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LEGAL ASPECTS OF REGULATION OF MEDICAL WASTE TREATMENT AND DISPOSAL IN THE REPUBLIC OF KAZAKHSTAN: PROBLEMS AND DIRECTIONS OF IMPROVEMENT

Abstract. This article is devoted to the analysis of the legal regulation of the treatment and disposal of medical waste in the Republic of Kazakhstan. The research covers issues of regulatory support, the distribution of competencies of government agencies, international experience and law enforcement practice in the field of medical waste management. Special attention is paid to the analysis of judicial and administrative cases related to violations of environmental and sanitary requirements, which makes it possible to assess the effectiveness of existing legal mechanisms.

The study of international experience in legal regulation of the disposal of medical waste in countries such as Germany, Japan and the Republic of Korea showed that the most effective are integrated management models, which are concentrated in a single Control Center and use modern digital systems for monitoring medical waste. In the course of the conducted research, it was possible to identify a number of problems hindering the effective development of the medical waste management system in the Republic of Kazakhstan.

The scientific novelty of the research lies in the formulation of author's proposals to improve the legal regulation of medical waste management, including the development of a single interdepartmental bylaw, the regulatory consolidation of a centralized digital accounting and monitoring system, as well as clarifying the competencies of authorized government agencies.

The practical significance of the work consists in the development of specific legal recommendations aimed at improving the effectiveness of the national system of state control, ensuring sanitary, epidemiological and environmental safety and improving the legislation of the Republic of Kazakhstan in the field of medical waste management and disposal.

Keywords: medical waste; environmental law; disposal; government regulation; safety.

Introduction

As President of the Republic of Kazakhstan Kassym-Jomart Tokayev emphasized: «Environmental safety is not an abstract concept, but a matter of the nation's health, the future of our children, and the sustainable development of the state» [1]. These words are especially relevant in the context of medical waste management, since it is here that issues of health protection, sanitary and epidemiological safety and the rational use of natural resources intersect.

Waste generated in the course of healthcare institutions' operations represents one of the most specific and potentially hazardous categories for both humans and the environment. Its composition includes a diverse range of biological, chemical, and pharmaceutical substances - from materials and instruments contaminated with pathogenic microorganisms to residues of medicines, antiseptics, and other toxic compounds. If improperly managed, such waste can produce long-term adverse effects on public health and contribute to the degradation of ecosystems.

According to the World Health Organization (WHO): «hazardous medical waste accounts for approximately 15 percent of the total volume, confirming the global significance of ensuring environmentally sound disposal practices»[1].

Global practice shows that

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[1] World Health Organization. Health-care waste. Geneva: WHO, 2018 // URL: https://www.who.int/news-room/fact-sheets/detail/health-care-waste (date of reference 03.11. 2025).

mishandling medical waste often results in severe outcomes, such as pollution of the environment, transmission of infectious agents, and higher rates of work-related illnesses among medical staff. According to WHO-supported research, unsafe injections account for approximately 33 800 new HIV infections, 1.7 million hepatitis B infections, and 315 000 hepatitis C infections annually. As noted by A. M. Hauri, G. L. Armstrong, and Y. J. Hutin in a study conducted in collaboration with the World Health Organization, the reuse of contaminated syringes leads annually to about 33,800 new HIV infections**,** 1.7 million hepatitis B cases, and 315,000 hepatitis C cases [2].

These data clearly show that improper management of medical waste can lead to the spread of dangerous infections and other threats to human health. Therefore, the State needs to establish stricter controls and create an effective medical waste management system to protect the environment and public health.

The experience of countries such as Germany, Japan and the Republic of Korea demonstrates that a combination of strict legislation, a well-developed licensing and monitoring system, as well as the use of digital accounting and automated systems, can significantly reduce sanitary risks and increase the level of environmental protection of the population.

This problem is particularly acute for Kazakhstan. In a number of regions of the country. In the field of medical waste management, there is a shortage of modern processing facilities, which does not allow for their proper disposal. Regulatory control over the stages of transportation and storage also functions poorly. Additionally, the intersection of responsibilities of various government agencies and the lack of proper interdepartmental interaction is revealed.

This shows that the existing medical waste management system needs to be radically modernized and is not capable of eliminating the identified problems on its own. It is important to establish common rules, train qualified personnel, develop waste treatment facilities, and promote the use of environmentally safe technologies.

Today, the issue of medical waste management goes far beyond sanitary regulation. It has become a broader task that calls for an integrated approach combining environmental, sanitary, technical, and legal measures aimed at protecting public health and the environment.

Consequently, in today's context, managing medical waste cannot be confined to sector-specific sanitary rules alone. It demands an integrated framework that unites ecological, public health and etc.

In the Republic of Kazakhstan, the management of waste is regulated by the Environmental Code, sanitary rules and norms, as well as a number of subordinate legal acts. However, the existing regulatory framework is characterized by fragmentation and the absence of a unified systemic approach to medical waste management. This is reflected in the fact that the division of powers among government agencies is inconsistent - in some cases overlapping, in others absent altogether. There is no unified waste classification system, control over waste management processes remains insufficiently effective, and enforcement of legal responsibility for violations of established rules is still weak.

Moreover, in practice, there are significant variations in organizational approaches to the collection, transportation, disinfection, and disposal of medical waste depending on the region, the level of the healthcare facility, and the form of ownership. Modern technical equipment ensuring the complete neutralization of hazardous components is often lacking, while the thermal or chemical treatment methods applied do not always comply with international standards and environmental criteria.

For example, in a number of regional medical organizations, waste is still being removed and incinerated on an old mechanical machine without an installed filtration system, which leads to the release of harmful substances into the atmosphere and increases environmental and epidemiological risks.

The purpose of this work is to carry out a comprehensive analysis of the legal regulation of the treatment and disposal of medical waste in the Republic of Kazakhstan, identify the main regulatory and institutional problems and formulate proposals for improving national legislation and the mechanism of state control, taking into account international experience.

The objectives of the study include:

1. To analyze the current regulatory framework of the Republic of Kazakhstan

governing the treatment and disposal of medical waste, identifying gaps and fragmentation of legal regulation;

2. Identify key legal and institutional issues that limit the effectiveness of government regulation and the distribution of competencies between authorized bodies in the field of medical waste management;

3. To investigate international models of legal regulation of medical waste management (Germany, Japan, Republic of Korea) and to assess the possibilities of their adaptation in Kazakhstan conditions, as well as to analyze judicial and administrative practice of the Republic of Kazakhstan on relevant violations.

4. To develop scientifically sound proposals for improving legal regulation, including strengthening state control, clarifying the competencies of authorities, normalizing digital monitoring mechanisms and increasing the effectiveness of legal liability for violations.

The scientific novelty of the research lies in a comprehensive legal assessment of the current system of regulation of medical waste management in the Republic of Kazakhstan and the formulation of author's proposals for its improvement. In particular, the novelty consists in substantiating the need to develop a single interdepartmental bylaw, to establish a centralized digital system for accounting and monitoring medical waste, as well as to clarify the competencies of authorized bodies and strengthen legal responsibility for violations in this area.

Materials and Methods

The methodological framework of the study - incorporates both general scientific and specialized methods of cognition traditionally employed in legal and environmental management research. The study uses systematic, comparative legal, formal legal, analytical and statistical methods.

The systemic method was used to examine the institutional structure of state regulation in the field of medical waste management and to identify the interrelations between the norms of environmental, sanitary-epidemiological, and administrative law.

The comparative legal method is used in reviewing and comparing the national legal framework of the Republic of Kazakhstan and the practice of foreign countries - Germany, Japan, and the Republic of Korea. This made it possible to review the legal experience of foreign countries and assess the possibility of their application in the Republic of Kazakhstan.

The formal-legal method was employed to analyze the normative legal acts governing waste management, including the provisions of the Environmental Code of the Republic of Kazakhstan, sanitary rules and regulations, as well as subordinate acts of the Ministry of Health and the Ministry of Ecology and Natural Resources.

The analytical method was used to study data from publicly available sources, including reports, publications of the WHO, the authorized body in the field of healthcare and in the field of ecology.

Results and Discussion

The issues of legal regulation of the treatment and disposal of medical waste have repeatedly become the object of attention of scientists and have been considered in a number of domestic and foreign scientific studies. In the international academic literature, the problem of medical waste governance is also actively explored. For instance, A. Levchenko and S.J. Schweikart emphasize that after the expiration of the U.S. Medical Waste Tracking Act (1988), regulatory authority became decentralized, leading to substantial differences in legal requirements among individual states. They note that this fragmentation of the legal framework and the absence of a unified regulatory system complicate the development of consistent national safety standards [3].

R.Seilkassymova, D.Nurmukhankyzy, A.Rzabay, Z.Baktykhozhaye, and I.Nessipbayeva analyze international experience in ensuring environmental safety in the management of medical waste, stressing the need to harmonize Kazakhstan's national legislation with the principles of sustainable development and the norms of international environmental law [4]. In her study, O.V. Kulikova examines the specifics of legal regulation concerning special-purpose waste, including medical waste, emphasizing the need for systematization of the regulatory framework and enhanced interagency coordination in state supervision [5].

R. Chartier and J. Emmanuel (WHO,

2014), in their collective monograph Safe Management of Wastes from Health-Care Activities, present the institutional and legal dimensions of developing sanitary safety systems in healthcare institutions [6]. K. Almuneef and A. Memish investigate sanitary-regulatory standards for medical waste management in the Gulf countries, emphasizing the need to adapt international legal requirements to regional conditions [7].

Kazakhstani scholars - A. A. Nukesheva, G. T. Baisalova, and M. T. Beisenbayeva note that the legislative initiatives and practical aspects of Kazakhstan's regulatory framework in this field remain insufficiently studied. They underline the necessity of increasing awareness of state-level legislative measures, taking into account international experience, administrative mechanisms, and recommendations of global organizations [8]. B. T. Akhmetov draws attention to the absence in Kazakhstan of specialized sectoral legislation regulating waste management, pointing out that existing norms fail to enshrine the «waste hierarchy» principle established in international practice [9]. K.T. Iskakov notes: «It is necessary to further improve national legislation and bring it in line with international standards.

It is important to strengthen the professional training of personnel involved in medical waste management and the introduction of modern waste treatment and disposal technologies.» [10].

The analysis shows that the system of legal regulation of medical waste management in the Republic of Kazakhstan remains unformed and is characterized by significant regulatory and institutional gaps. These shortcomings are manifested in five key areas: 1) regulatory fragmentation and lack of unified regulation; 2) organizational inconsistencies and shortage of processing infrastructure; 3) insufficient development of technical capacities and recycling technologies; 4) the lack of a digital accounting and monitoring system; 5) weak sanctions mechanisms and law enforcement practices. Let's look at each of these directions in more detail.

Firstly, regulatory fragmentation and lack of unified regulation. The key standards regarding environmental requirements for waste management are fixed in the Environmental Code of the Republic of Kazakhstan dated January 2, 2021. Article 377 of the Environmental Code establishes general environmental requirements for the treatment, neutralization, storage and disposal of waste. The Code provides for a passport of hazardous waste (art. 367), environmental requirements (Chapter 16), licensing of activities in the field of recovery and disposal of hazardous waste (art. 336), principles of state environmental policy in the field of waste management (art. 328)[2]. However, none of the sections of the Code contains special rules governing the specific handling of medical waste, which are classified as hazardous waste of Class B and C. Only articles 377 of the Code specify that the procedure for handling medical waste is determined by the authorized body in the field of healthcare, which in fact leads to a division of regulation between two departments - the Ministry of Health and the Ministry of Ecology and Natural Resources. This approach generates regulatory fragmentation: sanitary requirements are established by the sanitary rules of the Ministry of Health, while environmental aspects are regulated by the Environmental Code, which leads to the absence of a single comprehensive legal act covering the entire life cycle of medical waste from the moment of formation to final disposal.

For example, sanitary and epidemiological requirements for the management of medical waste are established by Sanitary Regulations No. KR DSM-185/2020 dated December 11, 2020 «Sanitary and epidemiological requirements for healthcare organizations», which regulate only the intra-organizational stage of waste management, including their classification into classes A, B, C and D (paragraphs 16-21), the color marking of containers (paragraphs 33-36), the procedure for initial collection, temporary storage and disinfection treatment (Chapter 4), as well as logging (paragraph 58)[3]. At the same time, medical waste is also subject to environmental regulation - including hazardous-waste passports, procedures

[2] Экологический кодекс Республики Казахстан от 2 января 2021 года № 400-VI ЗРК // URL: https://adilet.zan.kz/rus/docs/K2100000400 (date of reference: 01.11.2025).

[3] Приказ Министра здравоохранения Республики Казахстан от 11 августа 2020 года № ҚР ДСМ-96/2020 «Об утверждении Санитарных правил «Санитарно-эпидемиологические требования к объектам здравоохранения» // URL: https://adilet.zan.kz/rus/docs/V2000021080 (date of reference: 03.11.2025).

for treatment, neutralization, and disposal - administered by the environmental authority[4]. These stages of the life cycle are already regulated by the Environmental Code of the Republic of Kazakhstan, which leads to a disunity of legal regulation, the lack of unified integrated procedures and actually forces medical organizations to work under two parallel and uncoordinated regulatory regimes - sanitary and environmental, which significantly reduces the effectiveness of state control and creates legal uncertainty for the participants in the process. Thus, the problem lies not in the absence of norms as such, but in the fact that the existing sanitary rules and provisions of the Environmental Code operate in different regulatory logics and do not form a single comprehensive legal mechanism regulating the entire life cycle of medical waste - from the moment of formation to final disposal. This creates discrepancies in terminology, duplication of procedures, and a lack of coordinated interagency regulation.

In this context, the Japanese experience demonstrates the effectiveness of consistent regulatory development in the management of infectious medical waste. According to the study by M.Miyazaki and H.Une, specialized regulations in Japan were first introduced in 1992 under the Waste Management and Public Cleansing Act, and in 2004 the Ministry of the Environment adopted revised criteria that refined the classification of waste according to type, source, and infectious agent. This approach allowed for more precise regulation of medical waste streams, a reduction in overall waste volumes through the identification of genuinely hazardous fractions, and improved control over disinfection and treatment processes in healthcare facilities [11].

Thus, the problem lies not in the absence of norms as such, but in the fact that the existing sanitary rules and provisions of the Environmental Code operate in different regulatory logics and do not form a single comprehensive legal mechanism regulating the entire life cycle of medical waste - from the moment of formation to final disposal. This creates discrepancies in terminology, duplication of procedures, and a lack of coordinated interagency regulation.

Second, several deficiencies have been identified in the organizational structure of medical-waste management. In practical terms, supervisory and regulatory responsibilities related to medical waste are fragmented across several state institutions. This dispersion diminishes the overall efficiency of oversight and limits the accountability of individual agencies. In many regions, there is also a shortage of licensed companies capable of ensuring the environmentally safe processing and disposal of hazardous healthcare waste, while existing facilities often operate at limited capacity and fail to cover the actual demand of medical institutions.

According to First Deputy Prime Minister of the Republic of Kazakhstan Roman Sklyar, out of 16,943 medical organizations nationwide, only 442 are equipped with their own waste-treatment facilities - just 2.6 percent. The remainder are forced to operate under contracts with external specialized companies licensed to manage medical waste[5]. These figures clearly demonstrate the shortage of on-site incinerators and autoclaves in healthcare institutions, a problem particularly acute in certain regions.

For example: example of inconsistency between the two departments is observed in the Almaty city[6] and Karaganda city[7], where inspections of sanitary services revealed the facts of temporary storage of medical waste in unintended premises, while environmental departments did not include these facilities in control plans. Such inconsistencies illustrate weak interagency coordination and the absence of a comprehensive approach to overseeing the entire medical-waste management cycle.

Third, the infrastructure for medical-waste disposal remains underdeveloped. Many medical facilities, especially in rural areas and remote areas, do not have

[4] Приказ Министра экологии, геологии и природных ресурсов Республики Казахстан от 20 августа 2021 года № 335 «Об утверждении Формы паспорта опасных отходов» // URL: https://adilet.zan.kz/rus/docs/V2100024386 (date of reference: 04.11.2025).

[5] KazTAG. Violations in the collection and storage of medical waste identified at 908 facilities in Kazakhstan over the year. March 5, 2022 // URL: https://new.kaztag.kz/ru/news/narusheniya-sbora-i-khraneniya-medotkhodov-vyyavili-za-god-na-908-obektakh-v-kazakhstane (date of reference: 04.11.2025).

[6] Zakon.kz. The Department of Sanitary and Epidemiological Control verifies information about a medical waste dump in the Almaty region. April 5, 2023 // URL: https://www.zakon.kz/proisshestviia/6011579-dsek-proveriaet-informatsiiu-o-svalke-meditsinskikh-otkhodov-v-almatinskoi-oblasti.html (date of reference: 03.11.2025).

[7] Caravan.kz. An illegal medical waste dump discovered in the Karaganda region. April 7, 2023 // URL: https://www.caravan.kz/news/v-karagandinskojj-oblasti-obnaruzhili-nelegalnuyu-svalku-medotkhodov-419404 (date of reference: 03.11.2025).

modern facilities for incineration, autoclaving or chemical disinfection of waste. In this regard, hazardous materials are often collected, burned or buried without permission along with household waste, which poses a serious threat to the environment and human health.

According to the Policy Brief «Reducing Violations in the Field of Medical Waste Management in Kazakhstan», prepared by the analytical center Prozakup.kz, most regions of the country lack specialized capacities for the safe neutralization of medical waste. The report notes that «Kazakhstan practically lacks a comprehensive system for the safe processing of hazardous medical waste, particularly outside major cities»[8].

Since there are no special rooms or facilities, medical waste often has to be temporarily stored directly in hospitals and clinics and later transported to general municipal landfills or destroyed through unauthorized burning. Similar cases have been discussed in the previous sections of this study.

Fourthly, Kazakhstan still lacks an integrated digital platform to trace and register the entire flow of medical waste. Most data on its collection, transportation, and final disposal continue to be documented manually, which not only hampers transparency but also enables potential manipulation of reporting and weakens state oversight mechanisms.

For instance, in Kazakhstan, most healthcare facilities continue to handle the documentation of medical waste manually - recording data in physical journals or using isolated spreadsheet files instead of centralized digital databases. During sanitary-epidemiological inspections, numerous cases were identified in which medical institutions were unable to provide documentary evidence confirming the transfer of waste to licensed companies, and information on actual disposal was missing from regional reports.

At the same time, international experience demonstrates the effectiveness of implementing electronic waste-tracking systems. In Germany, the operation of the electronic waste accounting system eANV (Elektronisches Abfallnachweisverfahren) is regulated by the provisions of the Waste Management Act (Kreislaufwirtschaftsgesetz, KrWG) and the By - Law on Proof of Origin and Disposal of Waste (Nachweisverordnung - NachwV) of October 20, 2006 (as amended in 2020), which establishes the mandatory use of electronic notification forms and reporting on hazardous waste management, i.e. Full electronic traceability of hazardous waste is provided – from the place of its formation to the point of final disposal.[9] In Japan, the Manifest Tracking System is regulated by the Waste Management and Public Cleansing Act (Waste Management Act – WMA), as well as the Ministerial Order on the Forms of the manifest and the procedure for its application (Enforcement Ordinance and Enforcement Regulations of WMA). It is the Waste Management Act that establishes the mandatory use of Manifest for tracking the movement of industrial and medical hazardous waste at every stage – from generation to transportation, treatment and final disposal[10].

According to research conducted by Korean scholars, the Republic of Korea has established one of the most technologically advanced and stringent regulatory frameworks for medical waste management. During the COVID-19 pandemic, The Republic of Korea effectively restructured its regulatory framework to cope with the surge in hazardous waste during the pandemic, enhancing supervisory control mechanisms and revising technical criteria to ensure safer and more efficient waste treatment. The authors note that further development of this system should include broader adoption of environmentally safe technologies, the digitalization of reporting processes, and stricter liability for waste-handling entities [12].

Fifth, existing sanctions for violations of medical waste management regulations fail to provide an adequate deterrent effect. Administrative enforcement is inconsistent, and the size of fines is disproportionate to the potential environmental damage caused.

In Germany and Japan, strict

[8] Prozakup.kz. Policy Brief: Reducing Violations in the Field of Medical Waste Management in Kazakhstan. 2024. // URL: https://www.prozakup.kz/publications/policy-brief-sokrashhenie-narushenij-v-sfere-obrashheniya-s-mediczinskimi-othodami-v-kazahstane/ (date of reference: 04.11.2025).

[9] Nachweisverordnung (NachwV) – Verordnung über Nachweise zur Entsorgung von Abfällen vom 20. Oktober 2006 (BGBl. I S. 2298), zuletzt geändert durch Artikel 16 der Verordnung vom 12. August 2020 (BGBl. I S. 1911). (date of reference: 04.11.2025).

[10] Japan's Experiences on Waste Management // Japan International Cooperation Agency (JICA). Tokyo, 2022 // URL: https://openjicareport.jica.go.jp/pdf/12380333_01.pdf (date of reference: 04.11.2025).

standards for the classification, accounting and transportation of hazardous waste have been established, as set out respectively in the KrWG and Nachweisverordnung (Germany), as well as the Waste Management Act and by-laws (Japan). Both countries have mandatory digital tracking systems – eANV and Manifest System, which ensure full transparency of waste flows from the moment of their formation to final disposal[11]. In the Republic of Korea, within the framework of the Wastes Control Act and the state environmental strategy, the *Zero Landfill* concept has been introduced, aimed at the complete neutralization and recycling of hazardous waste using innovative technologies and digital monitoring (Allbaro System)[12].

A review of Kazakhstan's judicial practice further confirms the presence of systemic violations in the field of medical waste management. Various regions of the country have recorded both administrative and criminal cases. For instance, according to Decision № 55-01-19-00-2/46 of the Specialized Inter-District Economic Court of Pavlodar Region dated 13 March 2019, LLP «**Утилизация**» was found to have illegally stored and incinerated 47,7 tons of hazardous medical waste without environmental assessment or emission permits, leading to a court-ordered suspension of its operations[13]. In March 2024, the Specialized Administrative Court of Kostanay found the company Eco-RBK in violation of environmental regulations related to hazardous waste handling. The enterprise was fined 2,584,400 tenge and prohibited from continuing operations due to the absence of mandatory declarations and breaches of transportation procedures[14].

By the decision of the Taldykorgan City Court, an individual entrepreneur «M» was found to have used a forged license for the disposal of toxic waste. The court verdict found the entrepreneur guilty of forgery and the use of a knowingly falsified document, as defined under Parts 1 and 3 of Article 385 of the Criminal Code of the Republic of Kazakhstan[15].

In 2025, in Pavlodar, a large-scale illegal landfill of medical waste was discovered, organized by LLP «BB-Group KZ» without undergoing state environmental expertise; legal proceedings were initiated to suspend the company's activities[16].

The reviewed cases highlight gaps in oversight, poor coordination between supervisory agencies, and the pressing need to modernize state regulation and monitoring of medical waste management.

Adopting relevant global experience could help Kazakhstan enhance the effectiveness of its waste governance system.

Combining stricter legal and organizational approaches with modern digital accounting systems would ensure the openness of waste management processes and help reduce harm to public health and the environment.

Based on the results of the conducted research, the main directions for improving state policy in this area can be identified as follows:

1) adoption of a unified (interdepartmental) by law regulating the management of medical waste from its generation to final disposal;

2) establishment of a centralized information system for recording and monitoring the movement of medical waste;

3) development of processing infrastructure and introduction of innovative disinfection technologies;

4) establishment of economic incentives for healthcare organizations that employ environmentally safe waste management methods;

5) strengthening administrative and environmental liability for violations of legal requirements;

[11] Japan International Cooperation Agency. Japan's Experiences on Waste Management. Tokyo: JICA, 2022 // URL: https://openjicareport.jica.go.jp/pdf/12380333_01.pdf (date of reference: 04.11.2025).

[12] South Korea's Experience with Smart Infrastructure Services – Integrated Solid Waste Management // Inter-American Development Bank. Washington, D.C., 2020 // URL: https://publications.iadb.org/publications/english/document/South-Koreas-Experience-with-Smart-Infrastructure-Services-Integrated-Solid-Waste-Management.pdf (date of reference: 04.11.2025).

[13] Specialized Interdistrict Economic Court of Pavlodar Region. Decision in case No. 55-01-19-00-2/46 dated March 13, 2019. Portal of Judicial Acts of the Republic of Kazakhstan // URL: https://office.sud.kz/lawsuit/document.xhtml (date of reference: 04.10.2025).

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[15] KazTAG. An entrepreneur in Taldykorgan forged a license for medical waste disposal. June 6, 2024 // URL: https://kt.kz/rus/society/v_taldykorgane_predprinimatel_poddelal_litsenziyu_na_utilizatsiyu_medotkhodov_1378046621.html (date of reference: 05.09.2025).

[16] Pavlodarnews.kz. A medical waste dump discovered in Pavlodar: the enterprise operated without environmental expertise. October 3, 2025 // URL: https://pavlodarnews.kz/novosti/ekologiya/v-pavlodare-obnaruzhena-svalka-medotkhodov-predpriyatie-rabotalo-bez-e/ (date of reference: 01.09.2025).

6) improving professional qualifications and fostering a culture of safe waste handling within the healthcare system.

№	Problem	Manifestation	Proposed Solution
1.	Fragmentation of the regulatory framework	Division of competences between the Ministry of Health and the Ministry of Ecology and Natural Resources; lack of a unified systemic approach	Adoption of a single interdepartmental bylaw regulating all stages of medical waste management
2.	Absence of an accounting and monitoring system	Manual recordkeeping; lack of digital traceability of waste flows	Introduction of a centralized digital system for monitoring and accounting of medical waste
3.	Insufficient disposal infrastructure	Lack of specialized treatment and recycling facilities in most regions	Establishment of regional centers for processing and neutralization of medical waste using modern technologies

Table 1. Main Problems and Directions for Improving State Policy in the Field of Medical Waste Management.

Conclusion

The analysis showed that the current system of state regulation of medical waste management in the Republic of Kazakhstan requires revision and updating at both the institutional and regulatory levels. The study identified key issues: 1) inconsistency of legislative norms, 2) duplication of functions between government agencies, 3) insufficient control, 4) lack of modern waste recycling facilities and lack of digital accounting and monitoring mechanisms. All these factors significantly reduce the effectiveness of the government regulation system and lead to an increase in environmental threats, as well as increase risks to public health.

Improper handling of them already leads to environmental pollution, increased infectious risks and deterioration of the sanitary situation. Examples of judicial practice from various regions of the country clearly demonstrate the systemic nature of violations, the low level of law enforcement and gaps in coordination between regulatory authorities.

A comparison of national experience with foreign practices - in particular, Germany, Japan, and the Republic of Korea - has shown that integrated models are the most effective, in which legislative, technological, and administrative tools operate on the basis of transparency, digitalization, and unified state control. It is advisable for Kazakhstan to adopt these approaches, adapting them to its own institutional realities.

It seems relevant to adopt a single bylaw covering all stages of the life cycle of medical waste; create a centralized digital system for monitoring their movement; develop specialized infrastructure; strengthen responsibility for violations; as well as systematic work on personnel training and the formation of an environmental culture in the healthcare sector.

Thus, effective legal regulation in the field of medical waste management should be considered not only as a sanitary necessity, but also as a key element of state environmental policy and a prerequisite for sustainable development. The implementation of the proposed measures will significantly increase the level of safety, transparency and efficiency of the national medical waste management system.

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ҚАЗАҚСТАН РЕСПУБЛИКАСЫНДА МЕДИЦИНАЛЫҚ ҚАЛДЫҚТАРДЫ ӨҢДЕУ МЕН КӘДЕГЕ ЖАРАТУДЫ РЕТТЕУДІҢ ҚҰҚЫҚТЫҚ АСПЕКТІЛЕРІ: ЖЕТІЛДІРУ МӘСЕЛЕЛЕРІ МЕН БАҒЫТТАРЫ

Аннотация. Бұл мақала Қазақстан Республикасында медициналық қалдықтарды өңдеу мен кәдеге жаратуды құқықтық реттеуді талдауға арналған. Зерттеу нормативтік қамтамасыз ету, мемлекеттік органдардың құзыреттерін бөлу, медициналық қалдықтарды басқару саласындағы халықаралық тәжірибе мен құқық қолдану практикасы мәселелерін қамтиды. Экологиялық және санитарлық талаптардың бұзылуына байланысты сот және әкімшілік істерді талдауға ерекше көңіл бөлінеді, бұл қолданыстағы құқықтық тетіктердің тиімділігін бағалауға мүмкіндік береді.

Германия, Жапония және Корея Республикалары сияқты елдерде медициналық қалдықтарды кәдеге жаратуды құқықтық реттеудің халықаралық тәжірибесін зерттеу бақылау бірыңғай орталықта шоғырланған және медициналық қалдықтарды бақылаудың заманауи цифрлық жүйелері қолданылатын интеграцияланған басқару модельдері ең үлкен тиімділікті қамтамасыз ететінін көрсетті.

Зерттеудің ғылыми жаңалығы медициналық қалдықтарды басқаруды құқықтық реттеуді жетілдіру бойынша авторлық ұсыныстарды тұжырымдауда, оның ішінде бірыңғай ведомствоаралық жарғыны әзірлеуде, орталықтандырылған цифрлық есепке алу мен мониторинг жүйесін нормативтік бекітуде, сондай-ақ уәкілетті органдардың құзыреттерін нақтылауда жатыр.мемлекеттік органдар.

Жұмыстың практикалық маңыздылығы мемлекеттік бақылаудың ұлттық жүйесінің тиімділігін арттыруға, санитарлық-эпидемиологиялық және экологиялық қауіпсіздікті қамтамасыз етуге және Қазақстан Республикасының медициналық қалдықтарды басқару және кәдеге жарату саласындағы заңнамасын жетілдіруге бағытталған нақты құқықтық ұсыныстарды әзірлеу болып табылады.

Түйінді сөздер: медициналық қалдықтар; экологиялық құқық; кәдеге жарату; мемлекеттік реттеу; қауіпсіздік.

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ПРАВОВЫЕ АСПЕКТЫ РЕГУЛИРОВАНИЯ ОБРАЩЕНИЯ И УТИЛИЗАЦИИ МЕДИЦИНСКИХ ОТХОДОВ В РЕСПУБЛИКЕ КАЗАХСТАН: ПРОБЛЕМЫ И НАПРАВЛЕНИЯ СОВЕРШЕНСТВОВАНИЯ

Аннотация. Настоящая статья посвящена анализу правового регулирования обращения и утилизации медицинских отходов в Республике Казахстан. Исследование охватывает вопросы нормативно-правового обеспечения, распределения компетенций государственных органов, международного опыта и правоприменительной практики в сфере обращения с медицинскими отходами. Особое внимание уделено анализу судебных и административных дел, связанных с нарушением экологических и санитарных требований, что позволяет оценить эффективность действующих правовых механизмов.

Исследование международного опыта правового регулирования утилизации медицинских отходов, в таких странах как Германия, Япония и Республики Корея показало, что наибольшую эффективность обеспечивают интегрированные модели управления, в которых контроль сосредоточен в едином центре и применяется современные цифровые системы прослеживания медицинских отходов. В ходе проведенного исследования удалось выявить ряд проблем, сдерживающих эффективное развитие системы обращения с медицинскими отходами в Республике Казахстан.

Научная новизна исследования заключается в формулировании авторских предложений по совершенствованию правового регулирования обращения с медицинскими отходами, включая разработку единого межведомственного подзаконного акта, нормативное закрепление централизованной цифровой системы учета и мониторинга, а также уточнение компетенций уполномоченных государственных органов.

Практическая значимость работы состоит в разработке конкретных юридических рекомендаций, направленных на повышение эффективности национальной системы государственного контроля, обеспечение санитарно-эпидемиологической и экологической безопасности и совершенствование законодательства Республики Казахстан в сфере обращения и утилизации медицинских отходов.

Ключевые слова: медицинские отходы; экологическое право; утилизация; государственное регулирование; безопасность.

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Сеилкасымова Р.А. – тақырыпқа қатысты ғылыми және нормативтік әдебиеттерге талдау жүргізді, әдебиеттер тізімін белгіленген талаптарға сәйкес рәсімдеуді қамтамасыз етті, сондай-ақ транслитерацияға, түйіндемелерді дайындауға, авторлар туралы мәліметтердің дәл көрсетілуіне және жариялануымның формальды талаптарының сақталуына жауапты болды.

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Войтчак Д. – разработал концептуальную основу исследования, определил ключевую научную проблему и сформулировал цели и задачи исследования. Подготовил разделы «введение» и «заключение», обосновал научную и практическую значимость темы и провел всесторонний анализ теоретических и правовых источников, имеющих отношение к проблеме исследования.
Нұрмуханкызы Д. - разработала методологии исследования, сбор и систематизацию эмпирических данных, а также аналитическую обработку и интерпретацию полученных результатов. Автор основного раздела статьи «Результаты и обсуждение».
Сеилкасымова Р.А. - осуществила анализ как научной, так и нормативной литературы, относящейся к теме, обеспечила составление списка литературы в соответствии с установленными стандартами, а также отвечала за транслитерацию, подготовку тезисов, точное указание информации об авторе и соблюдение формальных требований к публикации.

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Contribution of the authors:

Wojtczak D. - developed the conceptual framework of the study, identified the key scientific problem, and formulated the research objectives and tasks. She prepared the Introduction and Conclusion sections, substantiated the scientific and practical relevance of the topic, and carried out a comprehensive analysis of theoretical and legal sources relevant to the research problem.

Nurmukhankyzy D. - was responsible for designing and detailing the research methodology, collecting and systematizing empirical data, and performing analytical processing and interpretation of the results obtained. She authored and structured the main section of the article, Results and Discussion.

Seilkassymova R.A. - conducted the analysis of both scientific and normative literature related to the topic, ensured the compilation of the reference list in accordance with the established standards, and was responsible for transliteration, preparation of abstracts, accurate indication of author information, and compliance with formal publication requirements.

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