

Scottish International Conference on Multidisciplinary Research and Innovation – SICMRI 2025

METHODS FOR EARLY DETECTION OF INFECTIOUS DISEASES

Mirzayev Olim Jaloldinovich

Fergana Medical Institute of Public Health

Fergana, Uzbekistan

Abstract: Early detection of infectious diseases is important for ensuring epidemiological stability in the healthcare system, reducing disease complications, and preventing the spread of infection. In modern medicine, the improvement of laboratory, clinical, and instrumental diagnostic methods is expanding the possibilities for detecting infectious diseases at an early stage. This article analyzes the role of clinical screening, microbiological and serological examinations, molecular biological methods, rapid diagnostic tests, and digital epidemiological monitoring systems used in the early detection of infectious diseases. The results of the study show that the integrated use of early diagnostic methods can alleviate the course of the disease, reduce mortality rates, and ensure the efficient use of healthcare resources.

Keywords: infectious diseases, early detection, screening, laboratory diagnostics, molecular diagnostics, rapid tests, epidemiological monitoring, prevention.

The importance of early detection of infectious diseases is well known. First, this ensures that treatment is effective, and second, the patient is hospitalized early and, consequently, does not transmit the infection to others. Diagnosis of infectious diseases is based on the patient's history, complaints, objective data obtained during a thorough examination, and the results of laboratory and diagnostic tests. Particular attention is paid to the history, especially epidemiological data.

Epidemiological history information sometimes plays a very important role in solving diagnostic problems. For this reason, it is necessary to collect and analyze them thoroughly. If, based on the epidemiological history, information about when, where, under what circumstances and how the patient contracted the disease is correctly collected and used correctly, the diagnosis of the disease will be much easier. If the patient clearly reports that he has been in close contact with a person suffering from this or that infectious disease, the doctor will naturally first think about this disease and examine the patient in this direction. In other cases, if the patient reports that he is in close contact with animals due to his profession, the doctor will have an idea about diseases transmitted from animals. Another patient informs the doctor that he has come from an endemic foci of an infectious disease or from a place where an epizootic of another disease has been recorded.

When collecting epidemiological history data, it is necessary to have complete information about whether the patient has been bitten by various insects, whether he has recently been injured, whether he has undergone surgery, whether he has received blood transfusions. Then, it is necessary to obtain information about what infectious diseases the patient has previously suffered from. It is also necessary to inquire about what infectious diseases he has been vaccinated against. Finally, when talking to the patient, it is necessary to find out whether he has previously been treated with antibiotics, corticosteroid hormones, and serum preparations.

Early detection of infectious diseases is one of the priorities of the modern healthcare system, which is of great importance in reducing the severity of diseases, complications and mortality. The study found that the combined use of clinical screening, laboratory and molecular-biological diagnostic methods, rapid tests and digital epidemiological monitoring systems ensures high diagnostic efficiency. The systematic implementation of these methods in practice allows for early detection of sources of infection, prevention of the spread of infectious diseases and rational use of healthcare resources. Also, improving the skills of medical workers and using innovative technologies in diagnostic processes are important factors in the fight against infectious diseases.

Scottish International Conference on Multidisciplinary Research and Innovation – SICMRI 2025

REFERENCES

1. Ulugbek, M. (2025). THE IMPORTANCE OF HYGIENIC ASSESSMENT OF THE IMPACT OF ATMOSPHERIC AIR POLLUTION ON PUBLIC HEALTH (ON THE EXAMPLE OF THE CITY OF FERGANA). *SHOKH LIBRARY*, 1(12).
2. Khaydarova, Buzulaykho, et al. "The Association between ambient air pollution and resistant hypertensive disorders in pregnancy: a case-control study in Tashkent." *Revista Latinoamericana de Hipertensión* 20.10 (2025).
3. Jaloldinovich, M. O. (2025, December). UNDERSTANDING HOSPITAL-ACQUIRED INFECTIONS. In *London International Monthly Conference on Multidisciplinary Research and Innovation (LIMCMRI)* (Vol. 3, No. 1, pp. 73-74).
4. Jaloldinovich, M. O. (2025, December). EPIDEMIOLOGY OF HOSPITAL-ACQUIRED INFECTIONS. In *Scottish International Conference on Multidisciplinary Research and Innovation–SICMRI 2025* (Vol. 2, No. 2, pp. 75-76).
5. Jaloldinovich, M. O. (2025, December). FACTORS INFLUENCING THE DEVELOPMENT OF HOSPITAL-ACQUIRED INFECTIONS. In *Scottish International Conference on Multidisciplinary Research and Innovation–SICMRI 2025* (Vol. 2, No. 2, pp. 77-79).
6. Aliyevich, A. A. (2025, December). MODERN APPROACHES TO FORMING THE CORRECT UNDERSTANDING OF AIDS AMONG THE POPULATION. In *London International Monthly Conference on Multidisciplinary Research and Innovation (LIMCMRI)* (Vol. 3, No. 1, pp. 310-312).
7. Aliyevich, A. A. (2025). THE PREVALENCE OF CARDIOVASCULAR DISEASES AND THEIR SOCIO-HYGIENIC IMPORTANCE IN FERGANA REGION. *Shokh Articles Library*, 1(1).
8. Ganiyevich, R. T. (2025, December). FEATURES OF THE COURSE OF COVID-19 IN PATIENTS WITH CONCOMITANT DISEASES. In *London International Monthly Conference on Multidisciplinary Research and Innovation (LIMCMRI)* (Vol. 3, No. 1, pp. 502-503).
9. Ganiyevich, R. T. (2025, December). INFORMATION ABOUT IMMUNODEFICIENCIES. In *Scottish International Conference on Multidisciplinary Research and Innovation–SICMRI 2025* (Vol. 2, No. 2, pp. 92-93).
10. Ganiyevich, R. T. (2025, December). SECONDARY IMMUNODEFICIENCIES: CLINICAL AND LABORATORY DIAGNOSTICS. In *London International Monthly Conference on Multidisciplinary Research and Innovation (LIMCMRI)* (Vol. 3, No. 1, pp. 500-501).
11. Osbayov, M. (2025). MEDICAL INSTITUTES: THE ROLE OF STATISTICAL DATA IN ORGANIZING SCIENTIFIC RESEARCH WORKS OF STUDENTS. *Journal of Multidisciplinary Sciences and Innovations*, 1(3), 363-366.
12. Imaralievich, M. O. (2025, December). WAYS TO INCREASE THE EFFECTIVENESS OF INTERACTIVE ELECTRONIC TEXTBOOKS IN THE SUBJECT OF HYGIENE AND MEDICAL ECOLOGY. In *London International Monthly Conference on Multidisciplinary Research and Innovation (LIMCMRI)* (Vol. 3, No. 1, pp. 221-223).
13. Imaralievich, M. O. (2025, December). METHODOLOGY FOR IMPROVING THE SOFTWARE SUPPORT OF THE SUBJECT “HYGIENE. MEDICAL ECOLOGY”. In *London International Monthly Conference on Multidisciplinary Research and Innovation (LIMCMRI)* (Vol. 3, No. 1, pp. 218-220).
14. Imaralievich, O. M. (2025). METHODOLOGY FOR APPLYING AI-BASED ANALYTICAL SYSTEMS IN HYGIENE AND MEDICAL ECOLOGY. *Научный Импульс*, 4(39), 403-407.
15. Imaralievich, O. M. (2025). THE ROLE OF MOBILE APPLICATIONS IN DEVELOPING HYGIENIC COMPETENCIES AMONG STUDENTS. *Новости образования: исследование в XXI веке*, 4(40), 184-189.