7. Resuscitation Council UK. Guidelines. URL: https://www.resus.org.uk
8. Health and Safety Executive (HSE). First aid at work. URL: https://www.hse.gov.uk/firstaid/
9. ISO 9001:2015 Quality Management Systems. URL: https://www.iso.org/standard/62085.html

DOI https://doi.org/10.36059/978-966-397-640-2-33

MEDICAL AND SOCIAL RATIONALE FOR TELEMONITORING IN CHRONIC HEART FAILURE AT THE PRIMARY HEALTH CARE LEVEL

Riabkov Serhii Olexandrovich
Postgraduate Student at the Department of Health Care Management
Shupyk National Healthcare University of Ukraine
Kyiv, Ukraine

Chronic heart failure (CHF) is one of the leading causes of morbidity, disability, and mortality worldwide. According to the European Society of Cardiology, the prevalence of CHF in the general population is approximately 1–2%, while among individuals aged over 70 years it exceeds 10% [1]. The disease is characterized by a progressive course, frequent episodes of decompensation, and a high rate of recurrent hospitalizations, thereby generating a substantial clinical and socio-economic burden. Hospitalizations represent the principal cost driver within healthcare systems and may account for 47% to 92% of the total direct costs associated with the management of CHF [2].

In Ukraine, the relevance of this issue is further intensified by demographic population aging, the high prevalence of arterial hypertension and ischemic heart disease, as well as regional disparities in access to specialized cardiology care. According to the World Health Organization, more than 70% of deaths in Ukraine are attributable to noncommunicable diseases, a substantial proportion of which are cardiovascular conditions [3]. Under these circumstances, primary health care serves as the key level for the long-term management of patients with CHF.

Telemonitoring is defined as an organized system of remote patient surveillance involving the regular transmission of clinical parameters to healthcare professionals for the timely detection of clinical deterioration and therapeutic adjustment. Core monitored parameters typically include body weight as a marker of fluid retention, blood pressure, heart rate, oxygen

saturation, and patient-reported symptoms. A critical component of telemonitoring is the presence of clearly defined clinical response algorithms.

The clinical effectiveness of telemonitoring in CHF remains subject to debate; however, systematic reviews indicate potential benefits. In a Cochrane review, non-invasive telemonitoring was associated with a reduction in all-cause mortality (RR 0.80; 95% CI 0.68–0.94), while structured telephone support demonstrated a reduced risk of death (RR 0.87; 95% CI 0.77–0.98) [4]. In the randomized TIM-HF2 trial, the proportion of days lost due to unplanned cardiovascular hospitalizations and death was 4.88% in the telemonitoring group compared with 6.64% in the usual care group, and annual mortality rates were 7.86 versus 11.34 per 100 patient-years, respectively [5]. Conversely, the Tele-HF and BEAT-HF studies did not demonstrate statistically significant reductions in readmission rates [6, 7]. This variability may be explained by heterogeneity in patient populations, differences in the intensity of clinical support, and the degree of integration of the intervention into existing healthcare systems.

The social dimension of CHF is characterized by a marked decline in patients' quality of life, limitations in physical activity, and a high prevalence of anxiety and depressive disorders [8]. An additional concern is the substantial burden placed on family members and caregivers. Telemonitoring may reduce psychological stress through continuous contact with healthcare providers, improve treatment adherence, and enhance patient self-management. Early detection of signs of decompensation enables outpatient therapy adjustment and the prevention of emergency hospitalizations, which is particularly relevant for rural and remote regions of Ukraine.

From an organizational perspective, telemonitoring at the primary care level implies the integration of remote surveillance into the practice of the family physician. This facilitates a shift from a reactive model of care toward a proactive approach focused on preventing exacerbations. Effective implementation requires standardized clinical protocols, predefined threshold values for monitored indicators, integration with medical information systems, and compliance with personal data protection legislation [9]. In European Union countries, telemonitoring is frequently implemented within structured heart failure management programs involving multidisciplinary teams and established reimbursement mechanisms [1]. In Ukraine, reimbursement of telemedicine services through the National Health Service of Ukraine requires further regulatory development.

The economic feasibility of telemonitoring implementation is assessed using cost-effectiveness analysis and budget impact analysis. According to international methodological recommendations, the incremental cost-effectiveness ratio (ICER) reflects the additional cost per additional unit of clinical benefit, including cost per quality-adjusted life year (QALY)

gained [10]. Systematic economic evaluations demonstrate heterogeneous results depending on the target population and cost structure [11]. The greatest economic benefit is anticipated among high-risk patients with frequent hospitalizations, where prevention of decompensation may offset expenditures on equipment and personnel. Budget impact analysis enables assessment of the financial capacity of the healthcare system to implement such a program over a medium-term horizon [12].

In summary, telemonitoring in CHF demonstrates potential clinical, social, and economic value provided that it is integrated into primary health care with clearly defined response algorithms and sustainable financing mechanisms. The implementation of pilot programs in Ukraine, followed by prospective economic modeling, would generate local evidence on ICER and budget impact, thereby establishing a foundation for broader scale-up.

Bibliography:

1. McDonagh T. A., Metra M., Adamo M. et al. 2021 ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure. *European Heart Journal*. 2021. Vol. 42, № 36. P. 3599–3726. DOI: https://doi.org/10.1093/eurheartj/ehab368

2. Lesyuk W., Kriza C., Kolominsky-Rabas P. Cost-of-illness studies in heart failure: a systematic review 2004–2016. *BMC Cardiovascular Disorders*. 2018. Vol. 18. Article 74. DOI: https://doi.org/10.1186/s12872-018-0815-3

3. World Health Organization. WHO Country Profile: Ukraine. Geneva: WHO, 2024. URL: https://www.who.int (дата звернення: 18.02.2026).

4. Inglis S. C., Clark R. A., Dierckx R. et al. Structured telephone support or non-invasive telemonitoring for patients with heart failure. *Cochrane Database of Systematic Reviews*. 2015. № 10. CD007228. DOI: https://doi.org/10.1002/14651858.CD007228.pub3

5. Koehler F., Koehler K., Deckwart O. et al. Efficacy of telemedical interventional management in patients with heart failure (TIM-HF2). *The Lancet*. 2018. Vol. 392, № 10152. P. 1047–1057. DOI: https://doi.org/10.1016/S0140-6736(18)31880-4

6. Chaudhry S. I., Mattera J. A., Curtis J. P. et al. Telemonitoring in patients with heart failure. *New England Journal of Medicine*. 2010. Vol. 363, № 24. P. 2301–2309. DOI: https://doi.org/10.1056/NEJMoa1010029

7. Ong M. K., Romano P. S., Edgington S. et al. Effectiveness of remote patient monitoring after discharge of hospitalized patients with heart failure (BEAT-HF). *JAMA Internal Medicine*. 2016. Vol. 176, № 3. P. 310–318. DOI: https://doi.org/10.1001/jamainternmed.2015.7712

8. Rutledge T., Reis V. A., Linke S. E. et al. Depression in heart failure: a meta-analytic review. *Journal of the American College of Cardiology*. 2006. Vol. 48, № 8. P. 1527–1537. DOI: https://doi.org/10.1016/j.jacc.2006.06.055

9. Про захист персональних даних: Закон України від 01.06.2010 № 2297-VI. *Відомості Верховної Ради України*. 2010. № 34. Ст. 481.

10. Weinstein M. C., Torrance G., McGuire A. QALYs: the basics. *Value in Health*. 2009. Vol. 12 (Suppl. 1). P. S5–S9. DOI: https://doi.org/10.1111/j.1524-4733.2009.00515.x

11. Pandor A., Thokala P., Gomersall T. et al. Home telemonitoring or structured telephone support programmes after recent discharge in patients with heart failure: systematic review and economic evaluation. *Health Technology Assessment*. 2013. Vol. 17, № 32. P. 1–207. DOI: https://doi.org/10.3310/hta17320

12. Sullivan S. D., Mauskopf J. A., Augustovski F. et al. Budget impact analysis – principles of good practice: report of the ISPOR 2012 Budget Impact Analysis Good Practice II Task Force. *Value in Health*. 2014. Vol. 17, № 1. P. 5–14. DOI: https://doi.org/10.1016/j.jval.2013.08.2291

DOI https://doi.org/10.36059/978-966-397-640-2-34

УПРАВЛІННЯ ЯКІСТЮ МЕДИЧНИХ ПОСЛУГ: СИСТЕМА ВЗАЄМОПОВ'ЯЗАНИХ ЕЛЕМЕНТІВ

Фоміна Єлізавета Василівна
кандидат економічних наук,
доцент кафедри гігієни та соціальної медицини
Харківський національний університет імені В. Н. Каразіна
м. Харків, Україна

Пономарьова Лілія Іванівна
кандидат медичних наук,
доцент кафедри гігієни та соціальної медицини
Харківський національний університет імені В. Н. Каразіна
м. Харків, Україна

Світ якісних продуктів та клієнтоорієнтованих сервісів, яким ми знаємо його сьогодні, не завжди був таким. В XIX та XX столітті попит товарів та послуг настільки перевищував пропозицію, що компаніям було достатньо просто створити новий продукт, а клієнт завжди