CZU: 343.98:61:616.31:617.5 DOI: https://doi.org/10.5281/zenodo.19564888

Constantin PISARENCO[1]
constantin.pisarenco@gmail.com

CHARACTERISTICS OF MEDICAL-LEGAL EXPERTISE IN THE INVESTIGATION OF NEGLIGENCE CRIMES COMMITTED DURING THE PROVISION OF MEDICAL CARE IN THE FIELD OF DENTISTRY AND AESTHETIC MEDICINE

***Abstract**: The study examines the particularities of forensic expertise in investigating crimes of negligence associated with the provision of medical assistance in dentistry and aesthetic medicine. The relevance of the topic is determined by the increase in outpatient interventions and the expansion of aesthetic procedures, which increase the risk of litigation and the difficulty of distinguishing between acceptable medical risk, inevitable complications, and deficiencies in care. The aim of the research is to identify the specific tasks and vulnerabilities of forensic expertise in these areas, as well as to formulate guidelines for the correct establishment of causality with. The methodology includes an analysis of the national regulatory framework, the case law of the European Court of Human Rights, and the clinical literature on dental and aesthetic complications. The results highlight the central role of medical documentation, device traceability, and informed consent in substantiating the expert's conclusions.*

***Keywords**: forensic medical examination; negligent offences in medical practice; dental care; aesthetic medicine; defect in the provision of medical care.*

CARACTERISTICILE EXPERTIZEI MEDICO-LEGALE ÎN INVESTIGAREA INFRACȚIUNILOR DIN NEGLIJENȚĂ COMISE ÎN TIMPUL ACORDĂRII ASISTENȚEI MEDICALE ÎN DOMENIUL STOMATOLOGIEI ȘI MEDICINEI ESTETICE

***Abstract**: Studiul examinează particularitățile expertizei medico-legale în investigarea infracțiunilor din neglijența asociat acordării asistenței medicale în stomatologie și medicina estetică. Actualitatea temei este determinată de creșterea intervențiilor ambulatorii și de extinderea procedurilor estetice, care sporesc riscul litigiilor și dificultatea delimitării dintre riscul medical ac-*

[1] **Associate Professor, Doctor of Law, Department of Public Law, Free International University of Moldova (ROR: https://ror.org/054jx1t36), e-mail: office@ulim.md, ulim@ulim.md; e-mail: constantin.pisarenco@gmail.com; ORCID ID: https://orcid.org/0000-0001-5548-4653**

ceptabil, complicațiile inevitabile și deficiențele de îngrijire. Scopul cercetării constă în identificarea sarcinilor specifice și a punctelor vulnerabile ale expertizei medico-legale în aceste domenii, precum și în formularea unor repere pentru stabilirea corecta a legăturii de cauzalitate. Metodologia include analiza cadrului normativ național, jurisprudența Curții Europene a Drepturilor Omului și literatura clinică privind complicațiile stomatologice și estetice. Rezultatele evidențiază rolul central al documentației medicale, al trasabilității dispozitivelor și al consimțământului informat în fundamentarea concluziilor expertului.

***Cuvinte-cheie**: expertiză medico-legală; infracțiuni din culpă în domeniul medical; asistență stomatologică; medicină estetică; defect al acordării asistenței medicale.*

1. INTRODUCTION.

Dentistry is an independent clinical discipline focused on the diagnosis, treatment, and prevention of diseases of the dental and maxillary system. However, in modern conditions, it increasingly works in close collaboration with dental, plastic and cosmetic surgery. This integration is determined by the anatomical and functional relationship of the dental and maxillary system with the facial skeleton and soft tissues, as well as by the growing importance of the aesthetic component in dental treatment.

Dental surgery and maxillofacial surgery are based on the general principles of surgery and occupy a delimiting position between dentistry and general surgery, providing treatment for injuries, defects, and diseases of the facial region. Modern dental procedures, including implantation, orthopedic restoration of teeth, and occlusal correction, directly influence facial proportions, soft tissue contours, and facial expression, which brings dentistry closer to the challenges of plastic and aesthetic surgery.

In turn, plastic and aesthetic surgery can complement dental treatment by correcting deformities and asymmetries that cannot be addressed exclusively by dental methods. This interaction creates a unified clinical space for facial reconstruction and harmonization.

Aesthetic medicine is a transdisciplinary field that integrates cosmetology, plastic and cosmetic surgery into a single system. Within this system, cosmetology focuses primarily on conservative and minimally invasive methods, while aesthetic surgery offers more radical corrections through surgical interventions. Their relationship is built on the principles of clinical continuity, complementarity, and shared responsibility for medical outcomes and patient safety, which is fundamental to both clinical practice and the medico-legal assessment of the quality of care provided.

Dentistry and aesthetic medicine present a combination of advanced technology and high levels of conflict. On the one hand, interventions are increasingly standardized, based on protocols and regulated by material and product safety requirements. On the other hand, the outpatient format, commercial component, and increased social significance of the outcome lead to the perception of an adverse outcome by the patient as a breach of the promised outcome rather than a statistically probable complication. In the field of criminal law, this increases the risk of two opposing biases: the criminalization of clinically acceptable complications and, conversely, the medicalization of care defects, which should be subject to legal assessment.

The national criminal law framework allows for liability for acts of negligence that result in serious harm if there is proven professional misconduct and a causal link[1]. How-

[1] Parliament of the Republic of Moldova. *Criminal Code of the Republic of Moldova*, No. 985-XV of 18.04.2002.

ever, in dentistry and aesthetic medicine, establishing these elements requires an expert assessment. A treatment defect may be associated not only with the technique of manipulation, but also with diagnosis, planning, product selection, prevention of complications, and post-procedural care. The causal relationship often includes multifactorial components: anatomical characteristics, comorbidity, patient behavior, material characteristics, as well as the promptness of recognizing complications and the doctor's response. Under these conditions, medico-legal expertise becomes a central mechanism for transforming clinical uncertainty into verifiable evidence-based knowledge, but its quality depends on the procedural environment—how the problem is formulated, what materials are provided, and whether the limits of competence are respected[2,3, 4].

The European standard of procedural effectiveness in medical matters deserves special attention. The case law of the European Court of Human Rights emphasizes that the state must provide an effective mechanism for establishing the circumstances and responsibility in cases where life and physical integrity are at stake, namely the promptness, independence, and capacity of the prosecuting authority to establish all the circumstances[5, 6]. In cases where specialized knowledge plays an essential role, expert opinions become the „framework" of the evidentiary structure, and the methodological opacity of expert opinions can undermine the effectiveness of proceedings.

At the same time, the importance of informed consent as an element of patient autonomy and risk management is growing. International and national standards enshrine the principle of voluntary and informed intervention, which makes the quality of doctor-patient communication a significant legal component of medical care[7,8]. In the field of elective aesthetics, this issue is particularly sensitive: the expected outcome and acceptable deviations must be discussed so that the patient can make an informed decision, not based on unfulfilled promises.

The research question is formulated as follows: what characteristics of forensic expertise allow for the simultaneous assurance of a clinically correct distinction between a complication and a defect in care?

The purpose of the study is to identify the specific challenges and vulnerabilities of forensic expertise in cases of negligence in dentistry and aesthetic medicine and to propose guidelines for formulating questions and substantiating causal relationships, ensuring the verifiability of the conclusion in court.

The study's hypothesis is that the probative value and legal stability of the conclusion of a medical-legal expertise in cases of negligence in dentistry and aesthetic medicine are determined decisively not by the fact of an unfavorable outcome in itself, but by a combination of three factors: the completeness and quality of the evidence (medical doc-

2 Parliament of the Republic of Moldova. *Criminal Procedure Code of the Republic of Moldova*, No. 122-XV of 14.03.2003.
3 Parliament of the Republic of Moldova. *Law No. 68 of 14.04.2016 on judicial expertise and the status of judicial experts*.
4 National Center for Judicial Expertise (Republic of Moldova). *Guide for the authorizing officer of judicial expertise*. Chișinău, 2022.
5 Šilih v. Slovenia, Application No. 71463/01, Judgment of the European Court of Human Rights of 9 April 2009.
6 Lopes de Sousa Fernandes v. Portugal, Application No. 56080/13, Judgment of the Grand Chamber of the European Court of Human Rights of December 19, 2017.
7 Council of Europe. *Convention for the Protection of Human Rights and Dignity of the Human Being with regard to the Application of Biology and Medicine (Oviedo Convention)*. Oviedo, 1997.
8 Parliament of the Republic of Moldova, 2005a.

umentation, research results, photographic documentation, information about products and medicines and their traceability); a methodologically transparent cause-and-effect relationship ( ), based on an analysis of risk manageability, the dynamics of the complication over time and a comparison of alternative causes; procedural correctness of the appointment of the expert and the formulation of the expert's tasks, excluding the legalisation of issues and ensuring the reproducibility and verifiability of the expert's reasoning in court[9,10].

2. METHODS AND MATERIALS APPLIED.

The study was conducted as an interdisciplinary work at the intersection of forensic medicine, clinical dentistry, and aesthetic medicine, as well as criminal procedure. The legal material used consisted of national regulations defining criminal law and the procedural framework for investigations, the status of forensic experts, the legal regime governing patient rights, and the professional responsibilities of healthcare professionals[11],[12],[13],[14],[15]. Current regulations on the medical-legal assessment of the severity of injuries were used to evaluate the criteria for health impairment[16].

The legal and international comparative context is based on the standards of the Council of Europe and the practice of the European Court of Human Rights in matters of medical negligence and state obligations[17,18,19, 20]. In addition, European Union legal acts affecting the safety and traceability of medical devices, which are important issues for implantology and aesthetic procedures, are taken into account[21,22].

The clinical block of sources is based on English and European publications, including clinical reviews, systematic reviews, and guidelines on complications of dental

[9] European Parliament and Council of the European Union. *Regulation (EU) 2017/745 on medical devices.*
[10] ENFSI (European Network of Forensic Science Institutes). *Guideline for Evaluative Reporting in Forensic Science*. 2015.
[11] Parliament of the Republic of Moldova. *Criminal Code of the Republic of Moldova*, No. 985-XV of 18.04.2002.
[12] Parliament of the Republic of Moldova. *Criminal Procedure Code of the Republic of Moldova*, No. 122-XV of 14.03.2003.
[13] Parliament of the Republic of Moldova. Law No. 264-XVI of October 27, 2005, on the practice of medicine.
[14] Parliament of the Republic of Moldova. Law No. 263-XVI of October 27, 2005, on the rights and responsibilities of patients.
[15] Parliament of the Republic of Moldova. *Law No. 68 of 14 April 2016 on judicial expertise and the status of judicial experts.*
[16] Government of the Republic of Moldova. *Decision No. 534 of July 26, 2023, approving the Regulation on the medical-legal assessment of the severity of bodily injury or damage to health.*
[17] Calvelli and Ciglio v. Italy, application no. 32967/96, Judgment of the European Court of Human Rights of January 17, 2002.
[18] Byrzykowski v. Poland, application no. 11562/05, Judgment of the European Court of Human Rights of June 27, 2006.
[19] Šilih v. Slovenia, Application no. 71463/01, Judgment of the European Court of Human Rights of 9 April 2009.
[20] Lopes de Sousa Fernandes v. Portugal, application no. 56080/13, Judgment of the Grand Chamber of the European Court of Human Rights of 19 December 2017.
[21] European Parliament and Council of the European Union. *Regulation (EU) 2017/745 on medical devices.*
[22] European Parliament and Council of the European Union. *Directive (EU) 2024/2853 on liability for defective products.*

implants, endodontics, and cosmetic procedures[23,24, 25(,)26,27,28, 29]. Since the subject of the article is the criminalistic interpretation of care defects and causality, clinical sources were considered primarily as reference points for the professional standard of care and risk management, rather than as a guide for the clinical treatment of a particular patient.

The analytical section used systemic and comparative legal methods, qualitative analysis of typical expert responses and errors committed, as well as causation using a model involving analysis of risk predictability, availability of preventive measures, temporal dynamics of complications, and alternative causes. The structure of the expert conclusions used evaluative reporting approaches, focusing on the transparency of reasoning and the reproducibility of conclusions for the court[30].

List of abbreviations

ECHR – European Court of Human Rights;
EU – European Union;
FME – forensic medical expertise;
VTEO – venous thromboembolism;
CT – computed tomography;
CBCT – cone beam computed tomography;
ISO/IEC 17025 – international standard for the competence of testing and calibration laboratories.

3. RESULTS.

The results of a comprehensive study and analysis demonstrate that, in dentistry and aesthetic medicine forensic examinations are particularly sensitive to the procedural and evidentiary context of a particular case. The outpatient format of care and brief clinical interaction significantly increase the importance of medical documentation as the primary source for retrospective reconstruction of events. If it is incomplete, inconsistent, or lacks objective data (examination, photographic evidence, laboratory test results), the forensic examination inevitably takes on a reconstructive nature, which extends the scope of uncertainty and reduces the forensic validity of the findings.

It has been found that typical procedural flaws in the conduct of expert examinations most often manifest themselves in the vagueness of the subject matter, confusion

[23] Renton T. *Prevention of iatrogenic inferior alveolar nerve injuries in relation to dental procedures*. Dental Update, 2010.
[24] Juodzbalys G., Wang H.L., Sabalys G. *Injury of the inferior alveolar nerve during implant placement: A literature review*. Journal of Oral & Maxillofacial Research, 2011.
[25] Berglundh T., Armitage G., Araujo M.G. et al. *Peri-implant diseases and conditions: Consensus report of workgroup 4 of the 2017 World Workshop on the Classification of Periodontal and Peri-Implant Diseases and Conditions*. Journal of Clinical Periodontology, 2018.
[26] Vehkalahti M.M., Swanljung O. Accidental perforations during root canal treatment: An 8-year nationwide perspective on healthcare malpractice claims. *Clinical Oral Investigations*, 2020.
[27] Murray G., Convery C., Walker L. et al. *Guideline for the management of hyaluronic acid filler-induced vascular occlusion*. Journal of Clinical and Aesthetic Dermatology, 2021.
[28] Goodman G.J., Clague M.D., Cohen J.L. et al. *A consensus on minimizing the risk of hyaluronic acid embolic visual loss and suggestions for immediate bedside management*. Aesthetic Surgery Journal, 2020.
[29] Paolini G., Cavaliere F., De Mitri C. et al. *European guidelines on perioperative venous thromboembolism prophylaxis: Chapter 8 – Plastic surgery*. European Journal of Anaesthesiology, 2024.
[30] ENFSI (European Network of Forensic Science Institutes). *Guideline for Evaluative Reporting in Forensic Science*. 2015.

between clinical and legal categories, violation of the chronology of events, and incompleteness of the materials presented. In some cases, the questions posed to the expert are formulated in such a way as to effectively request an answer regarding guilt or the classification of actions, which exceeds the competence of forensic medicine and increases the risk that the conclusion will be considered insufficiently substantiated. Methodologically correct formulation of tasks requires the translation of „evaluative" formulations into descriptive and causal categories, focusing on the mechanism of harm, risk manageability, and comparison of alternative causes, based on the verifiable facts of the case and medical data[31].

It has been demonstrated that, in the areas analyzed, the minimum evidence requirement is not limited to clinical records. The material and technological contours of the intervention are of significant importance, as a device or drug is often a functional part of medical care. Identification of the devices and drugs used, their batches, handling conditions, and documented origin is necessary to verify alternative causes and risk factors, especially where the product directly influences the mechanism of injury or complication. European regulations on medical devices establish a comparative framework for traceability and risk management, applicable as a guide for expert assessment of the technological chain of interventions, and Moldovan regulations allow for a comparable logic through national acts on the marketing authorization of devices and control of their circulation[32,33].

An analysis of causality in these categories of cases has shown that it is often multifactorial and requires a systemic argument based on a comparison of alternative explanations. In implantology, neurosensory disorders are known clinical risks; however, the issue of predictability and manageability of risk in a specific situation, the adequacy of diagnostic and planning measures, the appropriateness of the choice of intervention tactics, as well as the promptness of recognition of complications and the doctor's response, become legally significant[34,35,36, 37].

It has been established that diagnostic discipline and monitoring play a significant role in the assessment of implantology complications and periodontal support. Consensus definitions of peri-implant diseases provide a reproducible clinical framework for identifying and monitoring signs, allowing expert analysis not only of the outcome but also of the quality of follow-up, the promptness of intervention, and the organizational completeness of patient management[38].

---

[31] Ibid.

[32] European Parliament and Council of the European Union. *Regulation (EU) 2017/745 on medical devices.*

[33] Government of the Republic of Moldova. *Decision No. 704 of 11.07.2018 on the conditions for placing active implantable medical devices on the market.*

[34] Renton T. *Prevention of iatrogenic inferior alveolar nerve injuries in relation to dental procedures.* Dental Update, 2010.

[35] Juodzbalys G., Wang H.L., Sabalys G. *Injury of the inferior alveolar nerve during implant placement: A literature review.* Journal of Oral & Maxillofacial Research, 2011.

[36] Diakonoff H., Moreau N. *Inferior alveolar nerve injury following dental implant placement: A medicolegal analysis of French liability lawsuits.* Journal of Stomatology, Oral and Maxillofacial Surgery, 2022.

[37] Berglundh T., Armitage G., Araujo M.G. et al. *Peri-implant diseases and conditions: Consensus report of workgroup 4 of the 2017 World Workshop on the Classification of Periodontal and Peri-Implant Diseases and Conditions.* Journal of Clinical Periodontology, 2018.

[38] Vehkalahti M.M., Swanljung O. Accidental perforations during root canal treatment: An 8-year nationwide perspective on healthcare malpractice claims. *Clinical Oral Investigations*, 2020.

In endodontics, procedural complications (including perforations) may occur as incidents, but they acquire probative value when analyzing prevention, timely recognition, and the adequacy of corrective actions. Analysis data on compensation claims and publications on medical ethics in endodontics confirm the recurrence of scenarios in which event documentation, patient information, and the rationality of subsequent management are essential[39].

In aesthetic medicine, the results most clearly demonstrate the dependence of the severity of the outcome on the promptness of recognition of complications and preparedness for a protocol-based response, particularly in the case of vascular events following filler injections. Clinical analyses of complications and guidelines for managing vascular occlusion emphasize the critical role of early action; therefore, the time factor and initial response form an independent link in the chain of causality and are subject to expert evaluation along with the intervention technique[40,41, 42].

Severe ophthalmic complications following cosmetic injections pose a particular challenge for experts. Publications highlight the limited therapeutic options with delayed intervention and emphasize the importance of prevention and emergency medical care. In the medico-legal context, this shifts the analysis from a simple finding of the complication to an assessment of professional training and organizational support for care, as these can determine the transition from a complication to a catastrophic outcome[43,44].

In aesthetic medicine, as a field of invasive interventions, the importance of risk-based preventive decisions is highlighted, especially with regard to venous thromboembolism. European guidelines for the prevention of venous thromboembolism in plastic surgery indicate that the standard of care includes not only surgical technique but also documented risk stratification and justification of prevention. Consequently, the causal link in the event of an adverse outcome may include organizational and tactical elements of perioperative management[45].

The informed consent section occupies a special place in the results. It is demonstrated that in the field of aesthetics and dentistry, the probative role of consent is determined by its content, individualization, and reflection of the discussion of significant risks, alternatives, and limits of the outcome, rather than by the formal presence of a signature. The lack of information complicates the reconstruction of the adverse event and weakens the experts' assessment of risk manageability and the reality of the patient's autonomous decision. European approaches to „significant risk" and standards of non-disclosure of information are applicable as a benchmark, and in the national context of the Republic of

[39] Ciobanu I.E., Popescu S.M., Ionescu E. et al. *Root canal stripping: malpractice or common procedural accident—an ethical dilemma in endodontics*. Case Reports in Dentistry, 2016.
[40] Murray G., Convery C., Walker L. et al. *Guideline for the management of hyaluronic acid filler-induced vascular occlusion*. Journal of Clinical and Aesthetic Dermatology, 2021.
[41] Kyriazidis I., Giannakopoulos N.N., Kontochristopoulos G. et al. *Adverse events associated with hyaluronic acid filler injection: A systematic review*. Aesthetic Surgery Journal, 2024.
[42] Hong J.Y., Kim J.H., Park K.Y. et al. *Review of adverse effects associated with dermal filler treatments: Part I – vascular complications*. Diagnostics, 2024.
[43] Lazzeri D., Agostini T., Figus M. et al. *Blindness following cosmetic injections of the face*. Plastic and Reconstructive Surgery, 2012.
[44] Goodman G.J., Clague M.D., Cohen J.L. et al. *A consensus on minimizing the risk of hyaluronic acid embolic visual loss and suggestions for immediate bedside management*. Aesthetic Surgery Journal, 2020.
[45] Paolini G., Cavaliere F., De Mitri C. et al. *European guidelines on perioperative venous thromboembolism prophylaxis: Chapter 8 – Plastic surgery*. European Journal of Anaesthesiology, 2024.

Moldova, this section correlates with the requirements of the legislation on patient rights and obligations[46,47,48].

A comparison between clinical sources and expert methodology allows us to draw a general conclusion: the specific nature of forensic examinations in dentistry and aesthetic medicine is manifested by the increased importance of documented evidence of risk management and the need for a methodologically transparent cause-and-effect analysis that takes into account alternative explanations and the temporal dynamics of complications. This creates requirements for evidence and the structure of the expert's conclusion, ensuring the verifiability of the conclusions by the court and the parties[49].

4. DISCUSSION.

The results obtained allow us to consider forensic medical expertise in cases of negligence in dentistry and aesthetic medicine as evidence, in which the medical logic of probabilities and variability of results must be reconciled with the procedural logic of verifiability and stability of evidence. In this sense, the distinction between two levels of analysis is of fundamental importance: the medical fact of a complication and the legally significant defect in the provision of care. The presence of a complication records a clinical event, but does not in itself indicate a breach of the standard of care. On the contrary, a defect implies the identification of a controllable risk factor which, with the necessary diligence, could have been prevented or mitigated promptly[50, 51].

In dental implantology, this distinction is particularly evident in the high frequency of claims for damages related to neurosensory disorders. Disputes focus mainly on the diagnosis and planning stage, rather than on the possibility of a neurological complication itself[52,53,54]. In this regard, expert arguments prove most convincing when they reconstruct what information about risk was available prior to the intervention, what imaging and planning methods were used, the extent to which the tactics chosen were clinically rational, and how the physician responded to early symptoms of a complication. This approach reduces the risk of retrospective „guilt bias," in which an adverse outcome is misinterpreted as evidence of a defect simply because it occurred, and thus supports legal certainty in the evaluation of professional conduct.

A similar mechanism can be observed in aesthetic medicine, where clinical data highlights the relative rarity of individual complications, coupled with the high severity

[46] Council of Europe. *Convention for the Protection of Human Rights and Dignity of the Human Being with regard to the Application of Biology and Medicine (Oviedo Convention)*. Oviedo, 1997.
[47] Parliament of the Republic of Moldova. Law No. 263-XVI of 27.10.2005 on patient rights and responsibilities.
[48] Montgomery v. Lanarkshire Health Board, Judgment of the Supreme Court of the United Kingdom, [2015] UKSC 11.
[49] ENFSI (European Network of Forensic Science Institutes). *Guideline for Evaluative Reporting in Forensic Science*. 2015.
[50] Renton T. *Prevention of iatrogenic inferior alveolar nerve injuries in relation to dental procedures*. Dental Update, 2010.
[51] Paolini G., Cavaliere F., De Mitri C. et al. *European guidelines on perioperative venous thromboembolism prophylaxis: Chapter 8 – Plastic surgery*. European Journal of Anaesthesiology, 2024.
[52] Chaushu, G., et al. Medicolegal Aspects of Altered Sensation Following Implant Surgery: A Retrospective Analysis of Liability Claims. The International Journal of Oral & Maxillofacial Implants. 2002.
[53] Diakonoff H., Moreau N. *Inferior alveolar nerve injury following dental implant placement: A medicolegal analysis of French liability lawsuits*. Journal of Stomatology, Oral and Maxillofacial Surgery, 2022.
[54] Laviv A., Levin L., Zigdon-Giladi H. et al. *The nature of malpractice claims related to nerve damage after dental implant insertion in Israel during 2005–2020*. Clinical Implant Dentistry and Related Research, 2022.

of their consequences. Here, the standard of care is shaped not only by the intervention technique, but also by the degree of preparedness of the protocol for an emergency response. Guidelines for managing vascular occlusion after hyaluronic filler injection, as well as consensus approaches for minimizing the risk of embolic vision loss, effectively reinforce the position that timely recognition of complications and initial actions are an integral part of professional care[55,56,57]. Consequently, an assessment of a defect should include an analysis of the dynamics of events and the organizational availability of care, as this combination of factors often determines whether a complication will turn into a catastrophic outcome.

From a legal perspective, forensic expertise cannot be self-sufficient in the absence of a basic evidentiary framework. The national criminal procedural legislation of the Republic of Moldova focuses the investigation on the completeness and exhaustiveness of establishing the circumstances, and the rules governing the activity of expertise define the framework of the independence and competence of the expert[58] ,[59]. In cases of dentistry and outpatient aesthetics, this means that the decision to appoint an expert must be correctly formulated and accompanied by materials that allow for a reconstruction of the clinical process. The methodological recommendations for expert coordinators emphasize that the correct formulation of questions and the completeness of the materials provided are necessary conditions for the effectiveness of the expert opinion[60].

European standards, shaped by the case law of the European Court of Human Rights, further reinforce the importance of proper investigation of the case. The Court emphasizes that in cases affecting life and physical integrity, the state is obliged to provide an effective mechanism for establishing causes and responsibility. However, effectiveness does not necessarily imply criminal prosecution in all cases, but requires the real capacity of the legal system to establish the circumstances and provide a legally meaningful response where there are grounds[61,62]. In the context of medical cases, this means that delayed examinations, contradictory conclusions, incomplete materials, or lack of efficiency undermine the effectiveness of procedures and increase the vulnerability of the national system with regard to the procedural obligations of the state[63,64,65]. Thus, the quality of

[55] Murray G., Convery C., Walker L. et al. *Guideline for the management of hyaluronic acid filler-induced vascular occlusion*. Journal of Clinical and Aesthetic Dermatology, 2021.
[56] Goodman G.J., Clague M.D., Cohen J.L. et al. A *consensus on minimizing the risk of hyaluronic acid embolic visual loss and suggestions for immediate bedside management*. Aesthetic Surgery Journal, 2020.
[57] Lazzeri D., Agostini T., Figus M. et al. *Blindness following cosmetic injections of the face*. Plastic and Reconstructive Surgery, 2012.
[58] Parliament of the Republic of Moldova. *Criminal Procedure Code of the Republic of Moldova*, No. 122-XV of March 14, 2003.
[59] Parliament of the Republic of Moldova. *Law No. 68 of 14.04.2016 on judicial expertise and the status of judicial experts*.
[60] National Center for Judicial Expertise (Republic of Moldova). *Guide for the authorizing officer of judicial expertise*. Chișinău, 2022.
[61] Calvelli and Ciglio v. Italy, application no. 32967/96, Judgment of the European Court of Human Rights of January 17, 2002.
[62] Powell v. the United Kingdom, application no. 45305/99, Decision of the European Court of Human Rights of May 4, 2000.
[63] Byrzykowski v. Poland, application no. 11562/05, Judgment of the European Court of Human Rights of June 27, 2006.
[64] Šilih v. Slovenia, Application no. 71463/01, Judgment of the European Court of Human Rights of 9 April 2009.
[65] Lopes de Sousa Fernandes v. Portugal, application no. 56080/13, Judgment of the Grand Chamber of the European Court of Human Rights of December 19, 2017.

the examination becomes important not only as a professional factor, but also as a legally binding factor.

In medical cases, the causal link is often probabilistic and multifactorial, requiring expert opinions to be methodologically transparent and verifiable. Modern approaches suggest considering reasoning as a comparison of competing versions, demonstrating which data are most consistent with each version and outlining the limits of validity of the conclusions[66].

The special role of informed consent as an element of risk management and patient autonomy is also confirmed. International bioethical standards and national regulations on patient rights require that the patient's decision be free and based on sufficient information[67,68]. In the aesthetic sphere, where interventions are often elective and alternatives are usually available, informational deficiencies can become not a secondary circumstance, but a key one. Therefore, the significance of consent, its individualization, and the demonstrable discussion of significant risks, including those that are rare but associated with severe consequences, are of major importance. In this context, the need to distinguish between aesthetic dissatisfaction and objective harm to health becomes clear, because without recording the initial condition and the dynamics of complications, expertise risks being drawn into evaluative disputes that have no medico-legal content[69,70.]

An additional analytical level concerns the material and technological component of interventions. For implantology and aesthetic medicine, it is typical for the devices and products of interventions to be part of a causal chain. European regulation of medical devices reinforces the importance of traceability and risk management, while the modernization of the liability regime for substandard products establishes the possibility of legal assessment of a product defect as a mandatory element[71,72]. For the prosecuting authority, this means the need to analyze alternative versions without reducing the dispute exclusively to the doctor's behavior and without replacing clinical analysis with assumptions about a product defect in the absence of evidence. In practical terms, this again underscores the initial thesis that the quality of an expert opinion is directly determined by the quality of the materials that allow the identification of the devices used and the reconstruction of the conditions of their use.

Although ISO/IEC 17025 initially focuses on testing and calibration laboratories, it reflects the modern understanding that the competence and reproducibility of procedures should be documented and verified[73]. In medical case examinations, this principle manifests itself in the need for a clear methodology, documentation of the limits of the

[66] ENFSI (European Network of Forensic Science Institutes). *Guideline for Evaluative Reporting in Forensic Science*. 2015.
[67] Council of Europe. *Convention for the Protection of Human Rights and Dignity of the Human Being with regard to the Application of Biology and Medicine (Oviedo Convention)*. Oviedo, 1997.
[68] Parliament of the Republic of Moldova. Law No. 264-XVI of October 27, 2005, on the practice of medicine.
[69] Government of the Republic of Moldova. *Decision No. 534 of July 26, 2023, approving the Regulation on the medico-legal assessment of the severity of bodily injury or health damage*.
[70] Murray G., Convery C., Walker L. et al. *Guideline for the management of hyaluronic acid filler-induced vascular occlusion*. Journal of Clinical and Aesthetic Dermatology, 2021.
[71] European Parliament and Council of the European Union. *Regulation (EU) 2017/745 on medical devices*.
[72] European Parliament and Council of the European Union. *Directive (EU) 2024/2853 on liability for defective products*.
[73] ISO (International Organization for Standardization). *ISO/IEC 17025:2017 – General requirements for the competence of testing and calibration laboratories*. Geneva, 2017.

examination, and a transparent logic for moving from the case materials to conclusions. This is particularly important in situations where medical uncertainty is objectively unavoidable and where the expert's reasoning must be intelligible to a court without specialized knowledge.

Overall, it is confirmed that forensic dental examinations and cosmetic procedures should be considered a tool that requires consistent clinical guidelines, and transparent methodological reasoning. This would simultaneously avoid the criminalization of clinically acceptable complications and ensure a legally correct assessment of cases where a defect in care is identified, which plays an important role in the damage caused.

5. CONCLUSION.

Comprehensive and analytical analysis has confirmed that in dentistry and aesthetic medicine forensic expertise in cases of negligence and disputes over the quality of medical care operates under conditions of increased evidentiary fragility. This is due to the outpatient nature of many interventions, the variability of clinical outcomes, and the high subjective significance of the aesthetic result for the patient. Under these conditions, an adverse outcome cannot be considered self-sufficient evidence of professional malpractice and certainly does not replace an analysis of risk management and compliance with the standard of care.

It has been established that the probative validity of a version is achieved only through a methodologically transparent reconstruction of the clinical process, in which the predictability of risk in a specific situation, the availability and adequacy of diagnostic and preventive measures, the temporal dynamics of complications and the quality of the initial response, as well as (alternative) explanations for an adverse outcome, are constantly evaluated and documented. This approach allows for the distinction between a clinically acceptable complication with adequate care and a defect in care that contributes to the resulting harm.

With regard to causality, it has been found to be multifactorial, with clinical factors closely linked to organizational and logistical components. Therefore, causality largely depends on the availability of objective data and its chronological consistency: imaging results (including CBCT/CT), information about the procedures performed, complaints and objective status over time, as well as the documented traceability of the devices and medications used. The lack of identifiability of intervention materials and their conditions of use increases the risk of simplifying the causality model, reduces the verifiability of expert reasoning, and makes conclusions vulnerable to reasonable criticism in an adversarial process.

The quality of a conclusion depends directly on the correctness of the appointment of the expert, the formulation of questions, and the completeness of the materials presented. For the practice of the Republic of Moldova, this means the need to strictly comply with the procedural framework for appointing experts and the requirements regarding the status and competence of the expert. The correct methodological and procedural addressing of questions to the expert requires abandoning questions about guilt, qualification, intent, and focusing on the actual medical circumstances, the mechanism of harm.

A separate conclusion is the recognition of informed consent not as an auxiliary document, but as a structural element of medical care and an independent object of ex-

pert analysis. In dentistry and aesthetics, the role of consent is determined not by the fact of signing, but by the significance and individualization of the disclosure of information about significant risks, alternative options, and the limits of the result. The lack of information and documentation of doctor-patient communication can significantly complicate the distinction between subjective dissatisfaction with the aesthetic result and objective damage to health.

A comparison of the national context with European standards indicates that transparency and of the expert's reasoning and the effectiveness of examination in medical cases are of major importance. ECHR practice emphasizes the need for an effective mechanism for establishing circumstances and responsibility where life and physical integrity are at stake, and expert reports place the expert at the center of attention in terms of verifiability, reproducibility, and clarity of argumentation for the court. In conditions of medical uncertainty, the expert's conclusions and the completeness of the evidence make it possible to ensure a balance between the protection of the patient's rights and certainty in the assessment of professional conduct.

Thus, the specificity of forensic expertise in dentistry and aesthetic medicine lies in the increased importance of evidence regarding risk management, the technological traceability of the devices used, and the temporal dynamics of complications, as well as the need for a methodologically transparent cause-and-effect analysis. The implementation of these benchmarks in the Republic of Moldova can improve the quality of expert conclusions, increase the predictability of the legal assessment of medical events, and reduce the risk of both unjustified incrimination of clinically acceptable complications and underestimation of medical care defects that played a decisive role in causing the damage.

BIBLIOGRAFIE
BIBLIOGRAPHY

Berglundh T., Armitage G., Araujo M.G. et al. Peri-implant diseases and conditions: Consensus report of workgroup 4 of the 2017 World Workshop on the Classification of Periodontal and Peri-Implant Diseases and Conditions. Journal of Clinical Periodontology, 2018. https://doi.org/10.1111/jcpe.12957, https://pubmed.ncbi.nlm.nih.gov/29926491/ (accessed December 10, 2025).

Byrzykowski v. Poland, Application no. 11562/05, ECHR judgment of 27 June 2006. https://hudoc.echr.coe.int/eng?i=001-76066 (accessed December 10, 2025).

Chaushu, G., et al. Medicolegal Aspects of Altered Sensation Following Implant Surgery: A Retrospective Analysis of Liability Claims. The International Journal of Oral & Maxillofacial Implants. 2002. https://pubmed.ncbi.nlm.nih.gov/12074458/. Accessed 5 Jan. 2026.

Calvelli and Ciglio v. Italy, Application no. 32967/96, ECHR judgment of 17 January 2002. https://hudoc.echr.coe.int/eng?i=001-60329 (accessed December 10, 2025).

National Center for Judicial Expertise (Republic of Moldova). Guide for the authorizing officer of judicial expertise. Chișinău, 2022. https://cnej.gov.md/sites/default/files/ghidul_ordonatorului_de_expertize_judiciare_completat_web_cu_nr._13_si_14.pdf (accessed December 10, 2025).

Council of Europe. Convention for the Protection of Human Rights and Dignity of the Human Being with regard to the Applica-

tion of Biology and Medicine (Oviedo Convention). Oviedo, 1997. https://rm.coe.int/168007cf98 (accessed December 10, 2025).

Diakonoff H., Moreau N. Inferior alveolar nerve injury following dental implant placement: A medicolegal analysis of French liability lawsuits. Journal of Stomatology, Oral and Maxillofacial Surgery, 2022. https://doi.org/10.1016/j.jormas.2021.06.008 https://pubmed.ncbi.nlm.nih.gov/34171525/ (accessed December 10, 2025).

ENFSI (European Network of Forensic Science Institutes). Guideline for Evaluative Reporting in Forensic Science. 2015. https://enfsi.eu/wp-content/uploads/2016/09/m1_guideline.pdf (accessed December 10, 2025).

Goodman G.J., Clague M.D., Cohen J.L. et al. A consensus on minimizing the risk of hyaluronic acid embolic visual loss and suggestions for immediate bedside management. Aesthetic Surgery Journal, 2020. https://doi.org/10.1093/asj/sjz312 https://pubmed.ncbi.nlm.nih.gov/31693068/ (accessed December 10, 2025).

Government of the Republic of Moldova. Decision No. 704 of 11.07.2018 on the conditions for placing active implantable medical devices on the market. https://www.legis.md/cautare/getResults?doc_id=108838&lang=ro (accessed December 10, 2025).

Government of the Republic of Moldova. Decision No. 534 of July 26, 2023, on the medical-legal assessment of the severity of bodily injury or health damage. https://www.legis.md/cautare/getResults?doc_id=138349&lang=ro (accessed December 10, 2025).

Hong J.Y., Kim J.H., Park K.Y. et al. Review of adverse effects associated with dermal filler treatments: Part I – vascular complications. Diagnostics, 2024. https://doi.org/10.3390/diagnostics14151640, https://www.mdpi.com/2075-4418/14/15/1640 (accessed December 10, 2025).

ISO (International Organization for Standardization). ISO/IEC 17025:2017 – General requirements for the competence of testing and calibration laboratories. Geneva, 2017. https://www.iso.org/ISO-IEC-17025-testing-and-calibration-laboratories.html (accessed December 10, 2025).

Juodzbalys G., Wang H.L., Sabalys G. Injury of the inferior alveolar nerve during implant placement: A literature review. Journal of Oral & Maxillofacial Research, 2011. https://doi.org/10.5037/jomr.2011.2101, https://pmc.ncbi.nlm.nih.gov/articles/PMC3886063/ (accessed December 10, 2025).

Kyriazidis I., Giannakopoulos N.N., Kontochristopoulos G. et al. Adverse events associated with hyaluronic acid filler injection: A systematic review. Aesthetic Surgery Journal, 2024. https://doi.org/10.1007/s00266-023-03465-1, https://pubmed.ncbi.nlm.nih.gov/37563436/ (accessed December 10, 2025).

Lazzeri D., Agostini T., Figus M. et al. Blindness following cosmetic injections of the face. Plastic and Reconstructive Surgery, 2012. https://doi.org/10.1097/PRS.0b013e3182442363 https://pubmed.ncbi.nlm.nih.gov/22456369/ (accessed December 10, 2025).

Lopes de Sousa Fernandes v. Portugal, Application no. 56080/13, Grand Chamber Judgment of the ECHR of 19 December 2017. https://hudoc.echr.coe.int/eng?i=001-179556 (accessed December 10, 2025).

Montgomery v. Lanarkshire Health Board, UK Supreme Court, [2015] UKSC 11. https://www.supremecourt.uk/cases/uksc-2013-0136.html (accessed December 10, 2025).

Murray G., Convery C., Walker L. et al. Guideline for the management of hyaluronic acid fill-

er-induced vascular occlusion. Journal of Clinical and Aesthetic Dermatology, 2021. https://pmc.ncbi.nlm.nih.gov/articles/PMC8211329/ (accessed December 10, 2025).

Paolini G., Cavaliere F., De Mitri C. et al. European guidelines on perioperative venous thromboembolism prophylaxis: Chapter 8 – Plastic surgery. European Journal of Anaesthesiology, 2024. https://doi.org/10.1097/EJA.0000000000001998 https://pubmed.ncbi.nlm.nih.gov/38957026/ (accessed December 10, 2025).

Parliament of the Republic of Moldova. Criminal Code of the Republic of Moldova, No. 985-XV of 18.04.2002. https://www.legis.md/cautare/getResults?doc_id=151140&lang=ro# (accessed December 10, 2025).

Parliament of the Republic of Moldova. Criminal Procedure Code of the Republic of Moldova, No. 122-XV of 14.03.2003. https://www.legis.md/cautare/getResults?doc_id=150757&lang=ro (accessed December 10, 2025).

Parliament of the Republic of Moldova. Law No. 263-XVI of 27.10.2005 on patient rights and responsibilities. https://www.legis.md/cautare/getResults?doc_id=140341&lang=ro#, accessed on 10.12.2025.

Parliament of the Republic of Moldova. Law No. 264-XVI of October 27, 2005, on the practice of medicine. https://www.legis.md/cautare/getResults?doc_id=150513&lang=ro# (accessed December 10, 2025).

Parliament of the Republic of Moldova. Law No. 68 of 14.04.2016 on judicial expertise and the status of judicial experts. https://www.legis.md/cautare/getResults?doc_id=150277&lang=ro# (accessed December 10, 2025).

European Parliament and Council of the European Union. Regulation (EU) 2017/745 on medical devices. https://eur-lex.europa.eu/eli/reg/2017/745/oj (accessed December 10, 2025).

European Parliament and Council of the European Union. Directive (EU) 2024/2853 on liability for defective products. https://eur-lex.europa.eu/eli/dir/2024/2853/oj (accessed December 10, 2025).

Powell v. United Kingdom, Application No. 45305/99, ECHR Decision of May 4, 2000. https://hudoc.echr.coe.int/eng?i=001-5215, accessed on December 10, 2025.

Renton T. Prevention of iatrogenic inferior alveolar nerve injuries in relation to dental procedures. Dental Update, 2010. https://doi.org/10.12968/denu.2010.37.6.350 https://pubmed.ncbi.nlm.nih.gov/20929149/ (accessed December 10, 2025).

Šilih v. Slovenia, Application no. 71463/01, ECHR judgment of 9 April 2009. https://hudoc.echr.coe.int/eng?i=001-81333 (accessed December 10, 2025).

Vehkalahti M.M., Swanljung O. Accidental perforations during root canal treatment: An 8-year nationwide perspective on healthcare malpractice claims. Clinical Oral Investigations, 2020. https://doi.org/10.1007/s00784-020-03246-z, https://pubmed.ncbi.nlm.nih.gov/32140781/ (accessed December 10, 2025).