them meet their educational, personal and career needs. The acquired knowledge and skills in planning the educational process, methodological issues in the development of educational programs allow, together with the student, to prepare the most adapted program according to the needs of the student (duration of training, choice of topic, program content, etc.).

The organization has the authority to determine the ongoing or informational delivery of additional education and non-formal education programs. This makes it possible to take into account the working and employment conditions of students at their main place of work. This requirement is stated in the document International Standards ISO 35001:2019 “Biorisk Management for Laboratories and Other Related Organizations” and International Standards ISO 27001 “Information Security Systems”, approved at a meeting of the Academic Council.

Students can self-assess their own final learning results through self-testing, which is organized at the ITC. Also by solving situational problems, of which more than 100 have been developed. At the end of the training, the organization conducts a survey that includes questions about the trainee’s satisfaction with the knowledge gained. *Thus, the results of a survey of students in 2024 showed that 94.29% of the students surveyed responded that they were satisfied with the knowledge acquired, 2.86% were partially satisfied, and 2.86% were unsure of the answer.*

Conclusions of the EEC on the criteria. Complies with 11 standards: fully – 11.

Standard 5: ACADEMIC STAFF

5.1 Faculty Admission Policy

The NSCEDI has an approved Personnel Policy (Order No. 218 dated December 18, 2019), reflecting the goals, principles, main directions in the field of employment, training and development, personnel motivation, and management responsibility for its implementation. In total, the NSCEDI has 220 employees, of which 24 are full-time teachers, 1 part-time.

All teachers of the training centre are full-time employees of the NSCEDI, of which 6 are doctors of medical sciences, 5 are PhDs, and 13 are candidates of medical sciences. They are involved in the educational process in accordance with the ongoing research on the monitoring of acute infectious diseases (in the context of each infection) in the context of each educational program. Moreover, each employee has equal rights to admission to teaching activities if they meet the

qualification requirements. As part of ensuring continuous professional development, Academic staff on an ongoing basis master additional professional education programs in the areas of epidemiology, microbiology, bacteriology, virology of infectious diseases, biosafety and biosecurity.

The NSCEDI has a professional, highly qualified teaching staff: doctors and candidates of medical and biological sciences, professors, associate professors, with extensive work experience, having irreplaceable experience in training specialists, which determines the demand in the market of educational services.

During the inspection, experts noted that teachers have not received advanced training in pedagogy over the past 5 years, there is a discrepancy with Order No. 305 “On approval of the nomenclature of specialties and specializations in the field of healthcare, nomenclature and qualification characteristics of health care worker positions” dated December 21, 2020, annex 3.

In order to form personnel potential, young specialists with a master's degree in the field are involved in the educational process (practical classes) (Annex 21.1 and 21.2).

The experts familiarized themselves with the “Rules of Professional Ethics,” which define ethical standards and academic integrity. Before the start of each cycle, students are given an introductory briefing on compliance with biosafety, the routine of the educational process and ethical standards. Each listener is given a badge indicating their last name, first name and patronymic. Upon entering the laboratory, a note indicating the start and completion of work is written in the journal, indicating the name of the student and his signature. These rules apply to everyone who visits the laboratories.

In order to verify Standard 5 data, a conversation was held with the Head of the Human Resources Development Department, G.N. Ospanbekova. During the conversation the following questions were asked:

- 1. On the basis of what regulatory documents are teachers involved in the educational process of additional education?*
- 2. What qualification requirements must they meet?*
- 3. Do you have a plan to improve the qualifications of your teachers?*
- 4. Do you think, as a HR specialist, should you be involved in admitting an employee to the educational process?*

The answer is that I do not deal with these issues.

These answers allowed the experts to identify the lack of interaction between the personnel service and the ITC on the selection of personnel for teaching (there are 24 such teachers in total), as well as problems in the management and development of human resources. Most teachers have not received advanced training over the past 5 years and do not know modern teaching methods.

While surveying teachers, it was found that the majority (76.9%) are completely satisfied with the organization of work and workplace in this educational organization, but 23.8% are partially satisfied. In this educational organization, teachers have the opportunity to engage in scientific work and publish the results of research activities - 92.3% fully comply with this requirement.

5.2 Faculty Commitment and Development

The composition of the Academic staff for each educational program is formed taking into account the level of the field of study, qualifications, and employment in scientific programs. Each teacher is notified in advance about the planned cycle, and the date and time of the classes are agreed upon. The presence of a personnel reserve (for each direction there are 2-3 teachers) ensures the formation of Academic staff for each cycle, taking into account the sufficiency of working time for the provision of educational services.

The educational process is carried out in accordance with the current LSI of the Republic of Kazakhstan regulating programs of CDP. In order to comply with the requirements and norms of educational standards, information work is carried out among teaching staff on an ongoing basis to familiarize them with the current orders of the Ministry of Health of the Republic of Kazakhstan, the MSHE, and the Ministry of Agriculture.

NSCEDI specialists constantly improve the level of their professional knowledge and skills by undergoing CDP cycles and participating in training seminars. In the context of globalization, NSCEDI pays close attention to the integration of specialists into the international medical community. This is ensured by the training of specialists in leading foreign research institutes and universities, and participation in international conferences.

In order to verify Standard 5 data, during interviews with 5 (out of 24) teachers, experts obtained opinions on approaches to developing the pedagogical competence of teachers and their motivation to participate in teaching students. Questions were asked to the teachers:

1. How do you evaluate the effectiveness of training using the Kirkpatrick model?

2. What regulatory documents do you use in the educational process?

3. What reporting documents do you submit upon completion of the training course and on the basis of what regulatory document are educational programs for certification courses and advanced training cycles developed?

4. What assessment criteria do you use in the educational process?

Answer: The International Training Centre does this.

Teachers' wishes:

1. To staff the ITC with full-time teachers.

2. To improve the material and technical base: purchase microscopes of the latest technology - Trinocular microscopes.

A balance is maintained between the teaching, scientific and service functions of the NSCEDI staff. While attending practical classes, in a conversation with teachers Abieva A.A. and Bayzhumanova Zh.A experts have established that practical classes are conducted with all appropriate safety measures, instruction and support for each student during training, in accordance with the requirements.

NSCEDI recognizes the merits of the academic activities of teachers, which was confirmed in feedback from students. Experts have found that practical activities and research are used in teaching and learning.

NSCEDI employees regularly undergo training in the profile of their specialty in accordance with Order No. 305 of the Ministry of Health of the Republic of Kazakhstan. The Centre's employees undergo repeated biosafety training conducted by the Centres for Disease Control and Prevention (CDC). So, during an online interview with international partners (Natalia Kim, Dmitry Berezovsky), the head of the CDC, Natalia Kim, explained how the training is carried out, that the course consists of a 40-hour Module and is aimed at acquiring skills and abilities in safety with hazardous weapons.

The experts did not receive confirmation from teachers that they had completed advanced training cycles in pedagogy. The interview showed that master N.N. Shakiev is involved in the educational process, without experience in teaching and practical work, which does not meet the requirements of the LSI CPE.

Throughout their professional career, employees have the opportunity to improve their qualifications and participate in international conferences at the expense of the NSCEDI. Performance results are taken into account when applying to higher executive bodies for incentives, rewards, and bonuses based on performance results.

In order to further form and develop qualified personnel to increase the motivation of specialists, NSCEDI operates systems of non-material and material incentives. Thus, each new employee of the NSCEDI goes through a certification cycle free of charge (depending on the level of education).

Experts noted that teachers develop in students the need for additional training and independent work with literature and medical documentation. During interviews with students, they showed that they have access to literature in the library and work in the reading room, that when doing independent work, teachers guide them to search for the necessary literature in developing and writing presentations, and independently solving non-standard cases in practice.

There is an opportunity for career growth and development of teacher competencies in the organization - 84.6% of surveyed teachers responded, and 15.38% partially agreed with this. Studied in professional development programs, less than 1 year ago - 0% during a given year - 23.8%, more than 3 years ago - 69.23%, more than 5 years ago - 7.69%, answered "I don't remember when it was" - 0.

The organization implements social support programs for teachers - 76.92% answered that "yes, such programs exist", 0% "I have already taken advantage of this", 7.69% of respondents answered that there are no such programs, and 7.69% of respondents don't know about it.

Conclusions of the EEC on the criteria. Compliant out of 9 standards: fully – 7, partially – 2, do not comply – 0.

Recommendations for improvement:

1) Teachers involved in the educational process must undergo advanced training in pedagogy in accordance with Order No. 305 "On approval of the nomenclature of specialties and specializations in the field of healthcare, nomenclature and qualification characteristics of positions for healthcare workers" dated December 21, 2020, Annex 3 (5.2).

Standard 6: EDUCATIONAL RESOURCES

6.1 Material and technical base

The material and technical base of NSCEDI includes the following elements:

- Lecture halls.
- Specialized bacteriological hall.
- Library.
- Workrooms.
- Bacteriological boxes for preparing educational materials for practical classes.
- Teachers' rooms.
- Auxiliary premises.
- Laboratory room.
- Isolator.
- Infectious premises for working with infected animals.
- Separate rooms in the Reproductive Treatment Centre (RTC) for practical and theoretical classes.

The total area is 6324.5 m², of which the usable area is 5531.79 m². The International Training Centre of NSCEDI provides training in additional education specialties and has three buildings to carry out training tasks: a 2-story main building on the territory of NSCEDI, premises in the administrative building and in the central training centre. All of them are equipped with the latest equipment for conducting training on work in the LBS-3 and LBS-2 laboratories.

The NSCEDI also has a zooparasitological museum, which contains collections of mammals and their fleas, as well as a collection of ticks (acarological).

In the main building of the International Training Centre on the 1st floor there is a sanitary inspection room with a shower and changing rooms for staff and students, equipped with lockers for outerwear and special clothing. On the 2nd floor there is a bacteriological hall with 24 seats with a thermostat room, an emergency box and a room for collecting medical waste. Each workplace in the bacteriological hall is a separate bacteriological mini-box - a bacteriological table, enclosed by glass doors, with individual lighting and a container for transferring infectious material. Also on the 2nd floor there are lecture halls with 24 and 12 seats.

The RTC has a lecture hall with 40 seats and a training laboratory for practical classes for 7 people. All lecture halls are equipped with the necessary multimedia equipment, air conditioning, heating systems, and sanitary facilities. The large lecture hall has an interactive whiteboard.

Conditions for rest and nutrition include equipped living rooms for meals and rest for students

and staff. Near the main territory of the NSCEDI there is a dormitory with a total area of 325.8 m², equipped with a heating system, water supply and sewerage, showers and sanitary rooms, a washing machine, sleeping places for 22 people, rooms for cooking and eating, refrigerators, microwave ovens, gas stoves and kitchen utensils. During interviews with students, they confirmed that the living conditions are really good.

A safe environment for all participants in the educational and scientific process is ensured through a system for ensuring safe working conditions, which is prescribed in the Safety Regulations and includes providing the necessary information and protection from harmful substances, microorganisms, compliance of premises with sanitary and hygienic standards and rules, compliance with safety regulations in the laboratory and when using the equipment. All buildings used for training are equipped with ventilation, air conditioning, heating systems, water supply and sewerage. The buildings of the NSCEDI and RTC are located in a fenced area, closed to access by unauthorized persons. There is an alarm system, 24-hour security of the territory and video surveillance. The use of smartphones and the connection of listeners' other electronic devices to the Internet is prohibited throughout the entire territory of NSCEDI and RTC in accordance with biosecurity requirements. All divisions of NSCEDI are telephoned and covered by internal e-mail, which provides local communication. This mechanism is regulated by a procedure that includes instructing students and teachers. While attending the International Training Centre for the first time, students are given an introductory briefing on safety rules in the laboratory, the main and emergency exits, room layouts, structure of the premises, prohibition of entry into an infectious room, and the basic rules of the anti-epidemic regime are indicated. The data of each participant in the procedure is recorded in a special journal, where they sign that they are familiar with the rules of conduct in the workplace and the territory of the NSCEDI. Staff and trainees confirmed that they received the briefing and signed the familiarization sheet when they were interviewed.

The RTC has a rapid response team of 26 people (a team of trained scientists and technical personnel - of which 16 are doctors and 10 are engineers) with skills in cardiopulmonary resuscitation and emergency medical care in urgent conditions according to the international standard. There is a tonometer, defibrillator, Ambu breathing bags and a set of equipment for emergency first aid, which are located in a special, easily accessible place. Members of the EEC were convinced of this when visiting the RTC, checking the equipment of the rapid response team.

The learning environment is improved through regular updates. Thus, the necessary consumables are purchased, culture media are prepared in the culture media laboratory of the NSCEDI, and erythrocyte diagnostics are supplied from the production department of the NSCEDI. The equipment undergoes certification annually, outdated models are written off, and new equipment is purchased as necessary.

Over the past 5 years, the vivarium has been reconstructed and modernized in accordance with the requirements of ISO 14644, and the latest equipment has been installed in the RTC.

The library of the scientific centre is located in the administrative building (total area 212 m²) and has a lecture hall (24 seats). An electronic library is available, which contains presentations from conferences, methodological materials, LSI, thematic reviews on scientific topics, methodological materials on EDI, on biological safety and biological protection. During interviews with students, they noted that Internet access outside the library is limited and it is necessary to equip a computer class in the reading room with 3-4 seats.

The library collection consists of 26,319 copies, including 452 in the state language, 25,707 in Russian, 160 in a foreign language. There are 71 electronic copies of educational literature. Periodicals: 7560 copies.

Practical skills are developed at an international training centre.

6.2 Training bases

A review of the resources showed that they correspond to the goals and objectives of educational activities; thus, the following bases were visited: International Training Centre, Central Reference Laboratory, Faunal Museum, and Library. Employees of the educational organization ensure collegial and ethical relations with medical staff and the management of the scientific centre to achieve the final outcomes of training students. To conduct practical classes, students use modern microscopes, thermostats, sterilizers, biosafety cabinets, scales, amplifiers, desiccators, dispensers, centrifuges, vortexes, and laboratory glassware. The necessary consumables are available: culture media, preparations for serological studies. Before starting the training, the student receives safety instructions from the teacher and knows what skills he should improve and develop during the training.

During a visit to the training centre, experts examined the resources, their compliance with training programs, accessibility for teachers and students, and how modern this equipment is and meets the needs of students and practical healthcare. The experts received evidence of compliance with Standard 6, as well as validation of the self-assessment report information. Experts were convinced that practical classes were conducted in the bacteriological hall, zoological and faunal museums, and training rooms of LBS2 of NSCEDI. All units involved in the educational process have permission to work with pathological biological agents of I-IV groups.

Practical classes are held in the bacteriological hall with 24 seats, which has a thermostat room, an emergency box, and a room for collecting medical waste. Members of the expert commission attended practical classes and had the opportunity to make sure that each workplace in the bacteriological hall is a separate bacteriological mini-box - a bacteriological table, enclosed by glass doors, with individual lighting and a container for transferring infectious material. We had the opportunity to talk with listeners at their workplace. It should be noted that students noted many positive aspects in the training: accessibility of the material, highly qualified teachers, and the opportunity to work independently while mastering skills. They also willingly demonstrated the technique of inoculating pathological material and Gram staining of smears.

While taking CDP courses, students also visit the RTC, where they are shown the structure of this unique laboratory, equipment, biosafety cabinets, and modern personal protective equipment.

In order to validate the implementation of the self-assessment report data and obtain evidence about the quality of the programs, interviews were conducted with trainees. The experts asked questions about satisfaction with training, sufficient time to develop practical skills, satisfaction with teaching methods and qualifications of teachers, social and moral support for students in need, and availability of resources from international databases of professional literature.

In general, students were satisfied with the training, assessment methods, and purposefully wrote an application to this organization, because they believe that the educational organization has good resources, image and international connections. During the interviews, it was revealed that students would like to have a computer class with Internet access in the library and hostel, as well as a printer (you have to go to the city to print out independent work).

An interview with 4 teachers, including 4 full-time teachers (Meka-Mechenko T.V., Begimbaeva Ye.Zh., Alymkulova Z.T., Shakiev N.N.) showed that there are both successes and problems in education management. It should be noted that Academic staff conducting training for advanced training and certification courses are also leading researchers, and accordingly have a high workload.

Experts studied such student documents as a progress log, a log of individual workloads, where the number of cultures performed and staining of preparations is recorded daily, and abstracts of independent work.

6.3 Information technology

Information and communication technologies include the library and provide access to web resources. In the educational process, they provide centre staff and students with scientific and scientific-practical literature. An electronic catalogue has been created for 300 titles of scientific and educational literature in Word, which includes articles, conference presentations and video materials.

Over the past 5 years, the library has been updated due to literature received from foreign companies collaborating with NSCEDI (for example, CDC, CH2M, materials of international conferences). The volume of literature received in recent years amounted to more than 30 titles. To modernize library work, an automated library information system (KABIS) was installed, and an alphabetical and systematic catalogue of books and articles was being formed. NSCEDI students partially master theoretical material on the MOODLE platform by logging into their personal account where lecture materials are posted. The Scientific Centre has official access to electronic databases Thomson Reuters, OXFORDJOURNALS MEDICINE, ELSEVIER, SCOPUS, which are used by all centre specialists and students.

Teachers and students are given the opportunity to use information and communication technologies through the library for independent work.

Experts found that students are competent in using information and communication technologies for independent learning. For example, students demonstrated independent work done using materials from the library database and available web resources.

6.4 Interaction with colleagues

The scientific centre simultaneously trains students of different levels and directions. Paramedical workers and specialists with higher education, among the latter there are doctors and veterinarians. Training of paramedics is carried out mainly in the bacteriological hall, and doctors are trained not only in the laboratory, but also in lecture halls and classrooms, where multidisciplinary skills are developed in identifying especially dangerous infections (plague, cholera, etc.). Thus, students develop skills to work in a team of colleagues from related professions and in emergency situations

Students have access to the laboratories of the training centre and all the conditions for improving their practical skills - 76.9% of teachers completely agree with this, 23.1% partially agree.

6.5 Formal and non-formal types of learning

NSCEDI specialists participate in republican and international trainings. For example, 19 NSCEDI specialists learned the laboratory quality management system at a training conducted by WHO experts (on the basis of the NSCEDI RTC 2021)

Along with internships, the centre's specialists participate in international conferences where issues of the quality of continuous professional development of specialists are raised. In 2022, NSCEDI held an international scientific and practical conference "One Health - A Look into the Future," which was attended by leading experts from more than 30 countries near and far abroad (Almaty, 2022). In 2023, specialists will take part in the conference on medical biological protection (Munich, Germany). Students take part in many events. Participation in these events is issued with a certificate indicating the hours.

6.6 Research and scientific achievements

The strategic direction of the NSCEDI is to conduct scientific research aimed at ensuring biological safety, developing and implementing modern approaches to monitoring, prevention, and evaluating the risk of people becoming infected with especially dangerous infections on the territory of the Republic of Kazakhstan. The results obtained were introduced into the educational process of NSCEDI within the framework of programs of additional professional education and practical healthcare (PCS) in terms of: epidemiological and epizootological monitoring, diagnosis of especially dangerous infections, development of research on the development of domestic diagnostic and preventive drugs for especially dangerous infections. Students of certification cycles and advanced training courses at the training centre are involved in conducting certain areas of research within their competence (analysis of modern literature on epidemiological and epizootological monitoring of infections, principles of study design, international and domestic approaches to conducting diagnostic

studies, etc.).

Over the past 5 years, 2 scientific and technological progresses have been implemented on the PTF of the Ministry of Health of the Republic of Kazakhstan, 2 scientific and technical progress as co-executors, and 4 grant projects of the MSHE. At the stage of implementation of 1 STP on PTF and 2 grant projects of the MSHE, all specialists of the scientific centre are involved in the implementation of these studies.

Scientific programs of NSCEDI (2018-2024):

- STP for the PTF of the Ministry of Health of the Republic of Kazakhstan “Development of the scientific foundations of a unified system for the Republic of Kazakhstan for monitoring, diagnostics and microbial collection of pathogens of particularly dangerous, “returning”, re-emerging and imported infections” (2018-2020);

- grants from the Ministry of Education and Science of the Republic of Kazakhstan: “Population ecological variants of the carrier, carrier and causative agent of plague in the Central Asian natural desert focus of plague” (2018-2020), “Improving experimental research with laboratory animals in the Republic of Kazakhstan”;

- STP for the PTF of the Ministry of Health of the Republic of Kazakhstan: “Development and scientific substantiation of public health technologies, biological safety to influence the prevention of dangerous infectious diseases” (2021-2023);

- Grants from the MSHE of the Republic of Kazakhstan: “Study of the genetic diversity of plague strains to create a biorepository and determine the genesis of enzootic plague nuclei in natural foci of Kazakhstan” (2021-2023), “Study of the early immune response to COVID-19 on a model of Syrian hamsters with chronic inflammation and preventive activity metformin” (2021-2023)

Joint scientific developments are also envisaged: Co-executor of STP “KazRVI” LLP, STP for the PTF of the Ministry of Agriculture “Study of the epizootological characteristics of the country’s territory regarding camel plague and the development of veterinary and sanitary measures to increase their effectiveness” (2021-2023).

The experts were familiarized with the scientific work plan for 2023-2025, which includes the following projects:

- “Improving measures to ensure biological safety in Kazakhstan: countering dangerous and especially dangerous infections” (2023-2025);

- “Study of molecular genetic features and variability of plague and tularaemia strains in epidemiological surveillance of zoonosis” (2023-2025);

- “Study of resistance genes of plague and cholera pathogens to antibiotics, construction of a PCR test system” (2023-2025).

Planned projects for 2024-2026:

- Participation in the competition of the MSHE of the STP for the PTF “Development and implementation of domestic diagnostic drugs for especially dangerous viral infections”

- Participation in the STP competition for the PTF of the Ministry of Health of the Republic of Kazakhstan for submission to participation when the competition was announced “Methodological basis for the development and implementation of diagnostic preparations of EDI for ensuring biological safety”

NSCEDI has accreditation of scientific activities ISO 9001:2015 for the scope of certification: Conducting scientific, fundamental, applied, reference, diagnostic studies, accounting and storage of deposited strains of infectious agents. The priority areas of scientific research are Biosafety and biosecurity.

The relationship between scientific research and education lies in the inclusion of research results in educational programs of additional education and certification courses. The results of scientific work are being introduced into the educational process in the form of new methods for diagnosing infections, features of the course of quarantine infections at the present stage.

During the survey, to the question “In this educational organization, I have the opportunity to

engage in scientific work and publish research results,” 92.3% of teachers answered that they participate in scientific work through projects and can publish their data.

Thus, a lot of scientific work is being carried out at the NSCEDI, in which both the centre’s staff and students take part.

Experts have found that specialists in the field of biological safety and biosecurity are in high demand; this was revealed during the organization’s request to stakeholders. A large number of applications have been submitted. Groups are full of 24 people, according to the seats in the bacteriological laboratory. Consumers of the organization's educational services are satisfied with the quality of student training and teaching methods. All this allows us to draw conclusions about the quality of innovative changes in additional education. For example, the number of listeners in 2019-2024 ranges from 177 in the current year to 2725 in 2020-2021 (during the Covid19 pandemic).

6.7 Training in alternative educational organizations

Since 2014, NSCEDI has had a strategic partner; the German Society for International Cooperation (GIZ), and since 2018, the Centres for Disease Control and Prevention (CDC, USA) has been collaborating with them. There is also cooperation with 2 republican and 5 foreign organizations from 7 countries. Cooperation is formalized in the form of cooperation agreements and memorandums. Over the past 5 years, 4 agreements have been concluded with international organizations. Experts are familiar with 2 agreements.

NSCEDI cooperates with 5 professional associations in such areas as: biosafety and biosecurity, epidemiological well-being for especially dangerous infections. The subjects of cooperation with professional associations include conducting training sessions on biosafety, surveying transboundary territories for plague, exercises using mobile and portable laboratories, and CDP courses.

The organizational structure has a department for science and laboratory diagnostic services, the structure of which includes the CRL, an international training centre, and the function of which is to organize scientific and laboratory diagnostic work. The department is guided by the Regulations and work plan. Experts familiarized themselves with the reporting activities for 3 years and determined that a large amount of scientific work is being carried out, cooperation is being carried out with the world's leading scientific centres.

The impact of cooperation on educational activities lies in the introduction into the educational process of the latest scientific achievements in the field of laboratory diagnostics and biosafety issues.

NSCEDI is systematically implementing a policy of technology transfer from leading institutions in near and far abroad countries. For example, 4 specialists completed the “Introductory course on the development and production of biological drugs” (Seoul, 2023), 2 specialists completed the internship “Technology for automatic synthesis, purification and analysis of DNA oligonucleotides on a DNA/RNA synthesizer model ASM-800ET and an installation for the purification of oligonucleotides OPS-12” (Novosibirsk, 2023), 4 specialists - internship "Molecular diagnostics and methods for identifying pathogens" (2024, China).

Regional and international exchange of employees is carried out on the basis of international projects and is provided with resources from the budget of the NSCEDI and the inviting party.

Academic exchange is organized in accordance with the goals of the scientific direction and the introduction of the latest innovative technologies and in compliance with ethical principles, since an agreement on subsequent development is concluded with each traveller.

Thus, experts determined that educational resources, including material and technical base, international cooperation, information technology, research and scientific achievements are at a high level, but it is necessary to provide students with access to Internet resources in the library and hostel.

Conclusions of the EEC on the criteria. Comply out of 15 standards: fully -14, partially - 1, do not correspond - 0

Recommendations for improvement:

- 1) To provide students with access to Internet resources (websites, databases), equip a computer class with 3-4 seats.) (6.3.1.)

Standard 7: EVALUATION OF ADDITIONAL AND NON-FORMAL EDUCATION PROGRAMS

7.1 Mechanisms for monitoring and evaluating educational programs

The NSCEDI has developed a system for monitoring the effectiveness of educational programs, which provides for the evaluation of programs at the stages of planning, implementation, analysis of results and making changes, which makes it possible to monitor the process of implementation of the educational program and the progress of students. The procedure includes several stages:

1. Selection of the program topic based on the TC, the internal needs of the NC, the needs of practical healthcare, analysis of the epidemic situation for especially dangerous infections, survey of doctors and managers; 2. Discussion of the developed programs among interested parties (teachers, research staff, employers); 3. Internal and external review of programs; 4. Discussion and approval at the Academic Council; 5. Evaluation of educational resources at the stage of program implementation.

Management, organization, coordination of the work of all departments and responsibility for the implementation of educational programs in all areas rests with the training centre for personnel training and the Academic Council of the NSCEDI.

Educational programs are developed by the teachers themselves. In order to ensure the quality of EP, their content, teaching methods, assessment methods, CIS undergo internal and external examination (1 internal and 1 external review) and are approved at meetings of the Academic Council and the Director of the Centre.

The organization's self-report details that the effectiveness of the training sessions is assessed using the Kirkpatrick system. However, during interviews with Academic staff and students, it was established that this system is not applied!

The results of the discussion are reflected in the minutes of the meeting of the Academic Council. The quality of documentation is evaluated through the QMS system. To conduct training for students in 2020–2024 25 NSCEDI employees were involved. The evaluation of the sufficiency of educational resources is carried out by the department of the international training centre. Compared to 2019, by the beginning of 2024, the number of EP in the organization increased to 19, 18 internal regulatory documents were developed, 12 documents were updated. The section of the website containing information about CDP programs will be supplemented with new information in 2024.

An analysis of students' achievement of final learning outcomes showed that for the period 2020–2023. There were no precedents for non-completion of training. Feedback from students showed that they improved their skills in the specialty and received additional up-to-date information. The experts familiarized themselves with the results of a survey of students for the current year, where they 100% noted that they had access to equipment, 100% were provided with literature. To the question “Are you satisfied with the organization of teaching (amount of time for practical training, location of seminars, topics of seminars),” 100% of respondents answered “completely satisfied.”

The result of the analysis of the quality of educational services provided by NSCEDI made it possible to expand the number of training programs and bring them to 19 (ESG S1.7), to conclude agreements and memorandums with 8 international organizations.

Interview with international partners of NSCEDI on the GIZ project Yelena Serebrennikova, CDC Natalya Kim, Dmitry Berezovsky, as well as online interviews with country partners with NCE Kazhkarimova Aina, RIBSP Chervyakova O.V. showed that over several years of mutually beneficial cooperation, training sessions on biosafety were conducted for infectious disease doctors and epidemiologists, scientific conferences were held, and cross-border territories were surveyed for

plague.

An interview with teachers showed that they are involved in all international and domestic projects of the NSCEDI, have the opportunity to participate in scientific conferences, and publish research results.

7.2 Feedback

Feedback from students and teachers is carried out through a questionnaire (3 questionnaires have been developed), a blog of the head of the Centre, a box of reviews and suggestions, which is located in the training centre. The experts reviewed 1 questionnaire and 5 reports based on the results of the survey over 2 years.

The survey of listeners is carried out in a form, and feedback is provided by e-mail. Questionnaires are processed by the department of the international training centre and stored in the personal files of students.

The questionnaire contains 24 questions and the following survey topics: organization and conditions of training, satisfaction with the quality of teaching and learning, content of lectures, sufficiency and quality of demonstration material, the possibility of mastering practical skills during the training period, availability of work in the library and in the Internet classroom.

The results of the survey are announced at a meeting of the department and the Academic Council. A deferred survey of students who have completed training is carried out after 2 years and is devoted to collecting information on the implementation of training results in the workplace and the need for new material.

As a result of the analysis of the survey, the following improvement measures were carried out in 2020: the work of the library was systematized, additional copies of textbooks were purchased, and new microscopes were purchased.

As a result of the analysis of the survey, the following improvement measures were carried out in 2023: conditions in the hostel were improved, Internet access was provided on the territory of the hostel.

Conclusions of the EEC on the criteria. Comply out of 10 standards: fully - 8, partially - 2, do not comply - 0

Recommendations for improvement:

- 1) To confirm with documents the evaluation of the final learning outcomes (7.1.2).
- 2) To involve stakeholders (employers and other external stakeholders) in the process of monitoring and evaluating educational programs) (7.2.7).

Standard 8: ORGANIZATION

8.1 Documentation and needs for planning additional and non-formal education

The organizational structure of the NSCEDI includes the “International Training Centre” division, which is responsible for the educational direction. The division is guided by Regulation 16 on the International Training Centre approved by order No. 102 of the NSCEDI named after M. Aikimbaev dated 06/04/2021. The structure and staffing levels are approved by the director of the NSCEDI.

During a conversation with the head of the international training centre, Isaeva S.B. experts found that planning of educational work is carried out on the basis of an annual application from a health care organization. The International Training Centre reports to the Deputy General Director for Science and Laboratory Diagnostic Service G.Zh. Tokmurzieva and the Academic Council of the scientific centre. In addition to the specialists of the training centre, all leading scientific employees of the NSCEDI laboratory are involved in the educational process, depending on the topic of the cycle. Monitoring the quality of the department’s work is carried out by the quality management and internal

audit service, which was organized in 2019 and includes an analysis of the number of students, financial profit, student feedback and Academic staff. The department carries out the following types of work: certification courses and CDP programs for personnel of state health authorities for emergency response specialists and laboratories of especially dangerous infections of the SPC SEEM, regional branches of the National Centre of Expertise, NRCV, branches of the National Holding “QazBioPharm” and training for individuals who have the appropriate education for practical application in safe work with dangerous pathogens on the basis of permission to work with microorganisms and helminths No. 100 to conduct diagnostic work with microorganisms of I-IV pathogenicity groups.

The main partners of the department within the NSCEDI are KazNMU named after S. Asfendiyarov, Karaganda Medical University, Semey Medical University, and Kazakh National Agrarian Research University. International cooperation includes such organizations as the German Society for International Cooperation (GIZ), the Russian Anti-Plague Institute "Microbe" of the Russian Federation, the Centres for Disease Control and Prevention - USA, the Regional Secretariat of the EU Centres of Excellence for Chemical, Biological, Radiological and Nuclear Materials in Central Asia - European Union, China CDC, Quaid-i Azam University - Pakistan, World Health Organization, International Red Cross and Red Crescent Society.

The department analyses the needs for additional training of specialists working in the field of EDI, as well as biosafety. The needs and requests of the Ministry of Health, Ministry of Agriculture, Ministry of Education and Science and other interested ministries and departments of the Republic of Kazakhstan are taken into account.

The organizational structure was updated in 2020 in consultation with the authorized body (Ministry of Health of the Republic of Kazakhstan) and based on recommendations from the Eurasian Centre for Accreditation and Quality Assurance in Education and Healthcare. The organization is headed by Zhumadilova Zauresh Bapanovna, appointed to the position in 2021. Compared to 2019, in 2023 there were changes such as the equipment of a bacteriological hall for practical classes. In 2020, an electronic library was created and shelves for literature were purchased. A quality management and internal audit service has also been created and international partnerships have been expanded in the context of additional education.

During the pandemic, the organization expanded its educational activities, developing an additional 8 training programs. In 2020 -2021, distance learning forms for cadets were introduced and successfully used, and 500% more students were enrolled in training. The organization's management explains the sharp increase in the number of listeners by the pandemic. Today, the most popular programs are “Biosafety, epidemiology and microbiology of especially dangerous infections of I-II pathogenicity groups” 900 hours/30 credits, this is a certification course for specialists with higher professional education and “Biosafety, epidemiology and microbiology of especially dangerous infections of I-II pathogenicity groups” "(for laboratory technicians handling pathogenic biological agents of I-II groups, this is a certification course for specialists with secondary vocational education, in which 68% of students were trained.

8.2 Academic leadership and administration

To ensure transparent management and decision-making, the NSCEDI has allocated responsibilities of structural units and management responsibilities in providing continuing professional education programs. The coordination and supervision of the international training centre is carried out by the Deputy General Director for Science and Laboratory Services. In addition to the specialists of the training centre, all leading research workers of the NSCEDI laboratory are involved in the educational process, depending on the topic of the cycle. Administrative support is provided by human resources and finance services, as well as the public procurement unit.

Educational programs are compiled on the basis of the Order of the Minister of Health of the Republic of Kazakhstan dated November 9, 2022 No RK MOH-132 “On approval of a standard

program of professional training, retraining and advanced training of personnel in the field of biological safety”, for transparency, all CDP programs are on the NSCEDI website.

Prepared draft educational programs are submitted for approval to management (Deputy General Director for Science). If approved, the program is submitted for internal and external review.

Annually to plan the educational programs provided:

- requests from consumers of educational services are generated,
- information is provided to the central executive body - the Ministry of Health of the Republic of Kazakhstan about the need for educational programs for training specialists under the budget program 005 “Advanced training and retraining of specialists from state health care organizations”,
- potential consumers of educational services are informed about planned programs,
- a calendar and thematic plan is drawn up, which is posted on the NSCEDI website and sent to potential customers,
- the public procurement unit constantly monitors advertisements for the provision of educational services and confirms participation with the subsequent conclusion of a contract if available,
- on the basis of concluded agreements, the training centre draws up a training schedule and schedule for the specified cycles,
- on the basis of an official letter, the personnel service issues an order for the admission of students and Academic staff, and at the end of the cycle - an order for expulsion; when providing paid services - payments to Academic staff and support staff.

8.2.2 Interaction with other organizations:

During interviews of experts with representatives of the organization’s partners, both internal and external, it became known that the joint development and implementation of training programs is carried out mainly with external partners. According to CDC representative Kim Natalya, training on biosafety was jointly developed and conducted for students from various healthcare organizations. However, when asked whether monitoring and assessment of the quality of educational programs of the international training centre are carried out, the representatives answered negatively.

Interaction with PCS and NCE is ongoing in terms of the formation of applications for the Academic year of PP and AT. The letter indicates information that NSCEDI plans to conduct courses indicating thematic cycles and whether there is a need for specialists to take these courses. All information is transferred to the PCS and is done by email. However, interaction with CSEC of the Ministry of Health of the Republic of Kazakhstan by courier mail, taking into accounts the specifics of the organization. At the NSCEDI, at the level of departments and laboratories, goals in the field of quality, the need for the development of processes and documents, as well as the provision of resources for specific educational programs at levels and areas of education and in specific disciplines have been established. Internal assessment of the quality of education is implemented in the selection, training and certification of personnel, internal audit processes, ongoing educational process, self-assessment (accreditation), and evaluation of educational programs. Evaluation of the quality of implementation of educational programs at all stages of education is carried out through determining the level of satisfaction of students with educational programs. Thus, during interviews between experts and students, everyone’s feedback on the training programs was positive. When asked what they would like to improve, listeners answered that there are not enough personal computers and no access to the Internet and international literature databases.

8.3 Allocation of budget and resources for training

The budget for advanced training and non-formal training programs consists of funds received from government orders (15.8%) and paid services (84.2%). It should be noted that starting from 2020, the share of students studying at the expense of state orders has been consistently decreasing. If the share of government orders in 2020 was 98.7%, then in 2023 it was only 15.8%.

The NSCEDI annually creates a plan for financial and economic activities based on sources of financing, and analyses the receipt and expenditure of financial resources. The general responsibility

for the effectiveness of financial management lies with the director; responsibility for the formation, control and analysis of the results of using the budget is the management of financial and economic activities. The basis for budget formation is the price list approved by the Academic Council. The price list is revised based on monitoring and analysis of prices on the market.

When forming a plan for financial and economic activities, the priority directions of development of the NSCEDI are taken into account, including those determined by the strategic plan.

The experts reviewed the financial plan for the year. For the period 2020-2024 the organization received state and regional funding through programs: certification courses and advanced training for senior and mid-level medical personnel. A total of 3883 students were trained.

During the same period, 651 people completed training on a paid basis. The average cost of training for an advanced training program is 400,000 tenge, and short-term cycles/courses - 190,000 tenge. Payment for training from individuals is carried out according to the application and invoice provided to the potential student. Payment is made to the organization's bank account, which ensures transparency. The cost of the training program is described in the approved price list and posted on the official website of the NSCEDI.

8.4 Management of educational programs

Advanced training and non-formal training programs (cycles, courses) are developed in accordance with current regulations, the formation of students is carried out in accordance with the order of the Ministry of Health of the Republic of Kazakhstan "On amendments to the order of the Minister of Health of the Republic of Kazakhstan dated December 21, 2020 No RK MOH-305/2020" On approval of the nomenclature of specialties and specializations in the field of healthcare, nomenclature and qualification characteristics of positions of healthcare workers" dated April 14, 2023 No. 72 Registered with the Ministry of Justice of the Republic of Kazakhstan on April 17, 2023 No 32320.

Programs are approved at a meeting of the Academic Council. The approval stamp on the document is the educational program and minutes of the meeting. **(ESG G1.2)**. The structure of the programs complies with the requirements of such regulatory legal acts as the order of the Minister of Health of the Republic of Kazakhstan dated November 9, 2022 No RK MOH-132 "On approval of a standard program of professional training, retraining and advanced training of personnel in the field of biological safety."

While developing and implementing educational programs in the educational process in 2023-2024, the following requirements of practical healthcare were taken into account: the relevance of educational programs among the organization and their compliance with modern requirements. This was obtained by analysing the results of applications from the organization and reviewing and updating educational programs.

Control over the activities of the International Training Centre is exercised by the Deputy General Director for Science and Laboratory Diagnostic Service. The department operates on the basis of Regulations Regulation 16 on the International Training Centre approved by Order No. 102 of the NSCEDI dated 06/04/2021 and job descriptions approved by the director of the NSCEDI 2021. Management, organization, coordination of the work of all departments and responsibility for the implementation of educational programs in all areas rests with the training centre for personnel training and the Academic Council of the NSCEDI.

The system of monitoring and evaluation of the educational program is carried out at all levels and includes the Centre for Training of Specialists, CRL trainers - biosafety specialists, laboratories of the centre, and the Academic Council. NSCEDI has a reporting system and procedures that allow employees to track the development of the training centre, expenses and income received by the budget. Internal regulatory documents, including constituent documents, are open and accessible in a network folder on the local network.

The responsibility of the administration in drawing up the educational program is ensured

through the procedure for reviewing and approving these programs at meetings of the training centre and the academic council. Based on the results of discussions of the programs, the training centre is given the right to make appropriate adjustments to the educational program.

Educational programs are developed by the teachers themselves. All teaching materials, control and measuring tools, educational and methodological aids, textbooks, monographs, etc.) Undergo internal and external examination and are approved at meetings of the Academic Council and the director of the International Training Centre. Data on the effectiveness of additional educational programs is obtained through the analysis of pre- and post-tests (the effectiveness of students learning the material). An analysis of the forms of subjective evaluation of student courses is carried out, where a column “suggestions for improving courses” is provided.

While summing up the results of the courses, the following are evaluated:

- The level of attentiveness of the listeners during the training
- Reports from students on the implementation of acquired knowledge in their workplaces.
- Analysis of mistakes made by trainees at workplaces in the specialty of the training received.

Experts evaluated the activities of the department and came to the conclusion that the department employs competent employees with management experience who have information about educational programs and LSI.

Conclusions of the EEC on the criteria. Comply out of 10 standards: fully - 7, partially - 3, do not comply - 0

Recommendations for improvement:

- 1) To develop a system for monitoring the final learning outcomes (8.1.1)

Standard 9: CONTINUOUS RENEWAL

The organizational structure is updated annually. The organizational structure was last updated in 2024 and changes were made to it, such as the change of the head of the International Training Center and the process of creating the National Holding “QAZBIOPHARM” continues.

1) Compared to 2019, in 2024 the organization offers students 19 programs in the following areas: Biosafety - certification courses and CDP for workers with higher and secondary medical education. The final outcomes of training are revised on the basis of LSI and internal regulatory documents (results of monitoring the implementation of strategic program activities, internal control of the structural divisions of the NSCEDI, plans/reports of the personnel training department).

In 2020, in connection with the pandemic, programs were developed on the following topics: “Fundamentals of biosafety and biosecurity in laboratories of the Republic of Kazakhstan” for 60 hours / 2 credits, “Advanced course on biosafety and biosecurity in laboratories of the Republic of Kazakhstan” for 120 hours / 4 credits, “Disinfection case in a medical institution” for 108 hours. Biosafety programs for specialists at anti-plague stations (certification and advanced training courses) are in greatest demand.

Identification of shortcomings in the organization of the educational process is carried out by collecting feedback from students, according to the Procedure for evaluating consumer satisfaction through questionnaires. The results of the survey are analyzed in the personnel training department. Thus, in 2023, it was revealed that students who completed the training responded positively to the proposed training programs and practical classes conducted at the simulation center. Elimination of deficiencies is carried out through annual analysis and reporting. For this purpose, the organization has an internal audit system and a human resources department.

The learning environment is improved through regular updating, expansion and strengthening of the material and technical base. For example, in 2020-2024 as equipment for a bacteriological hall for practical classes. In 2020, an electronic library was created and shelves for literature were purchased. A quality management and internal audit service has also been created and international partnerships have been expanded in the context of additional education.

These mechanisms led to an influx of listeners by more than 40% compared to 2019, and to an increase in revenue. It must be emphasized that the share of government orders is decreasing compared to 2019, while the share of students studying on a contractual basis is increasing.

Responsibility for allocating financial resources for continuous improvement rests with the General Director of the NSCEDI and the Department of Financial and Economic Activities. The annual financial plan includes a cost item for replenishing the material and technical components for the International Training Center. In 2024, the dynamics of growth in financing of educational activities compared to 2019 is more than 2 times. This dynamics of funding growth became possible due to the adoption of new regulations in the field of biosafety and support for researchers.

Conclusions of the EEC on the criteria. Compliant out of 5 standards: fully – 5.

Thus, while conducting an external institutional evaluation, out of 92 accreditation standards, compliance with 82 accreditation standards was established. 6 basic standards and 4 improvement standards have been partially implemented. No non-compliance with standards has been identified.

5. Recommendations for improving the educational activities of the “National Scientific Centre for Especially Dangerous Infections named after Masgut Aikimbaev” of the Ministry of Health of the Republic of Kazakhstan:

- 1) To inform students about the expected final outcomes of training according to the Kirkpatrick model or exclude it as a form of training (1.3.2.)
- 2) To involve key stakeholders in the development of the mission and learning outcomes (1.4.1., 1.4.2)
- 3) To objectively evaluate practical skills, develop checklists (3.1.2)
- 4) To bring the system for documenting the educational process in accordance with LSI on additional education (order No. 303 of December 21, 2020) (3.2.1)
- 5) To improve the educational process by introducing new assessment methods
- 6) The journal for issuing certificates of advanced training should be brought into compliance with the requirements of the order for issuing documents of strict reporting (3.1.3)
- 7) To develop “Regulations on the organization of the educational process of additional education” (3.2)
- 8) Teachers involved in the educational process undergo advanced training in pedagogy in accordance with Order No. 305 “On approval of the nomenclature of specialties and specializations in the field of healthcare, nomenclature and qualification characteristics of positions of healthcare workers” dated December 21, 2020, Annex 3 (5.2)
- 9) To provide students with access to Internet resources (websites), equip a computer class with 3-4 seats.) (6.3.1)
- 10) To confirm with documents the evaluation of the final learning outcomes (7.1.2)
- 11) To involve stakeholders (employers and other external stakeholders) in the process of monitoring and evaluating EP (7.2.7)
- 12) To develop a system for monitoring the final learning outcomes (8.1.1)

6. Recommendation to the ECAQA Accreditation Council

Members of the EEC established the compliance of the “National Scientific Centre for Especially Dangerous Infections named after Masgut Aikimbaev” of the Ministry of Health of the Republic of Kazakhstan with the Standards of Institutional Accreditation of Organizations of Additional and Non-Formal Education (CPD) and came to a unanimous opinion to recommend the ECAQA Accreditation Council to accredit this organization for a period of **5 years**.

| | | |
|-----------------|--------------------------------|---|
| Chair | Akhmetova Almira Kalikapasovna |  |
| Foreign expert | Urunova Dilbar Makhmudovna |  |
| Academic expert | Ibraeva Gulmira Alpyspaevna |  |
| Expert employer | Dauletova Kamar Samalbekovna |  |
| Expert student | Mukhaliev Yerdan Yerlanovich |  |

Приложение 1.

Институциональный профиль качества и критерии внешней оценки «Национальный научный центр особо опасных инфекций имени Масгута Айкимбаева» Министерства здравоохранения Республики Казахстан (обобщение)

| Standard | Критерии оценки | Количество стандартов | Базовые стандарты/ Стандарты улучшения | Оценка | | |
|----------|--|-----------------------|---|-------------------------|------------------------|------------------|
| | | | | Полностью соответствует | Частично соответствует | Не соответствует |
| 1. | МИССИЯ И КОНЕЧНЫЕ РЕЗУЛЬТАТЫ | 9 | 7/2 | 5/1 | 2/1 | |
| 2. | ОБРАЗОВАТЕЛЬНЫЕ ПРОГРАММЫ | 13 | 9/4 | 9/4 | | |
| 3. | ОЦЕНКА КОМПЕТЕНЦИЙ СЛУШАТЕЛЕЙ И ДОКУМЕНТАЦИЯ | 10 | 7/3 | 5/2 | 2/1 | |
| 4. | СПЕЦИАЛИСТЫ ЗДРАВООХРАНЕНИЯ (ИНДИВИДУАЛЬНОЕ ПРОФЕССИОНАЛЬНОЕ РАЗВИТИЕ) | 11 | 8/3 | 8/3 | | |
| 5. | ПРЕПОДАВАТЕЛИ | 9 | 4/5 | 4/4 | 0/1 | |
| 6. | ОБРАЗОВАТЕЛЬНЫЕ РЕСУРСЫ | 15 | 10/5 | 9/5 | 1/0 | |
| 7. | ОЦЕНКА ПРОГРАММ ДОПОЛНИТЕЛЬНОГО И НЕФОРМАЛЬНОГО ОБРАЗОВАНИЯ | 10 | 5/5 | 4/4 | 1/1 | |
| 8. | ОРГАНИЗАЦИЯ | 10 | 7/3 | 7/3 | | |
| 9. | НЕПРЕРЫВНОЕ УЛУЧШЕНИЕ | 5 | 5/0 | 5/0 | | |
| | Итого: | 92 | 62/30 | 56/26 | 6/4 | |
| | | | | 92 | | |

Список документов, изученных членами ВЭК в рамках проведения внешней оценки
ННЦООИ

| № | Наименования документов | Количество |
|-----|---|------------|
| 1. | Утвержденные образовательные программы | 19 |
| 2. | Рецензии на образовательные программы | 19 |
| 3. | Акты внедрений | 5 |
| 4. | Отраслевые рамки | 1 |
| 5. | Договор с физическими лицами | 3 |
| 6. | Утвержденные билеты | 5 |
| 7. | Банк тестов | 1 |
| 8. | Журнал учета посещаемости и успеваемости слушателей | 5 |
| 9. | Зачетная ведомость повышения квалификации | 5 |
| 10. | Журнал регистрации выдачи свидетельств и сертификатов | 1 |
| 11. | Расписание циклов | 1 |
| 12. | Положение об образовательном процессе | 1 |
| 13. | Политика приема слушателей | 1 |
| 14. | Публикации за последние 5 лет | 1 |
| 15. | Сертификаты участия в научных конференциях | 5 |
| 16. | Приказы по зачислению на обучение | 1 |
| 17. | Грантовые заявки | 1 |
| 18. | Анкеты слушателей | 5 |
| 19. | Протоколы Ученого совета | 3 |
| 20. | Приказы о зачислении и отчислении слушателей | 1 |