

Medical and Pharmaceutical Law in Erasmus+: Study of the Disciplines by Medical Students as a Basis for Training of Healthcare Professionals in Prevention of Medical Errors and Crimes

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Abstract. Within the framework of the Erasmus+ program, the significance of medical and pharmaceutical law is underscored as a pivotal element in training future doctors and healthcare managers, with the goal of preventing medical errors and criminal offenses in clinical practice. Emphasis is placed on equipping medical students with a thorough understanding of these disciplines, which serve as the foundation for ethical and competent patient care. Crucially, research has shown that dangerous treatment methods and errors during patient treatment often rank among the leading causes of injuries and harm, which reinforces the urgency of studying and implementing WHO recommendations to reduce medical mishaps. Numerous examples drawn from forensic pharmaceutical and forensic medical practice further illuminate the consequences of inadequate legislative compliance and substandard regulatory oversight, stressing the necessity of robust legal frameworks in the healthcare sector. To address these challenges, ongoing professional education and training courses for interns, doctors, pharmacists, and authorized persons responsible for incoming quality control of medicines will be

organized by the Private Scientific Institution "Scientific and Research University of Medical and Pharmaceutical Law." This initiative will be held on November 13–14, 2025, in Kyiv as part of the XXII International Multidisciplinary Scientific and Practical Conference "Medical and Pharmaceutical Law in the System of Legal Relations 'Doctor-Patient-Pharmacist-Lawyer-Expert/Forensic': Circulation of Medicinal Products from Production to Prescription." By providing an interdisciplinary platform for sharing best practices, examining up-to-date regulatory requirements, and reinforcing ethical standards, this conference will serve as a beacon for bolstering accountability and patient safety. Meanwhile, continuous exploration of the Erasmus+ project's potential in developing new educational programs for studying medical and pharmaceutical law remains a promising and evolving endeavor that holds great potential for advancing healthcare quality in Ukraine and worldwide.

Keywords: medical law, pharmaceutical law, forensic pharmacy, forensic medicine, Erasmus+, healthcare professionals, medical errors, crimes.

Introduction. Lifelong learning in the field of health care - this is emphasized by experts from the World Health Organization [1]. In fact, it is a continuation of the activities of the European Commission, which announced a new competition for the Erasmus+ Program for 2024 and adopted the annual program – Annual Work Programme 2024 [2]:

- ensuring highly effective, exciting, and adapted multilingual learning to meet diverse needs [1];
- providing opportunities for exchanges for studies, internships, training, and teaching;
- creating cross-border cooperation projects in the field of education, professional development, youth, and sports;
- bringing together citizens and organizations to work on 4 main priorities:
 - inclusion;
 - active citizenship;
 - democratic participation;
 - green and digital transformations.

Therefore, training in higher education institutions of future health care professionals in the disciplines of medical, pharmaceutical law, and forensic pharmacy is relevant. Analysis of typical

criminal examples from forensic pharmaceutical practice, medical errors related to violations of legislation in healthcare institutions by managers, doctors, nurses, pharmacists [3-5].

- Ensuring the harmonious development of physical and spiritual forces, high working capacity and long-term active life of citizens, eliminating factors that adversely affect their health, preventing and reducing morbidity, disability, and mortality, improving heredity;
- Providing medical care, carrying out activities of professionally trained medical workers, aimed at prevention, diagnosis, and treatment in connection with diseases, injuries, poisoning and pathological conditions, as well as in connection with pregnancy and childbirth;
- Prevention of causes and conditions that cause forensic pharmaceutical risks, criminal offenses in the circulation of medicines during the provision of medical and pharmaceutical care in the system of legal relations "doctor-patient-pharmacist-lawyer".

Unfortunately, not all doctors and heads of healthcare institutions improve their qualifications in medical and pharmaceutical law, incoming quality control of medicines, and accessible pharmacotherapy. As a result, in their professional activities they allow violations of criminal law [6] or labor law [7].

Leads to premature dismissal from work for failure to comply with ethical, disciplinary, and professional conduct. Thus, doctors of the Municipal Enterprise "Rivne Regional Antitumor Center" of the Rivne Regional Council during a scientific and practical conference on the topic "Current Issues of Radiation Oncology in Ukraine" (August 21-22, 2024), in the hotel and restaurant complex "Sofia" arranged dances on tables. After the video from the event was distributed on the Internet (Facebook), the Chairman of the Rivne Regional Council, who consulted with the Chairman of the Rivne Regional Military Administration reported on the inadmissibility of such behavior of doctors under martial law and announced personnel changes [8-12]. That is, on September 2, 2024, it became known about the dismissal of the director and 3 deputies of the specified healthcare institution (medical director, deputy medical director for surgical work, deputy medical director for clinical oncology), who wrote applications for dismissal.

Cases of medical negligence and negligence, failure to comply with standards and protocols of medical treatment, ignoring the principles of medical and pharmaceutical law [3], and carelessness in establishing diagnoses, especially when it comes to the life and health of patients, are becoming more common, and as a result, a criminal offense is being committed [13].

- An 11-year-old boy was hospitalized in the surgical department of the hospital with complaints of abdominal pain, fever, and general weakness. The doctor in the emergency department preliminarily diagnosed the child with acute appendicitis and sent him for further examination and treatment to the surgical department.
- After additional diagnostics, which included laboratory tests, the head of the surgical department confirmed the diagnosis and decided to perform surgery. However, as it later turned out, the doctor did not conduct the necessary additional examinations, in particular, an ultrasound examination and gastroscopy, and did not involve a pediatrician and an otolaryngologist in the consultation.
- The consequences of an incorrect diagnosis, i.e. after the operation it turned out that the child did not have acute appendicitis, but an appendicular infiltrate, which could be treated without surgery. Instead of a complex operation, it was enough to perform punctures with a diameter of up to 1 cm with the introduction of surgical instruments. Thus, due to an incorrect diagnosis and improper examination, the child was subjected to an unnecessary operation, which led to serious consequences for her health.
- The police emphasize that the head of the surgical department, suspected of this offense, due to his negligence and unscrupulous performance of professional duties, endangered the life and health of the child, the doctor was declared suspicious under Part 1 of Article 140 of the Criminal Code of Ukraine.

Criminal and legal, medical and pharmaceutical, socio-economic problems in the system of legal relations "doctor-patient-pharmacist-investigator-prosecutor-lawyer-judge" emphasize the importance of studying the discipline of medical and pharmaceutical law by medical students [14-

33], organizing the work of authorized persons (head/senior nurses, nurses; pharmacists or pharmacists of hospital pharmacies), who are appointed by order of the head of the healthcare institution – responsible for incoming quality control of medicines. Requires support from the European Program for 2025 Erasmus + to provide opportunities for exchanges for training, training, internships, internships, teaching future doctors, teachers, and managers of healthcare institutions on the prevention of medical errors and criminal crimes during professional activities.

The purpose of the study was to research the relevance of studying medical and pharmaceutical law in Erasmus+ projects for the prevention of medical errors and criminal crimes in the activities of healthcare professionals.

Materials and methods. The basis of the study is interdisciplinary imperative materials, laws of Ukraine, resolutions of the Cabinet of Ministers of Ukraine, orders of the Ministry of Health of Ukraine, examples of forensic pharmaceutical practice, publications in state and regional publications, websites of the Verkhovna Rada of Ukraine, prosecutor's office, police, state authorities and local governments.

The research methods were bibliographical, graphic, documentary, regulatory and legal, comparative, systemic, tabular, forensic pharmaceutical, retrospective.

The research of the article is a fragment of the research works of:

- ✓ Private Scientific Institution "Scientific and Research University of Medical and Pharmaceutical Law" on the topic "Multidisciplinary study of post-traumatic stress disorders during war among patients (primarily combatants)" (state registration number 0124U002540, implementation period 2024-2029);
- ✓ State institution "Lugansk State Medical University" on the topic "Conceptual interdisciplinary approaches to pharmaceutical provision and availability of medicines taking into account organizational-legal, technological, analytical, pharmacognostic, forensic-pharmaceutical, clinical-pharmacological, pharmaco-economic, marketing and socio-economic competencies (state registration number 0123U101632, period 2023-2027).

Need to note that over the past 3 years (2019-2021), the courts of appeal have considered 281 cases on claims of patients and lawyers against healthcare institutions. Under article 140 of the criminal code of Ukraine, the courts passed only 6 verdicts: 5 – convictions, 1 – acquittal. At the same time, the courts of first instance imposed a sentence in the form of restriction or deprivation of liberty for a term of two years and imposed an additional punishment in the form of deprivation of the right to practice medicine for a certain period, which is apparently due to the fact that investigators collect an incomplete evidence base due to the lack of independent qualifications, falsification of medical documentation, qualified forensic medical examination, and the quality of completeness and objectivity in conducting forensic medical, forensic pharmaceutical and other examinations. Thus, Kharitonov O. believes that [34]:

- ❖ significant part of patients does not reach each subsequent link of the judicial system;
- ❖ due to the low level of legal culture of patients, the lack of social advertising that would explain where to turn for the protection of patient rights;
- ❖ insufficient willpower of individuals to exercise judicial protection of their rights, which may be associated, for example, with a severe course of the disease;
- ❖ among patients there is a widespread fear of possible disclosure of information about the diagnosis, as well as doubts about the effectiveness of applying to court; victims do not want to get involved in litigation, spend their time and money on it, and therefore in most cases medical errors get away with it;
- ❖ there are problems of difficulty in collecting evidence in cases of possible medical errors and the lack of independent expertise; in Ukraine there is an unspoken principle according to which a doctor covers another doctor, just like the heads of medical institutions - their subordinates: they rewrite documentation, falsify data in medical records, destroy evidence;
- ❖ patients are often denied copies of medical records indicating the diagnosis, the results of tests and examinations, as well as the record itself;

- ❖ the importance of forensic medical examination, which, as practice shows, was carried out in 68.4% of cases won in favor of patients;
- ❖ forensic and medical examination is subordinate to the ministry of health and receives funding from it, which makes Ukraine the only one in Europe where there is no independent forensic medical examination. This often results in biased conclusions of experts who cover for their fellow doctors. Patients are unable to change this fact; this issue is more likely to be within the competence of the cabinet of ministers of Ukraine and the ministry of health of Ukraine;
- ❖ the superiority of civil proceedings in the field of considering medical cases over criminal ones. The patient will rather prefer to defend his rights in a civil court than to seek the truth in the framework of a criminal investigation, because his interest lies primarily not in putting the doctor behind bars, but in receiving compensation in monetary terms for the violation committed by the doctor. The amounts of material damages that patients ask to be compensated for range from 2 thousand UAH to 400 thousand UAH;
- ❖ according to the unified state register of court decisions, about 80% of claims are filed against doctors of the specialties: "surgery", "obstetrics and gynecology", "neonatology". It should be noted that 64.02% of cases of compensation for damage by doctors in a large amount were associated with violations by surgical doctors (in particular, cases involving anesthesiologists and resuscitators). This is explained by the fact that when providing such care, there is an increased risk of harm to the patient. In addition, sometimes a doctor may think that he is taking a justified risk that does not justify itself;
- ❖ among the causes of medical errors, it was established that: – in 20-22% of cases there was insufficient examination of the patient; – in 16% of cases, inattentive study of the medical record; – in 6% of cases, incorrect interpretation of the results of laboratory tests;
- ❖ among the reasons for refusing to satisfy claims, the incomplete composition of the civil offense prevailed (42.11%), the absence of violations of the norms and rules of providing medical care in the actions of medical workers (42.11%);
- ❖ judges decide differently on the issue of compensation for moral damage to the patient, that is, a citizen asks to compensate for an amount that is too large in the court's opinion (for example, 500 thousand UAH), so the claim is partially satisfied (the patient receives a smaller amount). This indicates that there is a problem with the fact that the patient cannot realistically assess or prove that he was caused moral damage for exactly these 500 thousand UAH that he is requesting, which indicates the absence of certain procedures for calculating such an amount and a list of evidence that should have served as a justification for determining the amount of the claim.

Therefore, it is important to consider examples from forensic and forensic pharmaceutical practice about crimes committed by doctors while providing medical care in healthcare facilities and the algorithm of articles on which a pre-trial investigation is conducted.

Example from forensic and medical practice No. 1. The prosecutor of the Rivne Regional Prosecutor's Office sent a formal accusation to the court against the participants of an organized criminal group. The group included 1 head of a medical institution (organizer) and 2 subordinate doctors (performers), who are charged with crimes under Part 5 of Article 191, Part 1 of Article 366, Part 2 of Article 209, Part 2 of Part 4 of Article 358 of the Criminal Code of Ukraine (actions related to large-scale embezzlement, forgery of official documents and their use, legalization of illegally obtained funds) [35, 36].

During the pre-trial investigation, which was conducted by the investigator of the Main Directorate of the National Police of the Rivne region with the operational support of the employees of the State Criminal Investigation Department in the Rivne region and the State Criminal Investigation Department of the National Police of Ukraine, it was established that in the period from January 2021 to June 2023, the head of one of the Communal Enterprises "Health Care Institution", located in the city of Rivne, created, planned the activities, distributed the roles of accomplices and personally led an organized criminal group with the aim of embezzling funds from the local budget of the Rivne community. Thus, the organizer – the chief physician (official) allegedly registered 2

doctors for work, provided fictitious accounting of their working hours, and organized and ensured the accrual and payment of wages. The accomplices – the 2nd doctor, for their part, prepared and submitted to the healthcare institution every month knowingly forged (fictitious) diaries of the doctor's working hours, in which they entered information about the patients to whom the fictitious "doctors" supposedly provided medical care. However, these "doctors" did not even appear at their workplaces or perform their official duties, since at that time these doctors were engaged in private medical practice in a private healthcare institution located in another settlement.

As established during the forensic accounting examination in the period from January 2021 to June 2023, the members of the group and two fictitious "doctors" committed the following:

- ✓ about 6 thousand patients were fictitiously "treated" only on paper, while the patients did not receive medical and pharmaceutical care;
- ✓ over 500,000 UAH were spent on paying fictitious "doctors", part of the money was legalized and divided.

During searches authorized by the court, almost 240 thousand hryvnias in various currencies, bank cards, documentation and draft notes were seized from the doctors' homes.

All members of the organized criminal group are currently under house arrest, and the head of the institution has also been removed from his position. The pre-trial investigation is being conducted by investigators of the National Police in the Rivne region with operational support from employees of operative departments in area.

Example from forensic medical, and pharmaceutical practice No. 2. The investigator of the Main Police Department in Ternopil region under the procedural guidance of the prosecutor of the Ternopil Regional Prosecutor's Office initiated criminal proceedings and filed them in the registry in accordance with Part 1 of Article 140 of the Criminal Code of Ukraine [37, 38].

During the pre-trial investigation, it was established that on February 16, 2023, 22 patients in the city of Ternopil immediately turned to a healthcare institution with complaints of a sharp deterioration and loss of vision, after the treatment they underwent in the ophthalmology department of the Municipal Non-profit Enterprise "Chortkiv Central City Hospital" of the Chortkiv City Council. The patients claimed that they began to have vision problems after certain procedures were performed by doctors. All patients were hospitalized to the ophthalmology department of the city of Ternopil and the police were informed about this.

At the same time, it was established that the doctors who treated the affected patients promised them to fully restore their vision thanks to an effective medicine. However, after the injections, the patients' well-being deteriorated sharply, 2 patients lost their vision completely, 13 patients went blind in one eye, and the other patients continued to be treated.

The investigators also established that:

- after the forensic medical examination, the doctors had in circulation (stored), that is, administered to patients a "counterfeit drug" prohibited for use;
- according to the conclusions of the forensic chemical and pharmaceutical examination (counterfeit, which did not correspond to the original drug);
- for each injection, the doctors demanded and received from the patients an unofficial payment of 2,000 UAH for the operation.

The prosecutor of the Ternopil regional prosecutor's office sent to the court indictments in criminal proceedings against three doctors and the head of the ophthalmology department of the district health care institution, who, depending on the actions committed, were charged with Part 1 of Article 140, Part 4 of Article 368-4, Part 2 of Article 367 of the Criminal Code of Ukraine [39-41].

During the pre-trial investigation, which was carried out by the investigator of the Main Directorate of the Ternopil region, it was established that the head of the ophthalmology department of the district health care institution sold patients a medicine prohibited for use in Ukraine, which is not intended for treatment in ophthalmological practice. From March 2022 to February 2023, 3 doctors of the district health care institution, on the instructions of the head of the department, illegally performed the following actions, namely:

- prescribed for treatment, and then administered to patients a drug prohibited for circulation;

- illegally received from patients from 8 to 34 thousand UAH, demanding this money for the administration of the drug;
- according to the conclusions of the forensic medical examination, 18 patients suffered because of illegal “treatment” (due to complications of the disease after the administration of the drug, 7 patients underwent eye removal surgery);
- 15 patients lost vision in one eye;
- 3 patients lost vision in both eyes (Citizen M. became a disabled person of the 1st group) [42].

Example from forensic and medical practice No. 3. An investigator of the investigative department of the Main Police Department in Khmelnytskyi region, under the procedural guidance of the prosecutor of the Khmelnytskyi Prosecutor's Office, registered criminal proceedings on the fact of exposure of the head doctor of one of the departments of the Starokostyantynivska Multi-Profile Hospital, who was declared suspicious under Part 3 of Article 369-2 (abuse of influence) of the Criminal Code of Ukraine [43, 44].

During the pre-trial investigation, it was established that on 02.07.2024 under the operational escort of the State Security Service of Ukraine, a medical examiner of one of the departments of the Municipal Non-Profit Enterprise "Starokostyantynivka Multi-Profile Hospital" of the Starokostyantynivka City Council of the Khmelnytskyi District of the Khmelnytskyi Region was detained in his office. He, abusing his position, demanded, and received 12 thousand dollars from a local resident to produce the necessary documentation and influencing the members of the Medical Commission to grant him the 2nd group of disability.

On the eve, the medical examiner of the department received 2 thousand US dollars as a deposit, and later, when receiving the principal amount of 10 thousand US dollars, he was exposed for the crime committed and in the presence of witnesses, the money was confiscated.

The doctor was detained in accordance with Article 208 of the Criminal Procedure Code of Ukraine, currently the investigator has initiated before the prosecutor and the court that the court choose a preventive measure for the doctor in the form of detention for the period of investigation. Forensic, fingerprint and other examinations have been ordered. The pre-trial investigation is ongoing.

The above examples from forensic medical, and forensic pharmaceutical practice (No. 1-3) indicate that [45, 46]:

- doctors, heads of departments, chief doctors do not properly undergo advanced training in medical and pharmaceutical law;
- some of them abuse their official position, engage in bribery, inadequately control the quality, safety, and effectiveness of medicines, violate the norms of patient rights protection established by the Constitution of Ukraine, do not fully comply with the Resolutions of the Cabinet of Ministers of Ukraine, Orders of the Ministry of Health of Ukraine and other laws and regulatory legal acts;
- chief doctors, directors of Communal Enterprises and Departments of health care, which are within the structure of state authorities and local self-government bodies, do not send authorized persons for advanced training for incoming quality control of medicines in health care institutions;
- incoming quality control of drugs is carried out by authorized persons (head/senior nurses, nurses; pharmacists or pharmacists of hospital pharmacies), appointed by order of the head of the healthcare institution as responsible for the quality of medicines;
- information about the authorized person (surname, contact phone number) and the form of contact (phone, fax, e-mail) are reported within ten days after the appointment of the authorized person to the territorial body of the State Medical Service (territorial bodies) at the location of the healthcare institution;
- eye infections can cause secondary pathologies (cataracts, glaucoma, retinal detachment, which can include loss of vision without recognition of the underlying cause) [47-53].
- drugs used to treat eye infections (ethambutol, linezolid) can cause loss of vision. Para- or post-infectious syndromes may not be identified and are considered autoimmune non-

infectious manifestations. The role of immune-mediated pathology after infections is complex and incompletely understood;

- the global visual burden of EIDs (dengue fever, Ebola virus disease, COVID-19) indicates that assessing the global visual burden of infectious diseases is likely to be extremely difficult;
- due to the negligence of doctors, 20 patients lost their vision, which was confirmed by forensic examinations;
- the drug used for injections was falsified;
- according to the police, the specified drug was brought to the medical facility by the head physician of the health care facility;
- the first suspicion was raised against one of the doctors who administered the falsified drug;
- the court determined a preventive measure – almost a million UAH of bail;
- due to a sharp deterioration in vision, 22 patients of the Chortkiv hospital complained in mid-February, and the day before, on the recommendation of ophthalmologists, they received injections to improve vision using the drug Altusan; instead, their vision began to disappear altogether; within 24 hours, all patients were taken to the regional hospital, where they underwent urgent operations.

Regarding the relevance of the issue of liability of medical workers for offenses committed or admitted during the performance of their professional activities, Filonenko E. notes that the provisions of the Law of Ukraine “Fundamentals of the Legislation of Ukraine on Health Care” establish the legal, organizational, economic and social principles of health care in Ukraine, as well as the peculiarities of the legal status of doctors, and in accordance with Art. 80, that is, persons guilty of violating the legislation on health care bear civil, administrative or criminal liability in accordance with the legislation of Ukraine [3, 54].

Modern criminal and legal, disciplinary, and administrative, forensic and medical, forensic and pharmaceutical, organizational and management classification of medical errors is extremely important for their qualification. The author Dyolog M.I. proposes to divide them into six groups [55]:

1st group: **diagnostic errors** – include causal actions of doctors, regarding the recognition of diseases and their complications, negligence or misdiagnosis of the disease or complication. The main reasons - are ignoring or inept use of the anamnesis, incomplete examination of the patient;

2nd group: **medical-tactical errors** – the result of diagnostic miscalculations (errors in the choice of research methods and in the assessment of their results); - associated with incorrect clinical diagnoses, because of such diagnoses, the patient is prescribed treatment that does not correspond to the true nature of the disease, and at the same time the necessary therapy is not carried out;

3rd group: **technical errors** – during diagnostic and therapeutic procedures, manipulations, techniques, operations; - incorrectly selected research method; - error in identifying indications or contraindications to any of the methods of therapy; - incorrect prescription of drugs; -miscalculation in prescribing the dosage of the drug; - miscalculation in the side effects of drugs, etc.;

4th group: **organizational errors** – are detected during the establishment of types of medical care, the creation of the necessary conditions for the functioning of a particular service; - are made in the event of an incorrectly organized medical process; - poor-quality, understaffed workplaces of medical workers.;

5th group: **deontological errors** – in the behavior of the doctor, his communication with the patient, his relatives, colleagues, middle and junior medical personnel, pharmacists; - neglect of the principles of ethics and moral norms in relation to patients; -violation of the prescriptions stipulated by the Code of Ethics of a Physician, the International Code of Medical Ethics;

6th group: **errors in filling out medical documentation** - unclear, unclear records of operations; - incorrect maintenance of the postoperative diary; - errors in drawing up discharge statements in the event of referring the patient to another medical institution).

In turn, as Skrynnikova K.O. emphasizes, the refusal of the Ukrainian legislator to legally enshrine in regulatory legal acts such concepts as “medical (medical) error”, “defect of medical care”, “adverse outcome”, “negligence or carelessness in providing medical care” and other “acts” causes

insufficient effectiveness of legal mechanisms for qualifying the actions (inaction) of a doctor (medical worker) that resulted in harm to the life and health of citizens/patients when providing them with medical care, as well as mechanisms that ensure compensation for the harm caused, which requires [56]:

- establish in the legislation uniform criteria for assessing the actions (inaction) of doctors (medical workers) who made a mistake in their professional activities. The absence of established special conditions in regulatory acts, in practice, complicates the legal assessment (qualification) of medical (medical) errors, and, accordingly, prevent their occurrence in the future;
- only preventive preliminary control within the medical care system can offer the most effective means of preventing medical (medical) errors;
- development of mechanisms of preliminary, preventive control, which will allow to record and predict potential complications and problems in the activities of medical institutions, associated with systematic monitoring of the threats of medical (medical) errors before they occur. Within the framework of the specified control, it is worth introducing certain measures to prevent medical (medical) errors (special training of doctors (medical workers) in methods of preventing, detecting and qualifying medical (medical) errors, assessing their threats, etc.).

It is worth noting that the introduction of theoretical foundations of the principles of medical and pharmaceutical law into the organization of the work of healthcare institutions and pharmacy institutions in general, and the professional activities of doctors and pharmacists in particular, is of practical importance in preventing the causes and conditions for committing medical (pharmaceutical) errors that have signs of criminal crimes.

It is the holding of interdisciplinary, international scientific and practical conferences, round tables, symposiums, panels, cycles of thematic development, advanced training and other events that will help highlight the problems of the issue, discuss them, and propose measures to eliminate them.

For this purpose, a medical law forum was held on December 03, 2021. The event became a powerful platform for the exchange of views and experience between lawyers, representatives of state bodies and medical institutions, and scientists, which considered issues regarding [57]:

- medical errors and criminal liability;
- protection of doctors' rights;
- problems associated with tendering in healthcare institutions;
- features of conducting forensic medical examinations;
- specifics of the economic activities of healthcare institutions in decentralization;
- protection of patients' rights;
- ensuring the right to preserve medical information about the patient;
- mechanisms for resolving conflicts with patients.

Thus, during the round table "Ethics and Academic Integrity in Education and Medicine" in which students of the first (bachelor's) level of higher education, representatives of student self-government, scientific and pedagogical and pedagogical workers of the Municipal Institution "Kamensk Professional Medical College" of the Dnipropetrovsk Regional Council" took part, they noted that [58]:

- ✓ proposed to create a version of the glossary of basic concepts on academic integrity, to place them in the information corners of classrooms and laboratories;
- ✓ observance of academic integrity is necessary for all participants in the educational process - this ensures the quality of knowledge, because according to Part Seven of Article 42 of the Law of Ukraine "On Education", the types of academic responsibility (including additional and/or detailed) of participants in the educational process for specific violations of academic integrity can be determined both by special laws and by the internal regulations of the educational institution, subject to approval (consent) by the main collegiate management body educational institution by the pedagogical council;

- ✓ integrity is the desire to do some actions for the benefit of other people (patients), for the sake of society, a virtuous citizen is one who is guided not by his own benefits, advantages, but is subordinated to humanity, decency, and justice;
- ✓ effective development of education and science is impossible without compliance with the standards and principles of academic integrity, it is precisely this that is an indicator of the development of society.

In turn, the National Bar Association of Ukraine invites lawyers with knowledge and experience in the field of medical and pharmaceutical law to join the specialized committee of the National Bar Association of Ukraine. The Committee on Medical and Pharmaceutical Law and Bioethics of the National Bar Association of Ukraine announced a competition for regional representatives for [59]:

- development of draft regulatory legal acts in the field of health care, proposals for them and current legislation aimed at optimizing the protection of human rights, and submits them for consideration by the Bar Association of Ukraine;
- generalization and analysis of best practices in law enforcement and law enforcement in the field of medical and pharmaceutical law;
- preparation of analytical and methodological materials for lawyers in the field of medical and pharmaceutical law, legal foundations of bioethics and public health law;
- cooperation with specialized higher educational institutions for the purpose of joint participation in scientific, research, grant programs and projects aimed at the development of medical and pharmaceutical law, legal foundations of bioethics, public health law;
- interaction with government bodies, local governments, courts, international institutions, and legal and physical persons to develop specialized areas and ensure human rights;
- cooperation with specialized legal clinics and medical and legal clinics to facilitate the provision of free legal assistance to the population in medical matters and the dissemination of practical knowledge among students;
- cooperation with public associations to prepare proposals for solving socially important issues related to ensuring human rights in the field of healthcare for consideration by government bodies in their work.

To prevent medical errors, the teaching staff of the Department of Pedagogy, Psychology, Medical and Pharmaceutical Law invited doctors and pharmacists to study for the thematic development cycle "Current Issues of Medical and Pharmaceutical Law" (18.10.2023-01.11.2023). Important issues were considered [60]:

- How to implement certain measures to prevent and prevent professional misconduct by medical professionals, including crimes?
- How to properly interact with the police (internal affairs agencies) based on the requirements of the current legislation of Ukraine?
- What rights and obligations do doctors have in relation to patients in the context of informed consent, confidentiality, and medical errors?
- How is medical practice insurance regulated and how can doctors protect themselves from legal risks?

The above cycle is a continuation of the internship and postgraduate education cycles, which were conducted by the Department of Medical and Pharmaceutical Law, General and Clinical Pharmacy of the Kharkiv Medical Academy of Postgraduate Education during 2011-2022.

It is important to consider the decision of the Cassation Criminal Court, which in its resolution of February 1, 2024 in case No. 569/14238/16-k noted that [61]:

- ❖ in the case when the serious consequences for the patient are not related to the failure or improper performance of their professional duties by the medical worker, but occurred because of other circumstances, liability under Art. 140 of the Criminal Code of Ukraine is excluded;
- ❖ \if during urgent hospitalization of a child the doctor stated the absence of appendicitis (peritonitis), with the suspicion of which the patient was taken to the hospital, and instead a

serious disease (Crohn's disease) was detected and its rapid course and features of the course led to the death of the minor victim due to the already formed complex of irreversible pathological changes in the child's body, which could have been prevented only with timely diagnosis, then the liability of the emergency surgeon of the children's department under Art. 140 of the Criminal Code of Ukraine is excluded, taking into account the late request for medical care and the real impossibility of providing the patient with the necessary medical care;

- ❖ according to the conclusions of the forensic medical examinations, at the stage of hospitalization of the minor victim to a medical institution, the main complex of pathological changes in him had already been formed and could objectively be masked under mild clinical symptoms;
- ❖ all the evidence collected and examined in the courts in their entirety indicates severe Crohn's disease in the minor, its rapid course, and the peculiarities of the course, which led to his death, which the surgeon did not have sufficient opportunity to diagnose;
- ❖ the courts concluded that none of the examinations indicated that the serious consequences – the death of the minor occurred precisely because of the improper performance by the surgeon of his professional duties because of his negligent attitude towards them.

WHO experts note that unsafe treatment methods and errors in the treatment of patients are the main cause of injuries and avoidable harm in health care facilities, and the total costs of countries worldwide associated with errors in the treatment of medicines are estimated at 42 billion US dollars per year [62-64]. Thus, medical errors can occur:

- at different stages of the circulation process (use, administration, etc.) of medicines;
- when weak treatment systems or human factors (fatigue, poor environmental conditions, lack of personnel) and those that affect the practice of prescribing, transcription, dispensing, administration, and monitoring, which can lead to serious harm, disability and even death.

To prevent medical errors, WHO experts:

- ✓ developed recommendations for medical practice, including to eliminate the frequency and impact of errors in treatment;
- ✓ the theme of the third Global Patient Safety Challenge “Medicines Without Harm” was defined (officially adopted on 29.03.2017 at the 2nd Global Ministerial Summit on Patient Safety in Bonn, Germany);
- ✓ reducing harm associated with medicines, namely “Medicines Without Harm” aims to reduce serious avoidable harm by 50% worldwide over the next 5 years;
- ✓ proposed to implement resolution WHA72.6 through the Global Action Plan for Patient Safety 2021-2030 and the celebration of World Patient Safety Day, which is celebrated on 17 September each year;
- ✓ improving patient safety performance by developing standards, indicators, data collection tools and assessments;
- ✓ promoting research priorities, promoting research on the implementation and support of digital and innovative approaches to improve patient safety;
- ✓ providing strategic support for the establishment and implementation of incident reporting, training, and surveillance systems.

In the Strategic Framework for the Global Patient Safety Challenge, WHO experts describe four areas of concern (Fig. 1) [63]:

- patients and the public;
- healthcare professionals;
- medicines and systems;
- treatments.

The framework describes each domain through four subdomains, three key areas of action, namely polypharmacy, high-risk situations, and transition from care, are relevant to each area and thus form an inner circle.



Fig. 1. WHO indicates the strategic structure of the Global Patient Safety Challenge, experts describe four areas of the task (patients and the public; healthcare professionals; medicines and systems; treatment methods).

The relevance of the topic of medical errors in the system of legal relations "doctor (healthcare institution)-patient-pharmacist-lawyer-expert/forensic scientist" is beyond doubt. This is also noted by WHO experts, that is, about unsafe treatment methods and errors during the treatment of patients, which is the main cause of injuries and avoidable harm in healthcare institutions. That is, the need for legal protection at the stage of pre-trial investigation, in the prosecutor's office and in court, both for the victim-patient and the doctor who provided treatment, prescribed medicines, performed surgical intervention, etc.

Therefore, the teaching staff of the Private Scientific Institution "Scientific and Research University of Medical and Pharmaceutical Law" and the Estonian Scientific Publishing House SSP OÜ initiated the XXII International Multidisciplinary Scientific and Practical Conference "Medical and Pharmaceutical Law in the System of Legal Relations "Doctor-Patient-Pharmacist-Lawyer-Expert/Forensic Analyst" to be held on November 13-14, 2025 in Kyiv: Circulation of Medicinal Products from Production to Prescription". Heads of healthcare institutions, in accordance with the Order of the Ministry of Health of Ukraine dated December 16, 2003 No. 584 "On Approval of the Rules for Storage and Quality Control of Medicinal Products in Healthcare Institutions", must [65] ensure strict incoming quality control of medicinal products. In forensic practice, artificial intelligence (AI) systems may be needed to process the complex interaction between input information on diagnostics, cause-and-effect relationships, and consequences of disease treatment (medical errors), on the one hand, and resource mobilization and joint initiatives in the health sector, on the other. At the same time, threats to health care due to medical errors are increasing (disability, fatalities, bribery, abuse of office, violation of the rules for the use of medicinal products, etc.). AI, already implemented in various areas of health care in the EU and the USA, opens a new era of information collection, analysis, synthesis, and generalization [66-69].

Thus, the issue of the need to initiate support for the inclusion in the Erasmus+ Program and thus the mandatory study by medical students of the updated program on medical and pharmaceutical law as the basis for the training of future doctors and heads of healthcare institutions (authorized persons for incoming quality control of medicines) to ensure patient safety, as well as the prevention of causes and conditions that contribute to the commission of medical errors, and as a consequence of criminal crimes, is considered.

Further research on the prospects of the Erasmus+ project activity for the development of educational programs for the study of medical and pharmaceutical law is promising and is ongoing.

Conclusions. The role of medical and pharmaceutical law in the Erasmus+ program is emphasized. The need for medical students to study the specified disciplines as the basis for the training of future doctors and heads of healthcare institutions to prevent medical errors and criminal crimes is emphasized. Dangerous treatment methods and errors during the treatment of patients as the main cause of injuries and harm are presented. WHO recommendations for preventing medical errors were studied. Examples from forensic pharmaceutical and forensic medical practice related to violations of legislation and regulatory legal acts on the organization of the work of doctors and managers were analyzed. The need to train interns, conduct courses of postgraduate education and professional training (doctors, pharmacists, authorized persons for incoming quality control of medicines) based on the Private Scientific Institution "Scientific and Research University of Medical and Pharmaceutical Law" was determined. It was proposed to hold the XXII International Multidisciplinary Scientific and Practical Conference "Medical and Pharmaceutical Law in the System of Legal Relations "Doctor-Patient-Pharmacist-Lawyer-Expert/Forensic" in Kyiv on November 13-14, 2025: Circulation of Medicines from Production to Prescription" was shown. The prospects for further activities to develop Erasmus+ projects for the study of medical and pharmaceutical law were shown.

Declaration of conflict interest. The authors declare no potential conflicts of interest with respect to the research, authorship, and/or publication of this article. The authors confirm that they are the authors of this work and have approved it for publication. The authors also certify that the obtained clinical data and research were conducted in compliance with the requirements of moral and ethical principles based on medical and pharmaceutical law, and in the absence of any commercial or financial relationships that could be interpreted as potential conflict of interest.

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