

Zhelezniakova N. M.,
Doctor of Medicine, Professor
Kharkiv National Medical University;
Aleksandrova T. M.,
PhD, Associate Professor
Kharkiv National Medical University

THE ROLE OF INFORMATION AND COMMUNICATION TECHNOLOGIES IN ADDRESSING CURRENT CHALLENGES IN PRIMARY HEALTH CARE

Abstract. Information and communication technologies (ICTs) are increasingly regarded as essential instruments for the development of integrated primary health care, particularly in the management of patients with chronic conditions and complex health care needs [1]. In this context, identifying the key determinants that influence the successful implementation of ICTs in primary care has become an important task for contemporary medicine.

At present, the global prevalence of patients suffering from multiple chronic conditions continues to rise. Individuals with comorbid diseases often experience additional biopsychosocial challenges, while the coexistence of several disorders may lead to inconsistencies or conflicts between therapeutic regimens [2].

The integrated health care model represents a coordinated, multidisciplinary, and patient-centered approach to health service delivery, offering significant potential for improving the management of chronic diseases [3]. Recent studies indicate that the implementation of integrated care strategies enhances the coordination and continuity of health services within the primary care system [4]. Therefore, it is important to analyze international experience in the application of integrated health care models.

The Rainbow Model of Integrated Care (RMIC), proposed in 2013 by the Dutch researcher Dr. Pim P. Valentijn, provides a conceptual framework for understanding integrated health care. According to this model, integration can occur across several interconnected levels, including the clinical, professional, organizational, and system levels, and is supported by functional and normative integration mechanisms [5]. Each level of integration requires specific strategies, instruments, and organizational approaches aimed at facilitating collaboration and coordination among health care providers to ensure continuity and quality of care.

The application of ICT within the RMIC framework can be particularly beneficial for patients with complex health care needs. Such patients often require services from multiple professionals and health care organizations; therefore, digital technologies can support coordination of care and serve as tools for clinical decision-making [6]. Implementation of RMIC also promotes person-centered care by taking into account the coexistence of multiple diseases, the involvement of interdisciplinary teams, patient conditions, and the timing of medical interventions. Examples of ICT

applications within the RMIC framework include patient portals that provide access to information about health services and telemedicine technologies that enable coordinated care delivery at a distance [7].

Another conceptual approach to technological support for individuals with chronic diseases is the eHealth Enhanced Chronic Care Model (eCCM), developed by a group of researchers in the United States in 2015. This model represents a modernization of the original Chronic Care Model introduced by Wagner in the 1990s, incorporating the capabilities of contemporary eHealth technologies, including electronic health records, patient portals, and mobile applications designed to support patient self-management [8].

The eCCM framework highlights the potential of ICT and the data generated by these technologies to improve health outcomes by enhancing both patient and provider knowledge regarding chronic disease management. Within this model, e-community resources represent strategies aimed at strengthening collaboration with community organizations and developing virtual health-related communities. Examples of ICT tools used within the eCCM framework include online health communities and social networking platforms that facilitate communication and knowledge exchange in the health care environment [9].

The findings reported by Farah Tahsin et al. (2023) indicate that contemporary integrated primary care models designed for patients with chronic conditions actively employ a range of ICT-based technologies, including telemonitoring systems, mobile health applications, electronic health records, and telephone-based communication. These digital tools facilitate the exchange of information among healthcare professionals both within and between organizations, as well as between patients and healthcare providers. Consequently, ICT contributes to the integration of health services at multiple levels, including clinical, professional, and organizational domains [1].

Conclusions. Information and communication technologies play a significant functional role in supporting individuals with multiple chronic conditions within integrated primary care systems. They are essential for coordinating clinical services across multidisciplinary teams and for enabling remote patient self-management in individuals with complex health needs. Nevertheless, to fully realize the potential of ICT in integrated care, further studies are required to explore mechanisms that can facilitate integration at broader organizational and health-system levels.

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