



PERSPECTIVES OF TELEMEDICINE TECHNOLOGIES IN CARDIOLOGY

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Currently, cardiovascular diseases are the most common and the World Health Organization classifies them as major causes of mortality worldwide. More than 17.1 million people become ill each year. This situation arises because of the deteriorating global economy, excessive consumption of tobacco and alcohol use, physical and mental strain, and many other factors [1].

Diseases such as coronary heart disease (CHD) and elevated blood pressure (hypertension), if not controlled properly by 2020 will be a major problem for the health sector in most countries, especially Ukraine, Russia, China and parts of sub-Saharan Africa. That is why it is important that telemedicine has become one of the priorities of modern health care, aimed at timely and, where possible, a pre-nosological diagnosis at all points and parts of the country, which will reduce the percentage of cardiovascular disease to improve the overall health of patients.

The purpose of the work: A review of existing telemedicine systems and technologies in cardiology.

Does telemedicine can help us cure and prevent cardiovascular disease?

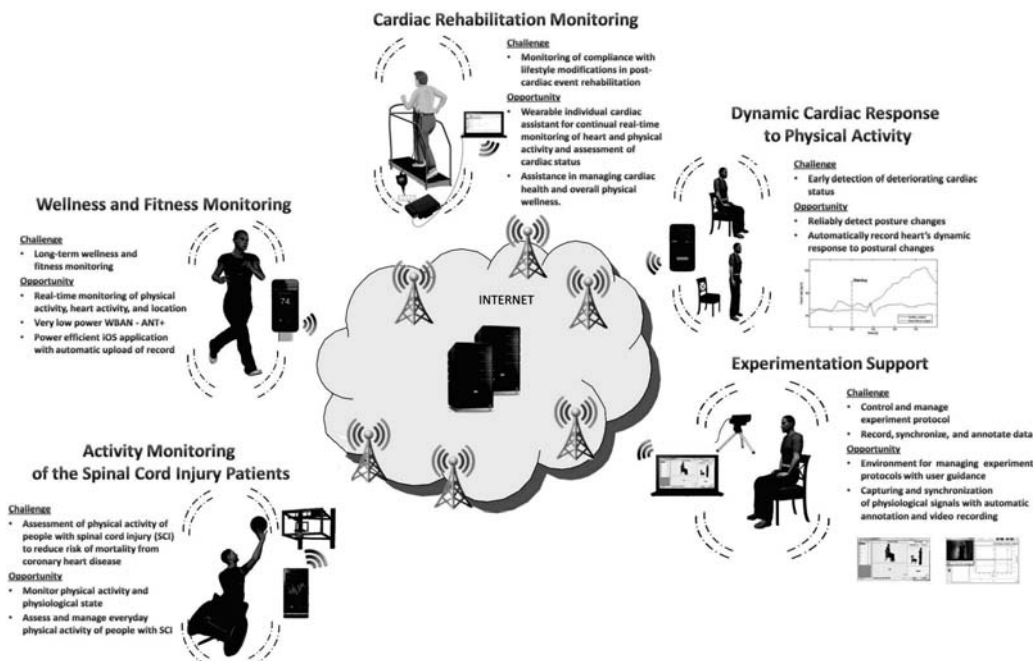
Consider, for example, an interactive telemedicine system Philips Motiva [2, 3]. This system is an interactive platform for health care, which connects patients with chronic diseases such as chronic ischemic heart disease, heart failure, diabetes and chronic lung disease (COPD), with medical staff through the home television and broadband internet connection.

Motiva automates the control of the disease and involves patients in the private daily interaction and learning, produced through the home television. The system allows health workers to motivate behavior change through the easy-to-use technology, enabling them to achieve goals: patient compliance with prescriptions, the effectiveness of television programs of care and lower costs for treatment.

In addition to the automated monitoring of vital signs, patients are supported by:

- Training material provided by the video with themes related to their individual needs treatment;
- Active feedback measurement of vital signs, to help patients track progress toward personal goals;
- Motivational message from experts, to help encourage healthy lifestyle choices for diet and exercise;
- Reviews of health-related issues that assess patients' understanding, motivation and self-esteem levels and provide subjective information to a remote nurse about their current health status.

The second example – computing infrastructure for Mobile Health Monitoring (the system «M-Health») (pic. 1) [4]. The use of mobile systems provides medical data transmission at a distance from anywhere, anytime. M-Health is embedded in cardiology thanks to recent advances in the field of microsystems, nanotechnology, information, communication technology and miniaturization.



Pic.1 – Computing infrastructure for Mobile Health Monitoring

M-Health is a multiparameter cardiac system, which allows remote control of physical parameters and the human body (e.g. heart rate) by combining: indestructible implantable sensors, intelligent data processing and communications, thus reducing the risk of heart disease and improve well-being of patients [5].

Thus we can say that digital and remote telemedicine systems are now an integral part of the World Health Organization. This provides a higher quality of care for patients with chronic diseases improves the performance of diagnostic, medical processes and ensures the safety of treatment. The introduction of such systems allows any citizen, regardless of where they live, to receive timely help at the advanced level.

Even if these technologies require a lot of money, such as finance and skilled labor force, the Ukrainian government is the decentralization of urgent areas with an increase in the data analysis center at a distance in clinics and hospitals, and in the future it will be possible to carry out heart surgery at a distance.

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