



PROJECTS OVERVIEW OF MEDICAL CLUSTERS

TOP-10 PROPOSAL
OF UKRAINIAN CLUSTER ALLIANCE
FOR INTERNATIONALIZATION
OF THE NATIONAL CLUSTERS AND SMEs SERIES



UKRAINIAN
CLUSTER
ALLIANCE

FOREWORD:

All medical clusters in Ukraine have united in the Resource Center of the Ukrainian Cluster Alliance to develop the health care system of Ukraine, introduce innovations, and new methods of diagnosis and treatment, and cooperate within Ukraine and with the whole world. The main projects are aimed at increasing stability of the system and future reconstruction, development of simulation training, and all aspects of rehabilitation – from production to innovative methods of rehabilitation. The new strategy of medical clusters of Ukraine offers 7 major initiatives:

Project N 1: Creation of innovative rehabilitation centers for people affected by the war

<p>Participants</p>	<p><u>Ukrainian side:</u> Ministry of Health, 6 regional military administrations Ministry of Education and Science, Ministry of Social Policy, Ministry of Defense, Ministry of Internal Affairs, Fund for Social Protection of Persons with Disabilities.</p> <p><u>EU and Turkish side:</u> European Clusters Alliance, network of Turkish rehabilitation centers Romatem, other innovation rehabilitation centers.</p>
<p>Market Problem</p>	<p>Due to the war in Ukraine, the number of wounded defenders, as well as civilians (adults and children), and persons with disabilities, who need provision of rehabilitation services, acceleration of referrals to rehabilitation services, and obtaining or renewal of individual rehabilitation programs, is increasing.</p> <p>Despite the existing extensive system of health care institutions and the provisions regulated by law in Ukraine on rehabilitation services for people affected by the war and persons with disabilities, we observe a significant lack of resources: financial, administrative, institutional, and human.</p> <p>Creation of regional innovative rehabilitation centers with introduction of world standards of medical and social rehabilitation will contribute to restoration of physical and psychological health of people affected by russian armed aggression.</p>
<p>Objectives</p>	<p>The general goal is to contribute to provision of high-quality medical and social rehabilitation of the military personnel and the civilian population by creating 6 regional innovative rehabilitation centers for people injured as a result of russian armed aggression with introduction of world standards of rehabilitation and medical support for patients.</p> <p>Tasks:</p> <ul style="list-style-type: none"> • Conducting engineering and technical studies and general construction works on state, communal or private properties selected for location of rehabilitation centers, equipping material and technical base. • Increasing the level of professional competence of specialists of multidisciplinary teams of regional innovative rehabilitation centers for people injured as a result of russian armed aggression. • Organization and implementation of an information campaign for the target audience of the project.

Activities	<ul style="list-style-type: none"> • Equipping material and technical base of 6 regional innovative rehabilitation centers for people injured as a result of russian armed aggression. • Organization and conduct of training courses and advanced training courses for specialists of multidisciplinary teams in Ukraine and abroad. • Development of a comprehensive content marketing strategy for promoting the services of innovative rehabilitation centers for people affected by russian armed aggression.
Outcomes	<ul style="list-style-type: none"> • 6 regional innovative rehabilitation centers for people injured as a result of russian armed aggression are equipped with modern rehabilitation equipment. • The level of qualification of specialists in multidisciplinary teams is increased. • The level of awareness of the target audience about provision of rehabilitation services in innovative rehabilitation centers for people injured as a result of russian armed aggression is increased.
Period/Budget	2 years / 12 million euros.

Project No. 2: Social and psychological rehabilitation in regional innovative rehabilitation centers for people affected by russian armed aggression. Scaling and renovation of existing rehabilitation

Participants	<p><u>Ukrainian side:</u></p> <p>Ministry of Health, 6 regional military administrations Ministry of Education and Science, Ministry of Social Policy, Ministry of Defense, Ministry of Internal Affairs, Fund for Social Protection of Persons with Disabilities, Giunti Psychometrics Ukraine, Ukrainian Academic University.</p> <p><u>EU side:</u> European Clusters Alliance, GIUNTI O.S.</p>
Market problem	<p>Our society has faced the reality of war and its dire consequences. The war changes the quality of their lives for a long time, or even forever. Combat can result in disability, which often leads to unemployment, depression, loss of motivation, post-traumatic stress disorder (PTSD), etc. Returning from the war, the defenders, as well as the civilian population, find themselves in a completely different world, where there are no explosions, shootings, or premature death. One of the most important tasks facing society is the psychological rehabilitation of people injured as a result of russian armed aggression. The lack of adequate rehabilitation has a significant impact on the fate of people who have faced war. Provision of comprehensive psychological diagnostic services, education and information, consultations, support, accompaniment, psychotherapy, and group work in regional innovative rehabilitation centers for people affected by the war, as well as introduction of world standards of psychodiagnostic and medical support of the civilian population in existing regional rehabilitation institutions, which feel a lack of resources, will contribute to restoration of psychological health of the population and expansion of services of competitive health care institutions.</p>
Objectives	<p>The general goal is to promote preservation and restoration of people's mental health by providing high-quality social and psychological rehabilitation in 6 regional innovative rehabilitation centers for people</p>

	<p>affected by russian armed aggression with introduction of world standards of psychodiagnostic and medical support for children and adults; scaling and renovation of existing regional rehabilitation facilities by expanding the range of services within the framework of public-private partnership and cross-sectoral cooperation.</p> <p>Tasks:</p> <ul style="list-style-type: none"> • Organization of the process of providing social and psychological rehabilitation services in 6 regional innovative rehabilitation centers for people injured as a result of russian armed aggression; expansion of the range of services by introducing world standards of psychodiagnostic and psychological support for children and adults in existing regional rehabilitation institutions. • Increasing the level of professional competence of specialists of multidisciplinary teams – providers of socio-psychological rehabilitation services – in regional innovative rehabilitation centers for people injured as a result of russian armed aggression and existing rehabilitation institutions. • Organization and implementation of an information campaign for the target audience of the project.
Activities	<ul style="list-style-type: none"> • Introduction of psychological diagnostics, education and information, consultation, support and accompaniment, psychotherapy, group work, clinical tests, and semi-structured methods for comprehensive diagnosis of examined different age groups in 6 regional innovative rehabilitation centers for people injured as a result of russian armed aggression and existing rehabilitation facilities. • Organization and conduct of training courses and advanced training courses for specialists of multidisciplinary teams in Ukraine and abroad. • Development of a comprehensive content marketing strategy for promotion of services in innovative rehabilitation centers for people affected by russian armed aggression and existing rehabilitation institutions.
Outcomes	<ul style="list-style-type: none"> • The process of providing social and psychological rehabilitation services is organized in 6 regional innovative rehabilitation centers for people affected by russian armed aggression and existing rehabilitation institutions. • The level of qualification of specialists in multidisciplinary teams is increased. • The level of awareness of the target audience about provision of rehabilitation services in innovative rehabilitation centers for people affected by russian armed aggression and existing rehabilitation institutions is increased.
Period/ Budget	<ul style="list-style-type: none"> • 2 years / 2 mln euros.

Project 3: Ukrainian production of 3D titanium products for medical purposes, namely: high-quality endoprostheses of human hip and knee joints, and other original 3D products for medicine

<p>Participants</p>	<p><u>Ukrainian side</u>: Ukrainian Cluster Alliance, Medical Cluster, KAMVIR Medical Products Manufacturers Cluster, Chamber of Commerce and Industry of Ukraine, parliamentary committees, Ministry of Economy, Ministry of Strategic Industries of Ukraine.</p> <p><u>EU side</u>: FPPP (Poland), CzechInno (Czech Republic), CIMES (France), European Clusters Alliance, UNIDO.</p>
<p>Market Problem</p>	<p>The available market is developed by 10%. According to world statistics, people's need for endoprosthesis is about 1,000 sick and injured people for every 1 million people per year. That is, the need of the population of Ukraine is about 40,000 operations per year. Until 2023, only about 10,000 endoprosthesis per year were performed in Ukraine:</p> <p>In 2023, the number of such operations will also be less than 10,000, due to the war and the economic situation in the country. Thus, the number of patients increases every year. So, the market of endoprostheses in Ukraine is from 100 thousand to 120 thousand operations per year. There is also a huge need for custom affordable 3D products to treat wounded soldiers.</p>
<p>Objectives</p>	<p>General purpose – to move the processes of policy formation in Ukraine to the level of the best practices and EU standards:</p> <ul style="list-style-type: none"> • Establish benchmarks for Ukraine in industrial policy. • Align approaches and practices in Ukraine with the best EU practices. • Determination of a roadmap for the necessary changes in Ukraine in development of industrial policy and strategies. • The purpose of the KAMVIR project: solving social issues in Ukraine by implementing the necessary modern technologies in state, public, and private structures. <p>Goals of the KAMVIR project:</p> <ol style="list-style-type: none"> 1. To ensure the need of Ukrainians for modern, high quality, and affordable endoprostheses and other orthopedic devices. 2. To produce "added value" at the expense of production and thus to develop the domestic economy. 3. At the expense of exports, to ensure receipt of significant foreign exchange funds in Ukraine. 4. To provide an additional incentive for development of science and production in Ukraine. 5. To involve modern advanced technologies in production.
<p>Activities</p>	<ul style="list-style-type: none"> • Exchanges and visits with 3 EU target countries (Czech Republic, Poland, and France). • Research of policy-making processes / comparative analysis. • Preparation of a roadmap of changes in Ukraine. • Final reporting and distribution/communication campaign.

Outcomes	<ul style="list-style-type: none"> • Much better coordination and cooperation between the organization's business support service and government bodies in Ukraine regarding industrial policy. • Increasing efficiency of policy-making (quantity and quality of the new law of supply). • Improving the process of industrial dialogue between the EU and Ukraine. • New cooperation initiatives between participating countries, supported by their governments.
Period and Budgets	15 months / 2.1 mln euros.

Cases to be scaled up:

The reasons for printing with metals are very strong, as some 3D-printed parts have already caught up, and some have even surpassed those produced by traditional methods.

Traditional production of metals and plastics is very wasteful – in aircraft industry, for example, up to 90% of materials go to waste. Output of products in some industries is no more than 30% of the material used.



3D printing with metals consumes less energy and reduces the amount of waste to minimum. In addition, finished 3D-printed product can be up to 60% lighter, compared to a milled or cast part. Our choice is osteobiointegrated 3D manufacturing technology of high quality, competitive domestic products in the field of orthopedics.

Comparative characteristics of metal products made by traditional methods and by the latest 3D technologies:

- High-quality mechanical processing: the product or part is gradually removed from everything superfluous: by cutting, beating, and drilling.
- 3D technology: a gradual process of adding raw material and building up the required shape of the product or individual part.
- The amount of material waste with traditional manufacturing technologies can be 70% or more, and with 3D printing it is within 3%.
- A large number of various parts and fasteners are required for manufacturing of some nodes with traditional technologies, and with 3D printing, the finished product is printed monolithically.



PROJECT 4: Creating a network of training centers for rehabilitation specialists and multidisciplinary rehabilitation teams

<p>Participants</p>	<p><u>Ukrainian side:</u> Ukrainian Cluster Alliance, RC "Medical Clusters", Vinnytsia Cluster of Instrumentation and Automation, NGO "Ukrainian Society of Physical and Rehabilitation Medicine", Department of Physical and Rehabilitation Medicine of National Pirogov Memorial Medical University, Vinnytsya; Center for Medical Rehabilitation and Sports Medicine, Vinnytsia; Department of Health of Vinnytsia Oblast, Lviv Oblast; Medical Center "Norimed Plus" Lviv; Lviv Medical Business Cluster.</p> <p><u>EU Side:</u> European Clusters Alliance, ESPRM, UEMS PRM Board, ISPRM.</p>
<p>Market Problem</p>	<p>Due to the war in Ukraine, the need for rehabilitation services is developing rapidly and will continue to grow. Shortage of personnel, insufficient quality, and speed of training of rehabilitation specialists are among the main reasons for unsatisfactory quality of rehabilitation services in the context of the healthcare system reform in Ukraine. Qualitative and quantitative indicators of the industry do not meet the needs of Ukraine, despite the desire to meet European and international standards. Most rehabilitation specialties are new to Ukraine, and there is a lack of experience of working in multidisciplinary rehabilitation teams. Internships abroad are mostly spontaneous and cannot solve problems at the systemic level, and there is a lack of control over the quality of experience gained in its transfer and implementation. There are no places of concentration of knowledge and skills in rehabilitation with the possibility of their unimpeded dissemination and guaranteed effective application. Creation of a network of training centers for training and professional development of rehabilitation specialists is intended to solve these problems at the systemic level.</p>

Objectives	<ul style="list-style-type: none"> • Improve the quality of rehabilitation services in Ukraine by training multidisciplinary teams and monitoring the quality of rehabilitation specialists based on European standards and international experience.
Activities	<ul style="list-style-type: none"> • Establishment of training centers for education and clinical training of multidisciplinary rehabilitation teams.
Outcomes	<ul style="list-style-type: none"> • Ability to train the entire multidisciplinary/multi-professional rehabilitation team at the same time. According to the requested profile. • Possibility of providing consulting and training services in rehabilitation in Ukraine without the need to go abroad for training. A quick exchange of experience and consultations. • Training support for rehabilitation service providers in partnership with international training centers. • Improving the quality of professional education in the field of rehabilitation according to European and international standards. • Improving the quality of rehabilitation services according to European and international standards. • Ensuring continuous professional development of rehabilitation specialists based on European and international standards. • Certification of training programs, training centers, and specialists. • Within two years – creation of three centers in 3 regions of Ukraine. • Exchange of experience between the centers and increased efficiency of educational and training services, attracting own resources to increase capacity at the system level.
Period/Budget	1 year / 970 thousand euros (one training center in the central region of Ukraine).

Project N 5: Re 5 HUB project – creation of a network of extended (secondary) rehabilitation centers

Participants	<p><u>Ukrainian side</u>: Ukrainian Cluster Alliance (RC Medical Cluster), International Medical Cluster, Veteran HUB, Ministry of Defense.</p> <p><u>EU side</u>: European Clusters Alliance.</p>
Market Problem	Because of the war in Ukraine, there is a great need for extended rehabilitation (this is the process of continuing rehabilitation measures after the end of the main course of treatment), which is necessary if the patient has lost ability to work after an injury, surgery, or illness and has received disability.
Objectives	<p>The overall goal is to create a single automated network of regional innovation rehabilitation centers with introduction of world standards of medical and social rehabilitation, digitalization, and coordination of processes of providing medical care, which in turn consists of services, including rehabilitation.</p> <p>Task: medical care should become Accessible-Systematic-Targeted-Addressable.</p>

Activities	<ul style="list-style-type: none"> • Creation of a unified register of persons injured as a result of the armed aggression. • Creation of a unified analytical and advisory center with branches in regions and mobile units for medical logistics and expertise. • Development of methods of implementation of innovative solutions and digitization of rehabilitation services (E-health). • Implementation of leasing and outsourcing mechanisms in provision of extended rehabilitation services.
Outcomes	<ul style="list-style-type: none"> • The rehabilitation ecosystem is a component of the civil protection system (maximum rational use of all available resources and potential, rapid implementation of digitalization, and the latest methods).
Period/Budget	5 years / 20 million euros.

Project N 6: Creation of an innovative rehabilitation platform

Participants	<p><u>Ukrainian side</u>: Ministry of Health, Ministry of Social Policy, Ministry of Defense, Ministry of Internal Affairs, Ministry of Veterans. Fund for Social Protection of Persons with Disabilities.</p> <p><u>EU side</u>: European Clusters Alliance.</p>
Market Problem	Due to the war in Ukraine, the number of wounded defenders, as well as civilians (adults and children), and persons with disabilities, who need rehabilitation services, is increasing. In addition, with the growing number of rehabilitation services and private rehabilitation centers, it is difficult for the affected people to find the necessary rehabilitation center with the appropriate direction of work, assess its capabilities, communicate, and receive consultation and the necessary information.
Objectives	The general goal is to contribute to increasing awareness of the injured people and their families in rehabilitation services on the territory of Ukraine (in the future also throughout the world) about the possibilities of new methods and approaches to rehabilitation. And for rehabilitation centers, it is an opportunity to quickly communicate with victims who need rehabilitation, spread information about their services, assess condition of victims and create individual rehabilitation plans and monitor their implementation.
Activities	<ul style="list-style-type: none"> • Conducting a survey among doctors of rehabilitation departments and patients about information needs for creating terms of reference for programmers. • Selection of programmers for implementation of this platform. • Creation of a multifunctional Internet platform "REHABILITSIA", filling it with the necessary information. • Promotion of the platform among rehabilitators and the public. • Functioning of the platform and growth of its participants. Web application development
Outcomes	<ul style="list-style-type: none"> • Search for information on rehabilitation for victims throughout Ukraine is simplified. • All rehabilitation centers, and providers of rehabilitation services are on the same web-resource, their level and capacity of rehabilitation services are verified and correspond to evidence-based medicine. For

	a victim undergoing rehabilitation, rehabilitator can create his rehabilitation plan and monitor its implementation.
Period/Budget	1 year / 100,000 euros.

Project No. 7: Creation of "Be SAFE" innovative training centers

Participants	<p><u>Ukrainian side:</u> Ukrainian Cluster Alliance, Resource Center "Medical Clusters", Medical Clusters of Ukraine, Ministry of Health, Ministry of Education and Science, Ministry of Defense, Ministry of Veterans, Ministry of Internal Affairs, committees of the parliament.</p> <p><u>EU side:</u> European Clusters Alliance, Malta Rescue Service, Lublin Center for Simulation Medicine, SMURD.</p>
Market Problem	The civilian population is not ready to act in emergency and war conditions and suffers as a result of massive attacks and bombings of Ukrainian cities. People die who could have survived no matter how they were taught how to behave.
Objectives	<ul style="list-style-type: none"> To create a system of training the civilian population, starting with children, employees of communal enterprises and organizations, the poor, IDPs, and other segments of the population by creating innovative centers for training the population for actions in emergency and war conditions, which will increase survivability of people in the event of mass rocket attacks and injuries. Increase the interest and practicality of teaching such courses (premedical care in particular) due to the innovative component and practicality of teaching.
Activities	<ul style="list-style-type: none"> Selection of IT companies, production of terms of reference, and creation of software with training situations using VR technologies. Selection and training of instructors and their certification in various directions for the work of the center. Selection of a room (or building) and equipping it with technical equipment and mannequins according to situational tasks. Cooperation with local government organizations to involve employees of communal enterprises and schoolchildren in training. Creation of a proposal for business for further payback of the center outside the project. Communication company about the activities of the center.
Outcomes	<ul style="list-style-type: none"> 3 innovative training centers for training the population "BE SAFE" are built – Rivne, Dnipro, Kharkiv. A team of instructors is formed and certified according to TSSS and BLS protocols. A training system for civil utility companies, schools, and other organizations is developed together with the local government. Developed training programs for business. 80% of the region's population is covered by communication campaign about the center's activities.

Period and Budgets	2 years / 3 million euros.
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