
ACTUAL TRENDS IN CARDIAC REHABILITATION: FROM HOSPITAL CARE TO PRIMARY CARE

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Cardiovascular diseases are in the leading cause of death group in most European countries, accounting for around 40% of all deaths (in European countries), obliging to a reflection and debate about its actual status and future strategies and developments. Cardiac Rehabilitation is a comprehensive, multidisciplinary, multiprofessional, cost-effective, individualized, multi-strategy intervention (including health promotion, disease prevention, therapy, rehabilitation, retraining). It comprises patients with cardiac events, subacute/chronic heart disease, cardiac surgery, oncological disease, frailty, cardiovascular risk factors,...; in a symptomatic or asymptomatic condition; often with functional impairment for ADLs and other laser or occupational activities. It's a structured, patient centered, quantified, monitored program, with medical referral and prescription supported by safety and quality criteria, based on the scientific level evidence (IA), determined among the main medical and scientific institutions of the specialties involved - European Society of Physical and Rehabilitation Medicine (PRM), UEMS PRM Section, American Heart Association, European Society of Cardiology, European Association for Cardiovascular Prevention & Rehabilitation, International Council of Cardiovascular Prevention and Rehabilitation (ICCPR), National PRM and Cardiology Scientific Societies. There are different Cardiac Rehabilitation Models around the world, with facilitators and barriers. Cardiac Rehabilitation is undergoing a significant transformation in low-risk cardiac patients, shifting from traditional hospital-based settings to more accessible, patient-centered models and patient's engagement, integrated into Primary Care (in outpatients Phase III or Phase IIa), and in Home-Based Programs, often in hybrid programs. This evolution is supported by clinical evidence and driven by technological advancements, policy changes, and a growing emphasis on personalized care, with multidisciplinary and multiprofessional Cardiac Rehabilitation teams, working together to deliver comprehensive and individualized care. This includes, according to the best Clinical Practices, Quality and Patient's Safety, a Physical and Rehabilitation Medicine Physician (Physiatrist) in the Cardiac Rehabilitation team (presential or in telemedicine/telerehabilitation). As well as, interdisciplinarity between Cardiology, PRM and Familiar Medicine (General Medicine Practitioner) and Cardiac Rehabilitation integrated care pathways between hospital settings (in and out-patients), primary care, community care, homebased care in the different health systems. This new trend involves collecting data from wearables and artificial intelligence (AI) to fit Cardiac Rehabilitation to individual clinical needs. Ongoing assessment of patient progress, through continuous monitoring digital tools, allows for timely Cardiac Rehabilitation interventions, programs adjustments and outcomes evaluation. The integration of Cardiac Rehabilitation into Primary Care and Homebased Programs, supported by technological advancements, is enhancing accessibility, equity, personalization, patient engagement and compliance, if safety and quality criteria met. Digital Health Platforms provide remote monitoring,

instructional resources, and real-time communication between patients and healthcare providers, facilitating continuous care and rehabilitation evolution. Wearables and Mobile Apps trace heart rate, blood pressure, respiratory and metabolic parameters, physical activity, exercise (capacity) and adherence to prescribed Cardiac Rehabilitation, giving immediate feedback and raising accountability. AI tools analyze patient data to personalize Cardiac Rehabilitation programs, improving outcomes and patient's commitment. This concerns Digital Literacy to warrant that patients have the necessary skills and resources to utilize digital health tools effectively. This shift not only maintains patient outcomes but also contributes to the sustainability of healthcare systems by reducing costs and hospital readmissions, improves high risk complex patients to have access to Hospital Cardiac Rehabilitation Programs and decreases geographical barriers. Cardiac Rehabilitation programs in Primary-care and Home-based-care can reduce operating costs associated with hospital-based services, making it more affordable. Perceived self-efficacy in patients after Cardiac Rehabilitation programs is very important, throughout outcomes and experiences measures. Further studies should be designed to establish the best strategy for patients, Cardiac Rehabilitation, Hospital-based and Primary-based continuum of care in integrated care pathways and for health systems.

Keywords: Cardiac-rehabilitation, Telerehabilitation, PRM, Primary, Care, PROMS.

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