

The ethical issues in the use of AI in healthcare

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1 INTRODUCTION

In the 21st century, advancements in theory and computational power have rapidly propelled artificial intelligence (AI), especially in healthcare, drawing significant investments (see Figures 1.1 and 1.2). Proponents believe AI can enhance diagnostic accuracy, extend care to remote areas, and save doctors' time for more patient interaction [1]. However, AI also brings with a colossally abundant number of ethical problem in healthcare area. This text will explore these issues' in Privacy and data protection, Transparency and Trust, MResponsibility and Accountability angle and give some suggestings.

Annual global corporate investment in artificial intelligence, by type
This data is expressed in US dollars, adjusted for inflation.

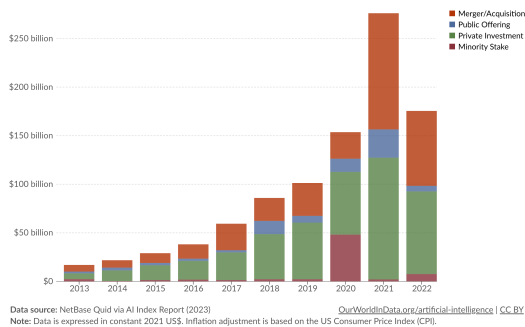


Figure 1.1: Annual investment in AI by type

Annual private investment in artificial intelligence, by focus area
Includes companies that received more than \$1.5 million in investment. This data is expressed in US dollars, adjusted for inflation.

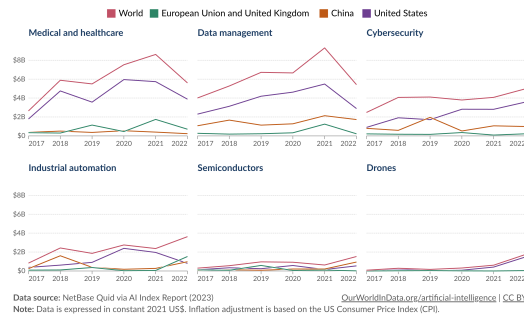


Figure 1.2: Annual investment in AI by area

2 PRIVACY AND DATA PROTECTION

In the realm of Healthcare AI, the protection of patient privacy and data is paramount. Patients express concerns about the use of their sensitive information, such as medical records and test results, which are stored in hospital databases. They question the duration of data storage, access by staff, purposes of data use, and potential for unauthorized sharing [2]. Although electronic records offer increased security compared to paper files, there remains a risk of cyberattacks and internal visibility. The implications of data breaches are profound, affecting personal life through potential bullying, increased insurance costs, and job loss due to disclosed medical history [3]. Therefore, ensuring robust data protection measures and transparency in data handling is essential for maintaining trust in healthcare services.

3 TRANSPARENCY AND TRUST

The pervasive "black box" nature of AI algorithms fuels transparency and trust issues in Healthcare AI (HCAI). The public's apprehension is amplified by concerns over HCAI's recommendations for diagnosing and treating medical conditions, despite physician oversight [4]. This skepticism is particularly strong among older individuals and those with lower economic status, who fear AI may bring more harm than good. The lack of direct experience with HCAI and a basic understanding of AI contribute to a global sentiment of unease about AI's societal impact in the coming decades.

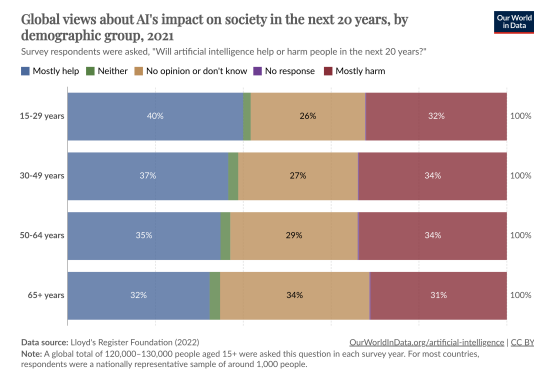


Figure 3.1: Views on AI's impact on society by ages

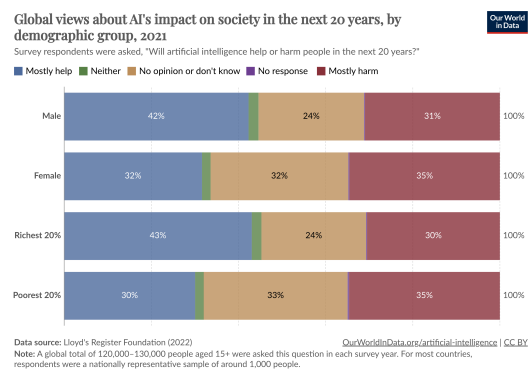


Figure 3.2: Views on AI's impact on society by gender and wealth

4 RESPONSIBILITY AND ACCOUNTABILITY

Historically, healthcare prioritized the doctor-patient relationship, focusing on shared decision-making to tailor care plans to patient needs. Clinical decisions, grounded in patient information, were the sole responsibility of doctors [5]. The emergence of "black box" AI tools, with their opaque algorithms, now poses a challenge to this collaborative process by limiting patient autonomy due to a lack of explainability. Although AI could allow doctors more time for

patient interaction, its benefits are constrained if AI's recommendations cannot be fully explained. The integration of such technologies raises concerns about new sources of medical errors in a field where mistakes have grave consequences.

5 SUGGESTINGS

- (1) Implement encryption, restrict access, enhance transparency, and educate on policies to boost patient trust and safeguard privacy in healthcare AI.
- (2) To address transparency and trust in HCAI, it's vital to enhance AI explainability, involve diverse patient groups in AI development, and provide AI literacy education.
- (3) Establishing robust AI-assisted decision-making protocols, supported by rigorous oversight, is critical to minimizing medical errors

6 CONCLUSION

This article analyzes the ethical issues of artificial intelligence in healthcare from three perspectives: patient privacy and data protection, public trust in AI, and physician responsibility and accountability, offering corresponding recommendations. The ethical dilemmas in healthcare AI largely stem from a lack of understanding of new technologies and unclear regulatory guidelines. The emergence of new technologies often disrupts existing systems, and the inevitable disruption caused by AI in traditional healthcare necessitates regulatory guidance to ensure a smooth transition to new systems.

REFERENCES

- [1] Emma Kellie Frost, Rebecca Bosward, Yves Saint James Aquino, Annette Braunack-Mayer, and Stacy M. Carter. Public views on ethical issues in healthcare artificial intelligence: Protocol for a scoping review. *Systematic Reviews*, 11(1):142, December 2022.
- [2] Chaminda Chiran Jayasundara. ETHICAL ISSUES SURROUNDING THE USE OF INFORMATION IN HEALTH CARE. 9(1), July 2004.
- [3] Chandra Thapa and Seyit Camtepe. Precision health data: Requirements, challenges and existing techniques for data security and privacy. *Computers in Biology and Medicine*, 129:104130, February 2021.
- [4] Pouyan Esmaeilzadeh, Tala Mirzaei, and Spurthy Dharanikota. Patients' Perceptions Toward Human–Artificial Intelligence Interaction in Health Care: Experimental Study. *Journal of Medical Internet Research*, 23(11):e25856, November 2021.
- [5] Helen Smith. Clinical AI: Opacity, accountability, responsibility and liability. *AI & SOCIETY*, 36(2):535–545, June 2021.