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Prospects for modern cardiac rehabilitation: synergy of perspectives among Healthcare professionals and specialists

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Abstract. In the context of a full-fledge war in Ukrainian, the local healthcare system is operating under significant strain, especially in the sphere of rehabilitation services. This situation creates a demand for new approaches to cardiac rehabilitation reflected in the new version of the Law of Ukraine "On Rehabilitation in the Healthcare" (2020). The modern concept of cardiac rehabilitation presumes the transition from short-term post-acute cardiovascular programs to a continuous model of lifelong cardiovascular health management. According to the World Heart Federation Roadmap recommendations (2026), key components of effective cardiac rehabilitation are considered to be a multidisciplinary approach, consisting of timely referral of patients, comprehensive clinical assessment, management of cardiovascular risk factors, psychosocial support, continuous monitoring of treatment outcomes, and implementation of modern healthcare models, including telerehabilitation and digital health techniques. The implementation of the above scenarios may improve access to rehabilitation services, increase patients' functional capabilities and life quality, and reduce the risk of recurrent cardiovascular events. The objective of the study was to analyze a dataset of contemporary approaches to cardiac rehabilitation and to assess the feasibility of their planting in the wartime Ukrainian healthcare system.

Keywords: cardiac rehabilitation; cardiovascular diseases; multidisciplinary approach; telerehabilitation; quality of life.

Introduction

The wartime Ukrainian healthcare system is struggling to deliver decent rehabilitation services to the population that does not take direct part in the hostilities and nevertheless featuring high trauma incidence. These circumstances can indirectly influence the prevalence of cardiovascular pathologies, and therefore the need for provision of appropriate rehabilitation care. According to the Law of Ukraine "On Rehabilitation in the Healthcare" (2020) [1], to achieve the optimal level of the physical component in sick individuals, a set of individualized measures for suitable social integration and everyday activities should be developed, including those related to interaction with the environment and personal independence. According to various sources, some 100–120 thousand people require direct cardiac rehabilitation in Ukraine. To cover largest possible number of such patients, it is necessary to widely implement modern methodological approaches to cardiac rehabilitation, as the one remains safe service featuring low risk of complications, offering such benefits as improved cardiovascular function, reduced hospitalization incidence, and better quality of life. One step in this direction is the implementation of the project "Rehabilitation in Ukraine" [2].

The aim of the study: to analyze modern literary sources on the aspects of implementing cardiac rehabilitation methods in modern conditions.

Materials and Methods

While searching the required materials for writing the article, we used PubMed, Google Scholar, Scopus, Web of Science databases, the electronic resources of the V. I. Vernadskyi National Library of Ukraine, the National Health Service (NSZU) website, and electronic archives

of domestic medical publications, and further processed the results using bibliosemantic and systematic analysis methods. We regarded sources published in the last 5 years our first choice.

Results

In the most common definition of recent decades, cardiac rehabilitation is considered a controlled list of interventions recommended for patients recovering from cardiovascular events. The interventions are emphasized to be aimed at reducing psychological and physiological stress, the risk of mortality, prevention of recurrent hospital admissions, and improvement of cardiovascular function for better quality of life. However, today, the modern paradigm of medicine is undergoing a fundamental transformation, shifting the focus from short-term treatment of acute conditions to long-term prevention and health maintenance, which requires a fresh glance at cardiac rehabilitation (CR) (Fig.1).

It is generally accepted that personalized cardiac rehabilitation programs are divided into 3 major segments: inpatient, outpatient, and long-term care. In the final phase, the emphasis is made on self-control, regular physical exercises, and continuous medical care for keeping the cardiovascular system safe [3]. The change of paradigm consists in certain modernization of approaches to planning, primarily in the third segment. In fact, part of the second segment and completely whole third one are considered an integral part of secondary prevention in management of almost all cardiovascular diseases, as they result from programs conceptually developed by multidisciplinary teams of specialists under the guidance of certified rehabilitation physicians (RP), thus presuming further management of risk

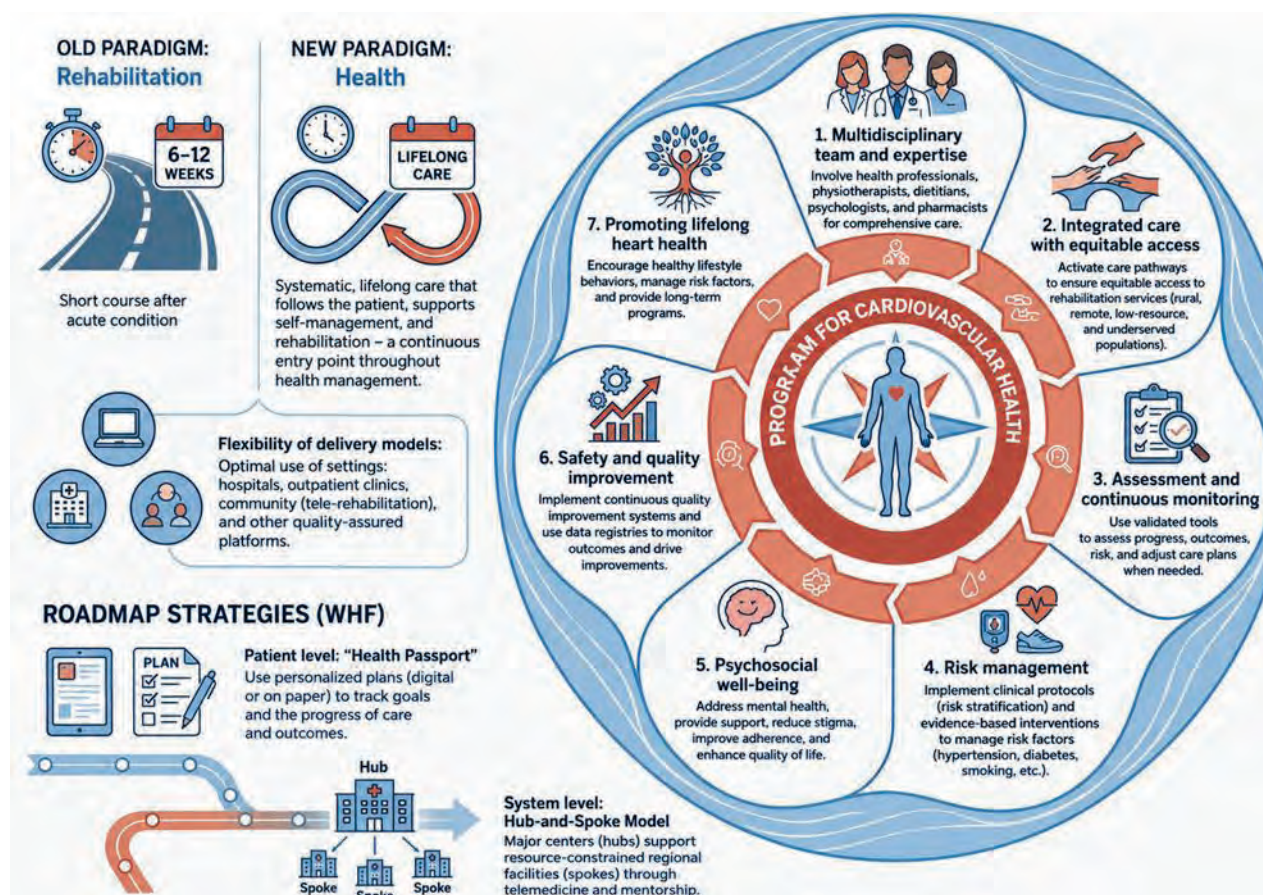


Fig. 1. Integrated model of a modern cardiac rehabilitation program: the transition from short-term prevention to systematic, lifelong patient management (Author's drawing courtesy of Notebook LM, Google AI Plus; developed by Google LLC (generated on July 28, 2026)).

factors, lifestyle changes, and long-term follow-up of serious cardiovascular events [4]. In practical terms, this makes kind of roadmap that describes the objective of cardiac rehabilitation efforts, which, in the opinion of the World Heart Federation (WHF), contribute to achieving the optimal level of sufferer's interaction with the environment, social integration, and independence of patients [5] (Fig. 2)

Discussions

So, the most important aspect of the future strategy is considered integrated CR model grounded on new organizational platform modernized in terms of changing social administration, personalized comprehension of the problems and aggregated recommendations by patients.

Beyond that, within the above CR model, one should pay attention to the fact that the recommendations emphasize the essential role of physical exercise:

- Exercise as "medicine": The exercise is considered a full-fledged therapeutic tool, comparable in efficacy to antihypertensive medicines [6, 7].
- Medicinal strategy combined with rehabilitation. Taking medicines for weight loss (GLP-1) must be ac-

companied by strength exercises to counter skeletal muscle loss [8, 9].

- General diabetes and metabolic control: Physical exercises increase muscle sensitivity to insulin, which works in synergy with antidiabetic medicines [1-12].
- Intensive lipid lowering to target figures in case of various pathologies: The standard is administration of multiple classes of medicines to achieve target LDL-C figures [13].
- Monitoring blood pressure and its changes during and post exercise [14].
- It should be borne in mind that physical exercise alone, even combined with a diet modification, will not be able to contribute to normalization of blood pressure and keeping the figures normal within 24-hour in case of high initial blood pressure readings [15, 16].
- Use of digital or hard "cardiovascular health passports" allowing patients to simultaneously track their medication schedule and physical activity for achieving goals [17].

In the future, it's quite possible to expect widespread implementation of the following new patient care techniques:

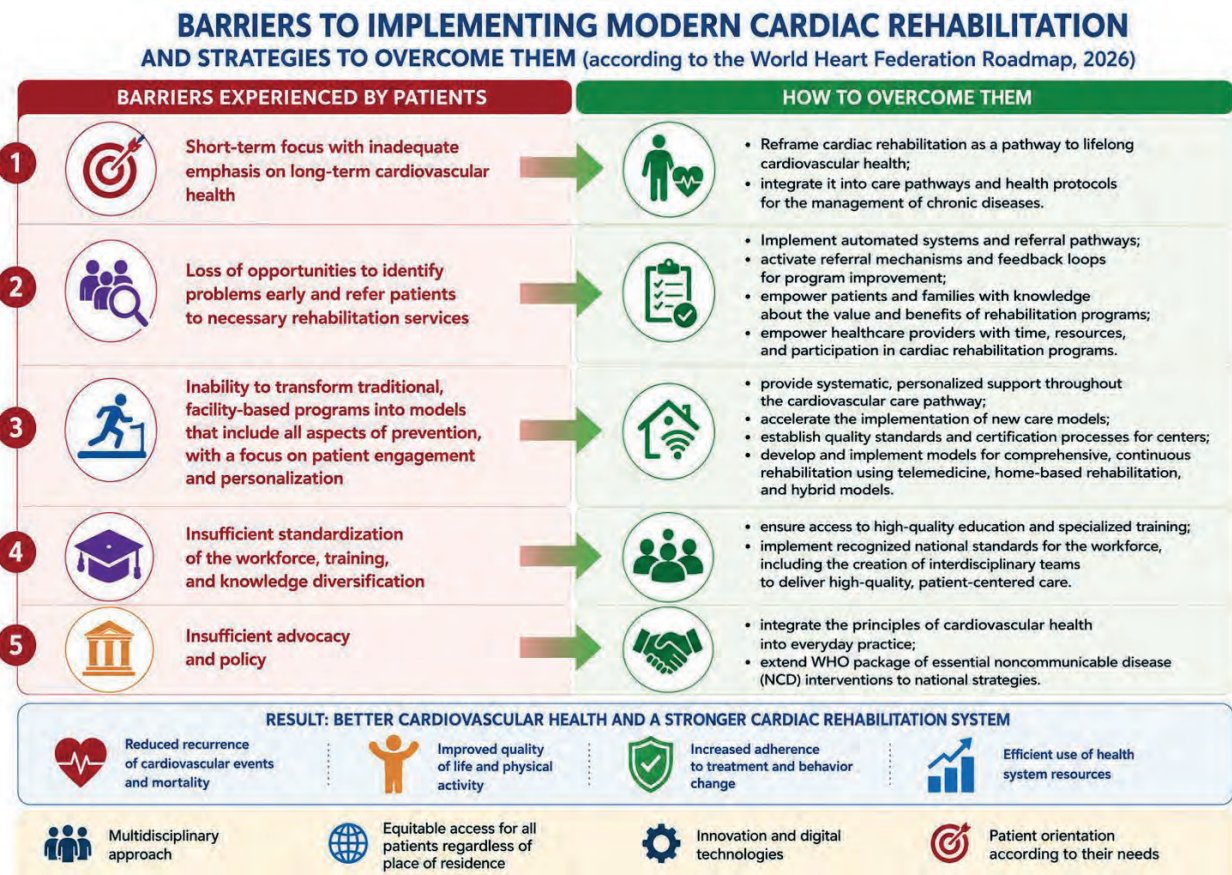


Fig. 2. Strategic solutions for overcoming five interconnected barriers that patients face when planning rehabilitation activities (Author's drawing courtesy of Chat GPT, Open AI (generated on July 31, 2026)).

• Hybrid models of rehabilitation programs: combining in-person visits with remote monitoring via wearables to allow maintaining exercise intensity and real-time monitoring of the patient's condition [18].

• Application of artificial intelligence (AI) for rehabilitation planning: it is considered a tool for personalizing training plans and predicting risks, although its widespread instrumentation still requires strict regulation [13].

New approaches will ensure the systemic CR nature: personalization, process improvement, patient-centeredness, changing terminology (parlance), and partnership [5]. All above measures will contribute to a paradigm shift from short-term programs to lifelong health management and ensuring cost-effective CR programs in general terms [22].

Conclusions

Modern cardiac rehabilitation is an integral part of

secondary prevention of cardiovascular diseases which should be considered a continuous, personalized process aimed at long-term reduction of cardiovascular risk, maintaining functional capacity of patients, and better life quality. The implementation of this concept in accordance with the recommendations of the World Heart Federation opens up new opportunities for better effectiveness of rehabilitation care with due account to current challenges to the Ukrainian healthcare system.

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Conflict of interest

The author declares no conflict of interest.

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Перспективи сучасних методів кардіореабілітації: синергія думок спеціалістів та фахівців у сфері охорони здоров'я

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Анотація. В умовах повномасштабної війни система охорони здоров'я України функціонує під значним навантаженням, особливо в наданні реабілітаційних послуг. Така ситуація підкреслює необхідність впровадження нових підходів до кардіологічної реабілітації, що передбачалось з прийняттям Закону України «Про реабілітацію у сфері охорони здоров'я» (2020 р.). Сучасна концепція кардіологічної реабілітації передбачає перехід від короткотривалих програм після гострих серцево-судинних подій до безперервної моделі довічного управління серцево-судинним здоров'ям. Відповідно до рекомендацій World Heart Federation Roadmap (2026) ключовими

компонентами ефективної кардіологічної реабілітації є мультидисциплінарний підхід, своєчасне направлення пацієнтів, комплексна клінічна оцінка, управління серцево-судинними факторами ризику, психосоціальна підтримка, безперервний моніторинг результатів лікування та впровадження сучасних моделей надання медичної допомоги, зокрема телереабілітації та цифрових технологій охорони здоров'я. Впровадження цих підходів може покращити доступ до реабілітаційних послуг, підвищити функціональні можливості та якість життя пацієнтів, а також знизити ризик рецидивів серцево-судинних подій. Метою було проаналізувати сучасні дані щодо оновлених підходів до кардіологічної реабілітації та оцінити доцільність їх впровадження в українській системі охорони здоров'я в умовах воєнного часу.

Ключові слова: кардіологічна реабілітація, серцево-судинні захворювання, мультидисциплінарний підхід, телереабілітація, якість життя.