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MODERN TECHNOLOGIES IN SOLVING PROBLEMS OF SOCIO-HYGIENIC MONITORING

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Abstract

The article analyzes the existing problems in the socio-hygienic monitoring system and the role of modern technologies in solving them. The possibilities of improving epidemiological control, predicting sanitary and epidemiological risks, and optimizing the healthcare system through innovative technologies such as artificial intelligence, big data, cloud technologies, and IoT (Internet of Things) are considered. Studies show that the introduction of digital technologies increases the speed and accuracy of the monitoring process and improves the health of society.

Keywords: socio-hygienic monitoring, modern technologies, artificial intelligence, big data, IoT, healthcare, epidemiological control, digital innovations.

Hygiene is a branch of medicine; it studies the influence of living and working conditions on human health and develops measures to prevent diseases, create the most comfortable living conditions, maintain health and prolong life. There are several areas of hygiene. Aviation hygiene, military hygiene, hygiene of children and adolescents (school hygiene), personal hygiene, social hygiene, nutritional hygiene, radiation hygiene.

Hygienic culture is an integral part of culture in general, an activity aimed at creating material and spiritual wealth aimed at creating a comfortable and healthy environment for the body of people in natural living conditions. In our opinion, hygienic culture is not a spontaneous phenomenon, but a necessity for performing the functions of social life.

Hygiene is closely connected with physiology, pathophysiology, epidemiology, toxicology, physics, chemistry, as well as socio-economic sciences, since along with natural factors, the economic situation of society also affects human health. The task of hygiene is to develop the foundations of preventive and daily sanitary control on a scientific basis, to justify sanitary measures to improve the living and working conditions and recreation of people, to protect the health of children and adolescents, to develop sanitary regulations, and to participate in sanitary examination of the quality of food products and household items.

Socio-hygienic monitoring is a scientific and practical process aimed at monitoring the sanitary and hygienic conditions of the population, predicting the spread of diseases, and increasing the efficiency of the healthcare system. However, traditional monitoring methods often face problems such as data lag, incorrect analysis, and lack of resources. Therefore, the integration of modern technologies into the monitoring process is an urgent issue.

Healthcare is a system of social, economic and medical measures aimed at protecting the health of the population. Healthcare includes general measures aimed at preventing and treating diseases, creating healthy living and working conditions, ensuring high working capacity and longevity; its main task is to provide patients with modern, specialized and appropriate care.

When talking about the role of modern technologies in solving socio-hygienic monitoring problems, it is necessary to consider the following problems.

1. Delays in data collection and analysis - Errors can occur during manual data collection and processing.
2. Uncertainty of monitoring results - Inaccurate or incomplete data can lead to incorrect forecasts.
3. Lack of resources - In many cases, monitoring systems are not adequately funded.

4. Lack of multidisciplinary integration - Information exchange between the health system, ecology and social services is not sufficiently established.

There are several ways to solve these problems using modern technologies.

For example, Artificial Intelligence (AI) and Machine Learning (ML)

With the help of AI, it is possible to automatically process, analyze and forecast medical and hygienic data. Machine learning algorithms can be useful in creating forecasts for the spread of diseases.

Big Data and cloud technologies can also be applied in practice.

As a result, real-time monitoring can be carried out by storing and processing large amounts of epidemiological data.

Cloud technologies can increase the efficiency of information exchange between institutions. Obtaining real-time information through IoT devices (smart watches, medical sensors) to monitor the health of the population and using mobile applications, it will be possible to create automatic information collection and notification systems about the health of patients.

In addition, blockchain technology can be used to increase the transparency and reliability of monitoring results.

Protecting the authenticity of data by ensuring that hygienic data is not altered.

Epidemiology is also a branch of medicine. It studies the causes and spread of infectious diseases, as well as develops measures to combat and prevent them. Epidemiology is closely related to biology, microbiology, virology, genetics, biochemistry, physics, etc. General and specific epidemiology are distinguished.

General epidemiology studies the evolutionary basis of the classification of infectious diseases, the epidemic process, the categories and laws of epidemiology; specific epidemiology studies the specific history of each infectious disease, its causative agent, epidemiology, source of infection, routes and means of transmission, methods of combating and preventing it.

The history of epidemiology goes back a long way. The sacred book of Zoroastrianism, the Avesta, contains religious and philosophical issues, as well as thoughts on medicine, in particular, the spread of infectious diseases and their prevention.

It was known even at that time that some diseases can be transmitted from animals, as well as the possibility of infection when communicating with a patient, and that its causative agent enters the body in various ways - through the mouth, nose, and genitals.

Health is one of the important components of human development, an inalienable right of a person, a guarantee of self-development, active participation in personal and social life. As is known, in our society, human health, physical well-being, and the culture of a healthy lifestyle are considered extremely important social values. Ensuring the health of the nation, preserving the people's gene pool in good condition can be achieved in a sufficiently positive way only thanks to a healthy lifestyle.[1]

In conclusion, modern technologies contribute to the effective and accurate functioning of the socio-hygienic monitoring system. Artificial intelligence, big data, IoT, and cloud technologies can greatly contribute to disease prevention by optimizing the monitoring process. In the future, the efficiency of the healthcare system can be increased by further implementing digital technologies.

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