



DIGITAL DEVICES AND THE FUTURE OF CONTRACTUAL PROCESSES IN MEDICINE

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Abstract. *Modern medical contracts are undergoing significant transformations due to the widespread adoption of digital technologies and telemedicine. This article examines key aspects of the evolving contractual relationships in healthcare, including the regulation of remote consultations, electronic documentation, personal data protection, and liability of the parties. Special attention is given to legal innovations, international best practices, and practical recommendations for healthcare organizations. The article aims to analyze current trends and identify optimal approaches to drafting medical contracts in the context of industry digitalization.*

Keywords: *medical contracts, telemedicine, digital solutions, e-health, legal regulation, data protection, remote consultations.*

Today, medicine is undergoing rapid transformation driven by digital technologies, leading to significant changes in the legal regulation of medical practice. One of the key aspects of this transformation is the evolution of medical contracts, which must now account for new forms of interaction between doctors and patients, including telemedicine consultations, electronic health records, and remote health monitoring. The relevance of this topic stems from the growing demand for digital healthcare services, as well as the need for clear legal frameworks defining the obligations and liabilities of parties when using innovative technologies.



The adoption of telemedicine necessitates a revision of traditional contractual mechanisms, raising critical questions concerning personal data protection, service licensing, quality of care, and liability for damages.

This article aims to analyze current changes in medical contracts within the context of healthcare digitalization, examine legal innovations and international best practices, and provide recommendations for optimizing contractual relationships in telemedicine. The digitalization of medicine is fundamentally reshaping traditional contractual relationships between healthcare providers, physicians, and patients. The integration of telemedicine, electronic documentation, and digital platforms requires an overhaul of legal norms governing medical services.

Let us examine the key aspects of this transformation. Telemedicine enables remote healthcare delivery, significantly improving accessibility—particularly for residents of remote regions.

However, this necessitates the explicit inclusion of the following provisions in contracts:

- **Terms of telemedicine services** – Types of consultations covered (asynchronous, video calls, chat-based), and cases where remote diagnosis is permitted.
- **Patient identification procedures** – Methods for verifying patient identity during online consultations (e.g., digital signatures or biometric authentication).
- **Limitations of telemedicine** – Instances requiring in-person visits (e.g., prior to prescribing controlled medications). Financial Terms – Payment procedures and insurance coverage for telemedicine services¹.

In a number of countries (e.g., the U.S., EU), detailed telemedicine regulations are already in force, while in other jurisdictions, including some CIS states, the legal framework is still evolving.

¹ Kozlova L.M. “Protection of personal data in medical contracts” // “Law and digitalization”, 2022.



The transition to digital health records and e-prescriptions necessitates updates to contractual provisions concerning: Legal validity of electronic documents – Requirements for formats (e.g., compliance with GOST or international standards) and the use of digital signatures must be specified. Interoperability between healthcare institutions – How system compatibility is ensured, and who bears liability for data accuracy during transmission. Data storage and archiving – Retention periods for electronic health records, and protocols governing patient and regulatory access. In the EU, for instance, the General Data Protection Regulation (GDPR) imposes strict requirements on the processing of medical data².

Medical data falls under the category of highly sensitive information, making its protection a cornerstone of contractual agreements. Contracts must explicitly address: Cybersecurity measures – Data encryption, secure transmission channels, and access control protocols. Patient rights – The ability to withdraw consent for data processing and access one's own medical records. Liability for breaches – Clarification on compensation for damages caused by cyberattacks or misuse (e.g., whether responsibility lies with the healthcare provider or IT vendor).

The complexity of technological chains (physician–platform–patient) raises critical liability allocation questions. Contracts must delineate: Division of responsibilities – If an AI-based diagnostic system commits an error, is the software developer or the physician liable? Professional liability insurance – Whether policies cover telemedicine-specific risks. Cross-border jurisdiction – If consultations involve foreign specialists, which country's laws govern dispute resolution?

In the U.S., legal precedents already exist for lawsuits over telemedicine AI errors, underscoring the need for unambiguous contractual terms. Violations may

² Author team "Legal frameworks for telemedicine: global practices" WHO Technical Guidance Series, 2023.



trigger severe penalties: under the GDPR, fines can reach 4% of a company's global revenue³.

The digital transformation of healthcare is reshaping all aspects of contractual relationships between medical organizations, physicians, and patients. Key areas of change include telemedicine services becoming an integral part of modern healthcare. Contracts must now explicitly regulate: Formats for delivering remote services (video consultations, chat-based communication, asynchronous consultations) Patient identification protocols for remote interactions Technical requirements for equipment and communication channels Documentation specifics for teleconsultations

The adoption of artificial intelligence in medicine has introduced new contractual challenges, particularly concerning: Liability allocation between physicians and algorithm developers Protocols for implementing AI-system recommendations in clinical practice Academic perspectives on this issue, such as those of Prof. K. Terry (University of Pennsylvania), emphasize the need to adapt HIPAA to new digital realities. Prof. Terry proposes a “flexible contracting” model with dynamic terms specifically designed for telemedicine services⁴.

Dr. Eric Topol (Scripps Research) advocates for “smart medical contracts” on blockchain, automating obligation fulfillment upon achievement of clinical KPIs⁵.

Professor G. Hirsch (University of Luxembourg) developed a GDPR-compliance matrix for medical contracts, defining four data protection tiers: Basic (Article 6 GDPR) Enhanced (Article 9 – special categories) Cross-border (Chapter V GDPR) AI-dependent (Article 22 – automated decision-making)⁶.

³ Chen.L. “Blockchain-based Smart Contracts in Healthcare” Journal of Medical Internet Research, 2022.

⁴ K.Terry. “Medical contracts must incorporate algorithmic accountability protocols for AI utilization” (Journal of Health Care Law & Policy, 2023).

⁵ Dr.E.Topol. **High-performance medicine: the convergence of human and artificial intelligence** (Nature Medicine, 2019, Vol.25)

⁶ G. Hirsch. Liability issues in the use of AI in medicine and their reflection in contracts. Computer Law & Security Review.



M. Koivisto (University of Helsinki) demonstrates the necessity of "ethical algorithmic clauses" in AI contracts: "Contractual terms must ensure human-in-the-loop for critical medical decisions."⁷

Proposed Framework for Innovative Contracting A mechanized contract system should integrate:

1. Smart Contracts for Automation DRG-based reimbursement calculations Insurance claim processing Physician KPI monitoring.

2. Dynamic Terms Auto-updating provisions triggered by: Regulatory changes (via legal database APIs) Evolving technical standards.

In recent years, healthcare has undergone significant transformations under the influence of digital technologies. Particularly rapid development is observed in telemedicine and electronic medical services, which inevitably impacts both the content and form of medical contracts.

Firstly, the digitalization of medical services is transforming traditional contractual relationships. E-prescriptions, remote consultations, and online doctor appointments all require new approaches to formalizing agreements between patients and healthcare providers. Medical contracts are increasingly executed electronically using digital signatures and secure platforms.

Secondly, telemedicine as a field is becoming more widespread. Patients now receive consultations, diagnostics, and even treatment monitoring without visiting clinics. This demands clear contractual regulation: types of telemedicine services, communication technologies, confidentiality guarantees, and patient consent must be explicitly specified.

Thirdly, with advancing digital solutions, questions of liability are gaining importance. For remote interactions, it's particularly crucial to determine who bears

⁷ Mika K. Koivisto. Algorithmic Transparency in Healthcare Contracts. European Journal of Health Law, 2022.



legal responsibility for potential complications, errors, or technical failures⁸. Equally critical is personal data protection.

Modern medical contracts must mandatorily include provisions governing the collection, storage, and processing of sensitive data, alongside mechanisms ensuring its security in digital environments. Consequently, healthcare digitalization necessitates a fundamental overhaul of medical contract drafting and regulation. While creating new opportunities to enhance care quality, this simultaneously imposes stricter requirements for legal precision and patient rights protection.

The digital transformation of healthcare requires a fundamentally new approach to the execution of medical contracts. Modern contractual structures must combine legal reliability with technological flexibility, ensure the protection of the rights of all participants in the medical process and comply with the rapidly changing regulatory landscape. Successful adaptation of contractual practices to the conditions of digitalization will become an important competitive advantage for medical organizations in the coming years. Modern contracts must include clear provisions on telemedicine services, electronic document management and data protection, flexible conditions for AI solutions and automated systems International standards taking into account national regulations.

In conclusion, the optimal contractual model should combine legal reliability, technological flexibility and protection of the rights of all participants. This will minimize the risks of digital transformation and ensure sustainable development of the industry.

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