TECHNOLOGICAL PRINCIPLES FOR ENSURING HIGH INDICATORS OF MEDICAL CARE

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The modern stage of development of healthcare is characterized by the increase in the technological level of medical care. In the last decade, a number of effective medical technologies have been developed and implemented in medical practice in cardiology, oncology, pulmonology, endocrinology, neurology, immunology, rheumatology, surgery, radiation medicine, hemotherapy and pharmacology. The range of surgical interventions using minimally invasive surgery has been expanded. The development of modern medical technologies is directly related to the development of medical science and scientific and technological progress.

In Art. 20 of the Law of Ukraine "Fundamentals of the Legislation of Ukraine on Healthcare" it is stated that the state must promote the development of scientific research in the field of healthcare and the implementation of its results in the activities of healthcare institutions. Research conducted by academic and departmental scientific institutions, educational institutions or individual scientists is financed on a competitive basis from the state budget, as well as from any other sources of funding that do not contradict the legislation.

The program for the introduction of new science-intensive medical and pharmaceutical technologies should include the following factors:

- improvement of the existing technological base;
- technical re-equipment of medical and preventive institutions;
- standardization of medical intervention schemes and medical technologies;

- development and implementation of medical information technologies;
- training of new personnel who will be able to professionally use the new capabilities of high technologies.

General treatment and diagnostic technologies - the latest technologies for diagnosis and treatment of the most common pathologies and diseases. This section also includes high technologies that preserve organs, sparing functions and reconstructive and plastic surgeries. To achieve the safety of treatment, clinical and economic efficiency of the process of providing medical care, the implementation of medical care standards is being carried out. National medical care standards consist of national treatment protocols, which are formed according to the principles of evidence-based medicine.

Biotechnology, nanotechnology, genetic engineering technologies for diagnostics and treatment are becoming increasingly important in modern theoretical and practical medicine. Gene therapy involves the development of safe and high-tech methods for introducing missing or defective producer genes into the somatic cells of patients. When using technologies related to interference with the human genome, it is necessary to comply with the provisions set forth in the "Convention for the Protection of Human Rights and Dignity with regard to the Use of Advances in Biology and Medicine" (ETS-164, Oviedo, 04.04.1997). Article 13 of the Convention, entitled "Interference with the Human Genome", states that interference with the purpose of modifying the human genome may be carried out only for preventive, diagnostic or therapeutic purposes, and only on condition that it is not aimed at changing the genome of descendants.

A recent National Academies USA report articulates a path forward for research, ethics, and governance of clinical applications involving genome editing. In light of recent human embryo editing developments, scientists and stakeholders from all nations should cooperate to take advantage of this historic opportunity for medicine and also basic human biology. A recent National Academies USA report articulates a path forward for research, ethics, and governance of clinical applications involving genome editing. In light of recent human embryo editing developments, scientists and stakeholders from all nations should cooperate to take advantage of this historic opportunity for medicine and also basic human biology [1].

Information technologies - a dynamic class of technologies that includes system technologies, virtual technologies, multimedia technologies, Internet technologies, telecommunication technologies, monitoring systems and technologies.

Internet technologies - technologies that provide information support for clinical medicine on issues of consulting and treating patients, provide access to electronic databases of libraries, medical journals, etc.

Telemedical technologies - technologies that are implemented using telecommunication technologies and provide the opportunity to receive medical and diagnostic consultations, remote monitoring, are used in conducting managerial, educational, scientific and educational activities.

Telemedicine has evolved significantly, providing healthcare services and exchanging medical information remotely. The origins of telemedicine can be traced

back to the early 20th century, marked by rudimentary attempts to extend healthcare services over distances. One of the earliest documented uses of telemedicine was in the 1920s when radio communications were used to provide medical advice to ships at sea, a crucial service for maritime workers far from land-based medical facilities [2]. The historical overview traces its roots from early experiments to its current state, marked by advanced technology, diverse applications, and increased adoption, especially during the COVID-19 pandemic. Emerging technologies like AI, VR, IoT, and blockchain promise to revolutionize telemedicine, enhancing diagnostics, patient monitoring, and personalized treatment. Potential applications range from chronic disease management to tele-ICUs and global health initiatives. To maximize telemedicine's benefits, healthcare providers, technology developers, policymakers, and researchers are offered recommendations.

Telemedicine's potential to transform healthcare delivery is profound, fostering accessibility, efficiency, and improved patient outcomes. While challenges exist, addressing them will help create a future where telemedicine is central to delivering equitable and patient-centered healthcare [3].

Information and organizational support technologies should create a single medical information space. The structure of the space should contain three hierarchical levels. The first is information systems of institutions directly related to patients. The second is information and analytical centers of administrative and territorial units, which are connected to the information systems of healthcare institutions and state information and analytical centers. The third level is national integrated databases on the health of the population of Ukraine and preventive and rehabilitation measures.

Information and technical support technologies – information support for the activities of a medical institution, which include the system of accounting and management of material resources of the institution, programs for accounting and analysis of medical activities of the institution, systems for accounting and management of personnel, programs for maintaining statistics, medical registers of the population in the service area of the medical institution, patient databases, accounting of medicines, etc.

Management technologies – technologies that provide strategic planning and planning of the production process and its operational control, the establishment of mechanisms for communication, motivation, coordination of activities. Management technologies should ensure: the effectiveness of the activities of a health care institution; high quality of medical care; satisfaction of clients (patients and their representatives). Management technologies allow you to make informed management decisions, implement organizational changes and innovations in health care institutions.

Chemical-pharmaceutical technologies. The state policy of Ukraine in the field of creation, production, quality control and sale of medicines is aimed at supporting scientific research, creating and implementing new technologies, as well as developing the production of highly effective and safe medicines, ensuring the needs of the population with medicines of proper quality.

To achieve this goal, the State Register of Medicines of Ukraine was created - a regulatory document that contains information about medicines permitted for production and use in medical practice.

The basis of chemical-pharmaceutical technologies is:

- pharmacopoeial article - a regulatory and technical document that establishes requirements for a medicine, its packaging, conditions and shelf life, and methods of quality control of a medicine;
- technological regulations for the manufacture of a medicine - a regulatory document that defines technological methods, technical means, norms and standards for the manufacture of a medicine;
- State Pharmacopoeia of Ukraine - a legal act that contains general requirements for medicines, pharmacopoeial articles, and methods of quality control of medicines.

References:

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