


Chapter 11

Data-Driven Technology

Medical Malpractice: A Narrative Review on the Legal Implications in Clinical Settings

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ABSTRACT

Many hospitals employ machine learning algorithms in clinical settings. This technology causes ethical and legal issues including data biases resulting in harm. This narrative research seeks to demonstrate the link between data-driven algorithms in healthcare decision-making and discrimination to certain demographic groups. English peer-reviewed papers from 2020 to June 24, 2024, were searched on Google Scholar. The primary findings revealed ethical issues with clinical AI technology. However, there is a notable lack of well-established protocols to determine liability for AI errors. This cutting-edge technology promises to boost operational efficiency but may simultaneously damage healthcare providers' reputations and patient safety. To safeguard patients and staff, steps must be taken with regard to quality assurance practices prior to implementation.

INTRODUCTION

Patients have reported instances of bias and discriminatory treatment because of incorporating machine learning algorithms, which are a subset of artificial intelligence (AI), into healthcare environments. This has subsequently resulted in injury to the medical experts who are using this inexplicable and, more significantly,

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non-interpretable technology. According to Veritti et al. (2024), an AI-driven prediction model was unsuccessful in detecting 843 out of 2552 patients who had clinically proven sepsis, resulting in a 67% omission rate. For background, sepsis is a critical medical condition that may result in organ failure and, eventually, death. Several research studies (Cheng et al., 2024; Karalis, 2024; Williamson & Prybutok, 2024; Čartolovni et al., 2022) have shown that there are several elements that might lead to legal consequences for manufacturers of AI, healthcare organizations, and medical professionals despite lack of governing regulation and laws. There is a lack of rules and legislation by governing bodies, as highlighted by Chen et al. (2023) and Prakash (2022), that specify the obligations of the party accountable for introducing harmful risk.

Culpability is necessary to establish responsibility or wrongdoing when undesirable consequences occur in clinical settings. Many factors contribute to manufacturer harm, including biased training data, which leads to clinical prediction mistakes and data breaches involving sensitive patient information (Veritti et al., 2024). Insufficient training and AI/ML system supervision and management may lead to legal action against healthcare organizations, particularly leaders, according to Sablone et al. (2024). Patients may assert that these institutions infringed against their rights, as documented by Drabiak (2022), by unlawfully using their personal data without consent. According to Cheng et al. (2024), clinical staff may be liable for AI system inexplicability that causes patient diagnostic and treatment errors. The aim of this study examined ethical problems associated with the use of AI and a pathway of damage that might lead to litigation suits.

Problem Statement

The use of AI and/or ML algorithms in clinical environments has seen a significant increase which can be attributed to the implementation of cost-effective strategies and the reduction of clinician fatigue, especially in the aftermath of a global pandemic. Nevertheless, as the dependence on the outcomes of the black box paradigm has grown, both staff and patients have reported occurrences of discriminatory and/or prejudiced assertions (Cho, 2021). According to Cirillo et al. (2020) with the implementation of AI in clinical settings, this technology has the potential to introduce historical, representation, measurement, aggregation, evaluation, and/or algorithmic bias. This difference is even more pronounced for patients with lower income and education levels. The hospital is now being sued by both employees and customers (patients) due to inconsistencies in patient care stemming from the use of data-driven technology. The primary business concerns center around the insufficient understanding of the legal obligations and liability, as well as the potential reputation and financial consequences, linked to allegations

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