

Modern Technologies in Medicine and Law

Abstract

This thesis deals with the application of modern technologies in medicine from the perspective of law. The primary aim of this work is to analyse the given provisions of the Civil Code, Act on Health Services and Act on Medical Devices, and also to determine whether the current legislation represents a suitable legal framework able to respond to the implementation of modern technology in the healthcare sector. In connection with this analysis, author presents possibilities of legislative changes that would respond to these modern technologies. The work *inter alia* deals with the question of whether the use of some of these technologies within the provision of healthcare services can be considered compliant with the principle of *lege artis*. In the first chapter, the reader is introduced to the topic of the thesis. This chapter defines the basic terms and presents an overview of the legislation related to the chosen topic. The second chapter represents a main part of the thesis, where author deals with the topic of artificial intelligence. In this chapter, the reader is acquainted with the term of artificial intelligence and the definition of its legal status. Subsequently, author evaluates whether the current legislation constitutes appropriate legal frameworks adequately responding to the use of artificial intelligence in medicine or whether legislative changes need to be adopted to better reflect the nature of artificial intelligence. Furthermore, the chapter contains an analysis of whether an action made with the use of AI can be considered to be made *de lege artis*, and an analysis of the impact on privacy and personal data protection. In the third chapter, the author deals with issues related to Brain Computer Interface, questions of liability for the actions of a person with implanted BCI, and whether BCI can be classified as a medical device. The fourth chapter focuses on immersion technologies, issues of liability for damages resulting from the application of these technologies, and whether their use within the provision of healthcare services can be considered *de lege artis*. The fifth chapter is dedicated to the field of telemedicine, its use within the surgeries or remote monitoring of patients, and issues of liability associated with this issue. The last chapter of the thesis is focuses on the issue of bioprinting. In this chapter, the reader is acquainted with the legal qualification of body parts created by bioprinting, while being provided with an answer to the question of whether such organs can be considered *rei in commercio*.

Key words: artificial intelligence, immersion technologies, bioprinting, Brain Computer Interface, telemedicine, liability for damage, privacy and personal data protection