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Commentary

Ethical Approach of implementing Artificial Intelligence in Healthcare Sector

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Abstract

Medical practice is being influenced by artificial intelligence (AI). AI applications are extending into disciplines that were previously thought to be entirely the domain of human understanding, thanks to enormous breakthroughs in systematic data collection, machine learning, and cloud-based services. In comparison, AI creates a new set of ethical considerations that must be addressed because it has the potential to threaten patient needs, well-being, and anonymity. Informed consent, cyber security, safety and transparency all are the major concerns of increasing use of AI in healthcare setups. AI and ML policy and ethical guidelines, on the other hand, lag behind the advancements in healthcare that AI has made. AI can do wonder only if we consider its ethical and legal aspects and handle them in right manner.

Keywords

Artificial Intelligence, ethical Concerns, machine learning, healthcare system.

Introduction

Artificial intelligence is influencing medical practice (AI). Due to massive advancements in systematic data collection, machine learning, and cloud-based services, AI applications are spreading into disciplines that were initially assumed to be only the domain of human knowledge. AI is a discipline of computing science that intends to understand and develop intelligent bodies or set-ups. The phrase "artificial intelligence" was first used at a symposium at Dartmouth in 1956, and it has a long and storied history¹. Since 2012, the effective development of image classifiers has contributed to AI's current revival. Despite significant growth in recent decades, AI has been plagued by inconsistency and evolving understanding of what is defined as 'real AI.' The phrase "artificial intelligence (AI) is frequently used, but scholars and researchers have disputed its semantics². AI is then defined mainly through its serotypes: Machine learning (ML), a variant of AI, is by far the most frequently used method in today's AI healthcare because this permits computer software to learn automatically from data and improve its performance without needing to be expressly built.

Deep learning is a form of machine learning that uses numerous layers of convolutional neural networks to recognize patterns in massive datasets. AI can be implemented in early diagnosis and treatment suggestion, robot-assisted surgery, virtual nursing, monitoring dosage, and eliminating the possibility of any mischief. In the coming years, AI seems to grow exponentially³⁻⁵.

Furthermore, integrated virtual man representations are worthy of holding meaningful dialogues, which has repercussions for psychological ailment's diagnosis and therapy. Robotic prostheses, manual work assistance systems, and portable manipulators are all examples of AI tools that enable telehealth delivery⁶. In monetary terms, robot-assisted surgery dominates the AI pack. To actively assist and boost the surgeon's instrument precision, cognitive robots can incorporate data from pre-op patient history with real-time operating metrics. Data from surgical experiences are incorporated

into the technology to enlighten enhanced approaches and observations. Virtual nursing aides are also an example of AI's potential⁷. The number of hospital visits is reduced when AI systems discreetly monitor the condition of the patient and send notifications to practitioners when it is required. It can also relieve medical practitioners of some of their responsibilities^{8,9}.

In contrast, because AI has the potential to jeopardize patient requirements, well-being, and anonymity, it raises a new set of ethical concerns that must be tackled. AI and ML policy and ethical guidelines, on the other hand, lag behind the advancements in healthcare that AI has made. While some efforts have been made to participate in these ethical dialogues, the medical profession remains oblivious of the ethical issues that growing AI can bring. As a result, a vigorous debate is in the works, one that would benefit greatly from medical involvement. In the near future, doctors will almost probably engage with AI in their regular practice¹⁰.

The virtue of Informed Consent

The physician and subject interaction will be transformed by AI technologies that abet in diagnostic and therapeutic purposes. Is there a need for voluntary participation and informed consent precepts while using AI to aid patient care? Although informed consent is one of the most apparent hurdles in incorporating AI into clinical settings, it has not garnered sufficient emphasis in the ethical context¹¹. AI applications that are becoming more popular in the healthcare vicinity and among patients occupy diverse health and well-being domains, from nutrition advice to health evaluations to drug compliance and data analysis from sensing devices. For medical ethicists, such tools raise concerns regarding user agreements and their link to full consent. In contrast to the typical informed consent method, a user agreement is a contract that an individual signs without having a face-to-face conversation. Most individuals do not take the time to read and comprehend user agreements, and they frequently disregard them¹².

Furthermore, regular software changes create a challenge for users to adhere to an agreement they have committed to. What details must be provided to people who use these apps? How precisely should they reflect informed consent transcripts when it comes to user contracts? It's tough to define these concerns, and it's even more challenging when data of the patient using AI health apps is fed directly into clinical decision-making¹³.

Safety and Transparency of the Data

One of the most significant concerns for AI in healthcare is the protection and transparency of patients' data and medical history. AI has recently come under fire for allegedly making "unsafe and erroneous" cancer treatment suggestions. Instead of using actual patients' data, some diagnostic and suggestive AI apps only considered a few "fabricated" cases and misinterpreted the patients' conditions, and suggested an inappropriate treatment option. The data passed down must first be reliable and accurate to eliminate such concerns. Secondly, some level of transparency should be assured in consumer safety and trust. In an idealistic situation, all data and algorithms would be available for public scrutiny. There may be some real concerns about preserving intellectual property even while avoiding increased cyber risks. Furthermore, AI developers ought to be adequately honest about the type of data utilized and any program flaws¹⁴.

Privacy and data protection

In the era of big data, having data security guidelines and rules that sufficiently ensure the confidentiality of persons, particularly patients', is crucial¹¹.

Cyber Security

When it comes to ethical and legal obstacles to AI in healthcare, another crucial factor to consider is cyber-security. Consequently, most of the system is susceptible to virtual and physical assaults. Cyber attackers, and hackers, can use breaches to intercept or manipulate the movement of credit or healthcare data. Threatening, harming, or disrupting the delivery of critical (medical) services

is becoming more common among such perpetrators. Hospital databases, diagnostic equipment, wearable medicines, and medical gadgets could be targets in the healthcare system. Program viruses, Trojan horses, and worms can all invade computers, putting patients' confidentiality and lives at risk. Furthermore, erroneous data or compromised algorithms can result in inaccurate and perhaps dangerous treatment suggestions¹².

Conclusion

Mutual consent, intensive information protection, guard against any cyberthreats, and transparency for AIs are all critical issues to consider when establishing an AI-driven healthcare model premised on the mission statement Health for All. We must not just examine and enhance current regulatory regimes to reflect creative technological advancements in this field. However, social and political discussions on the ethical principles of AI-driven healthcare systems, including the impact on human labor and the community as a whole, are as important. AI can do wonder only if we consider its ethical and legal aspects and handle them in right manner.

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Conflict of Interest

None to declare.

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