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Empowering Healthcare with Ethics and Efficiency
Future of Healthcare and Artificial Intelligence (AI)
Series Article   by Dr. Deepa Bhide

Future of Healthcare and Artificial Intelligence (AI):

Practical Insights and Diverse Perspectives on AI in Healthcare Project Management [1]

Empowering Healthcare with Ethics and Efficiency [2]

Dr. Deepa Bhide, MBBS, DCH, PMP

INTRODUCTION

AI in healthcare presents a fascinating paradox. While Artificial Intelligence (AI)-powered fitness trackers can detect potential health issues, they raise ethical concerns. One worry is that the algorithms behind these trackers might be biased, leading to false positives for specific groups. Additionally, these alerts often lack transparency, causing unnecessary anxiety without providing context or next steps. In a recent incident with a close family friend, a wristband-based advanced healthcare AI monitoring system created a false alarm. The physician in the picture did not dismiss the AI warning and acknowledged its potential value but emphasized the crucial role of human expertise in healthcare. He performed a physical exam, considering the AI's limitations, and reassured my friend about her health status. Potential for bias, along with transparency and explainability, were questioned in this case. The case underscored the irreplaceable value of human judgment (human-in-the-loop model) and expertise in healthcare.

While new technology using AI has the potential to revolutionize healthcare, it's essential to consider the associated challenges. These advancements benefit patients, doctors, researchers, and extended stakeholders, requiring vast amounts of patient data and raising concerns about privacy, security, and ethics. However, various frameworks are being established for AI in healthcare, designed to manage risk and promote trustworthiness, transparency, and accountability. These frameworks are crucial in protecting patient privacy and fostering responsible AI adoption, providing a solid foundation for the future of AI in healthcare.

This article is a comprehensive exploration of the integration of AI into healthcare. It highlights the immense promise of AI in enhancing patient care and streamlining clinical workflows. However, it also emphasizes the need for responsible use of AI, necessitating a thorough understanding of the ethical implications. We delve into the fundamental principles of accountable, transparent, and explainable AI (XAI) in healthcare, exploring

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[1] Editor's note: This series is by Dr. Deepa Bhide, a practicing pediatrician with additional experience in information technology and project management. Her 2023 series of articles introduced readers to a range of important issues related to programs, projects and PM in healthcare. In this new series, Dr. Bhide will interview experienced healthcare, IT and project professionals around the world to reflect on the impact of artificial intelligence on global healthcare. Learn more about Dr. Bhide in her author profile at the end of this article. To read previous works by Dr. Bhide, visit https://pmworldlibrary.net/authors/dr-deepa-bhide/

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the challenges posed by data bias, patient privacy concerns, and the need for human oversight. By understanding these potential obstacles, project managers can guide the development and deployment of AI solutions that are not just effective but also trustworthy and ethical.

This article provides insight into the experiences and perspectives of a few experts in ethics and AI in healthcare.

Ethical Experts – The Guardians of Trustworthy AI

Excerpts of interviews with the following experts:

Archana Atmakuri - Country Researcher for the Global Index on Responsible AI (GIRAI), New Zealand

Dr. Milind Bhide – Pediatrician and Neonatologist, India

A few ethics experts interviewed wished to contribute anonymously.

The Interviews

Q 1: What is your background and experience in AI projects?

The impact of responsible AI in healthcare is around enhanced diagnostics, personalized care, efficient resource allocation, and precision in medicine and drug discovery. AI-generated insights can assist physicians in making more informed treatment decisions for their patients rather than replacing them. To identify, design, execute, and monitor this technology for healthcare benefit, dedicated, pragmatic leadership is necessary to nurture the adoption successfully.

"I am presently involved in the Global Index on Responsible AI (GIRAI), a multi-year initiative focused on promoting and broadening the global discourse and actions related to responsible AI. The Global AI Index is a tool generating key data on responsible AI commitments and progress in 120 countries. With its extensive global outreach, the project seeks to magnify a wide range of experiences and expertise from diverse regions, with a particular emphasis on those in the Global South. It aims to highlight the endeavors of various regions in meeting human rights obligations and adhering to principles for the responsible development and deployment of AI. My role involves researching Singapore's AI ecosystem for the Index to evaluate the extent of Responsible AI practices within the country," Archana commented.

"I am a newly appointed Chief AI Ethics Officer (CAIEO) at our organization, with an impressive lineup of digital transformation projects. As AI adoption and integration grow

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as an organization's competitive advantage, our leadership considers this role critical to the goals. My role is to ensure that the AI applications that our organization develops or is deployed in the projects are trustworthy, explainable, and follow our corporate values. I am also mandated to ensure the organization has tools and training to embed these in what they produce," - anonymous.

"My role has recently been titled "Healthcare AI Ethics Lead" or "Clinical AI Ethics Specialist." I am responsible for identifying potential biases, advising on fair data practices, and ensuring compliance with ethical guidelines. I found these titles interesting as they never existed earlier with this set of explicitly outlined responsibilities" - anonymous.

Q 2: What are some ethical considerations for using AI in healthcare projects?

"Though I cannot speak specifically about ethics in healthcare exclusively due to my limited experience, AI in healthcare has raised concerns regarding potential inaccuracies and data breaches. A few points from my thoughts are as follows.

- Lack of human oversight in AI can lead to errors that can have severe consequences for patients. It is crucial to remember that patients often encounter clinicians during vulnerable moments. So, it is imperative to establish and adhere to ethical guidelines for the responsible integration of AI into medical practice.

- The integration of AI into medical practice necessitates a robust governance framework. Such a framework is essential to protect individuals from harm and unethical behavior like discrimination and bias.

- Healthcare organizations deploying AI should consider establishing an ethics committee to oversee the responsible use of AI. Ensuring accountability of AI involves transparently defining the responsibilities of AI systems, their developers, and healthcare professionals. The ethical deployment of AI in healthcare demands mechanisms for auditing, explaining, and rectifying algorithmic decisions to prevent biases and errors. Moreover, a critical facet of this accountability is safeguarding equity in healthcare delivery, especially in rural healthcare. It is essential to address disparities in access to AI-driven technologies, ensuring that benefits are distributed inclusively across diverse demographic groups," – Archana

"Organizations across the continents have ethics on the critical path of application of AI in healthcare. As an example, the Indian Council of Medical Research has created elaborate ethical guidelines for the application of AI in biomedical research and healthcare [1]. I strongly suggest we review these for the application of AI in healthcare settings.

While ethics in AI is now explored to ensure the four key areas, such as informed consent to use data, safety and transparency, algorithmic fairness and biases, and data privacy,

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are addressed, a pivotal point to keep in mind is who takes the ownership of the decision-making. I also recommend a review of "Artificial intelligence projects in healthcare: 10 practical tips for success in a clinical environment [2].

Q 3: What is responsible, transparent, and explainable AI?

"The three aspects- responsibility, transparency, and explainable AI – comprise the core values of ethical use of AI, among other aspects like transparency, accountability, etc. Explainability enables people to understand how a particular system works and how a particular outcome was achieved by providing sensible and easy-to-understand information.' Responsible AI and explainable AI are the principles of Ethical AI governance and require information about processes, practices, and decisions to be open, accessible, and easily understood by a broad range of stakeholders, including healthcare providers.

In my view, the transparency of AI systems plays a crucial role in safeguarding human rights, fundamental freedoms, and ethical principles. I believe that transparency is not just a technical requirement but an essential aspect of properly functioning national and international liability frameworks. I'd also like to add the importance of transparency because it enables compelling challenges to decisions made by AI systems. Without transparency, there's a risk of infringing on the right to a fair trial and effective remedy, limiting the legal domains where these systems can be responsibly and ethically utilized" - Archana.

"Responsible, transparent, and explainable AI are three pillars of trustworthy AI as a force for good; I don't think we can function if they are not in place. This means building AI models on unbiased data, safeguarding patient privacy, and developing tools healthcare professionals can understand and trust. Only then can we harness the power of AI to improve patient outcomes, optimize workflows, and ultimately, deliver the best possible care to our community" – anonymous

Q 4: What impediments to responsible, trustworthy AI for physicians, patients, or other stakeholders?

"I think the first impediment is a lack of awareness about ethical considerations while using AI systems. It must not be assumed that stakeholders (doctors, patients, or practitioners) using AI are fully aware of and practicing ethical AI principles. Therefore, I believe having an ethical AI ecosystem (guidelines, frameworks, or even an AI healthcare policy) in place gives stakeholders a direction toward best practices. Also, many of the ethical principles are subjective. What may be biased to someone may not be to someone else. So, defining exactly how bias creeps in while dealing with an AI system and working towards guardrails that ensure this technology does maximum good and minimal harm is imperative. This goes back to my point about having an ecosystem of forming an ethics advisory committee that would exclusively deal with ethical matters of AI," - Archana.

"Training AI algorithms on skewed datasets can perpetuate existing healthcare disparities. If an AI relies on data primarily from a specific demographic, it may

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misdiagnose or under-serve patients from other backgrounds. AI algorithms can become biased if they inherit biases in the data they are trained on. This can lead to unfair outcomes for specific patient groups. Besides these impediments related to data bias and fairness, AI systems are vulnerable to cyberattacks, which could compromise patient data or manipulate AI outputs for malicious purposes. Also, over-reliance on AI without proper human oversight can lead to errors or missed diagnoses. I believe these impediments must be tackled before any AI-enabled approach is taken for patient care.

Clinical examination requires compassion and empathy, which are needed in any field of medicine and which AI-enabled robotic doctors cannot achieve.

Children usually experience extreme anxiety as they engage in healthcare settings and meet healthcare professionals. Engaging with robots may accentuate behaviors such as lack of cooperation, withdrawal, and aggression. Similarly, the use of medical robots in psychiatric hospitals may adversely affect patients who have severe psychiatric disorders" - anonymous.

Q 5: What global initiatives are being done to make AI technology ethical?

"Over the last few years, various global stakeholders have come together to address ethical AI technology. Countries actively incorporate principles from frameworks such as the UNESCO Ethics of AI into their strategies, the OECD AI Principles, and the G20 AI Principles that promote innovative, trustworthy AI use and respect human rights and democratic values. Countries like the United States of America, the United Kingdom, Europe, India, Australia, and Japan have released their own AI ethical frameworks.

Countries have devised their approaches, drawing inspiration from international guidelines. Notably, global forums like the Global Partnership on Artificial Intelligence (GAPI) have provided a platform for collaborative efforts among nations to tackle ethical challenges associated with AI. Additionally, initiatives like the UK's AI Safety Summit contribute to the ongoing dialogue on ensuring the ethical use of AI technologies. This collective commitment ensures AI's responsible development and deployment, focusing on fundamental principles like transparency, fairness, and accountability. Besides governments and international organizations, major tech companies, including Google, Facebook, Microsoft, IBM, and Amazon, have formed the Partnership on AI (PAI), which aims to address global challenges related to AI's impact on society. It fosters collaboration between industry, academia, and civil society to develop and share best practices on AI ethics.

The collaborative efforts of nations, tech companies, and experts are instrumental in shaping a framework that prioritizes responsible AI practices and safeguards societal well-being. Moving forward, these collective efforts are expected to play a crucial role in establishing ethical standards for the evolving landscape of AI technology," – Archana.

"Coalition of three specialized agencies of the United Nations, namely, WHO, ITU, and WIPO, each bringing unique expertise and contributions to this initiative has resulted in the formation of "The Global Initiative on AI for Health" [3].

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The second is "The European AI Alliance," an initiative of the European Commission to establish an open policy dialogue on Artificial Intelligence [4]. There are more of these, but I am tuned to the guidelines by the WHO" - anonymous.

Q 6: What training needs to be initiated for the stakeholders in this domain?

"In preparing to initiate stakeholders to ethical AI, especially in healthcare, I believe acquiring domain-specific knowledge in healthcare is crucial, as it provides insights into the industry's unique challenges and regulatory landscape. Additionally, a comprehensive training approach is essential.

This involves developing a foundation in AI fundamentals, encompassing machine learning, deep learning, natural language processing, and data analytics. Ethical training should focus on

- Principles related to privacy, data protection, and informed consent.
- Awareness of biases in AI algorithms and strategies to ensure fairness is pivotal. Familiarity with legal and regulatory compliance, such as HIPAA or GDPR, is imperative.
- Equipping individuals with risk management skills, including addressing data security and algorithmic risks, is paramount.
- Communication skills are vital in conveying complex AI decisions transparently to diverse stakeholders, including healthcare professionals, patients, administrators, and policymakers.
- Fostering a continuous learning mindset ensures staying abreast of evolving technologies, regulations, and ethical considerations in this dynamic field," - Archana

Q 7: What steps can governments take to ensure that AI in health is trustworthy?

"I believe that governments play a crucial role in establishing regulations and ensuring accountability in using AI systems. Without clear regulations or legally binding obligations, the risk of errors by AI users, especially in the healthcare industry, is heightened. Given the high stakes of handling sensitive data, the potential for discrimination and bias becomes a significant concern without proper oversight," – Archana.

"I am not a digital person, but I will be forced to use AI in healthcare now. I will also need to work with my colleagues who may use AI. Given the use of AI in clinical setup, I would like to see clear lines of accountability. I would also like to see robust training and skilling for the stakeholders so a formal process is established around using this technology. I don't want guesswork that can risk a patient's life." – Dr. Milind Bhide.

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A Rapid-Fire Round with an Ethics Expert

Here is a brief of a rapid-fire that I had an opportunity to conduct with my close friend, a clinician who now works with a team of AI application developers for clinical support.

Author: What is the most significant ethical concern in healthcare AI?

Dr. N: Creeping of bias in recommendations.

Author: With wearables feeding mountains of patient data to AI, how can we guarantee privacy isn't sacrificed for progress?

Dr. N: Ensure robust data governance that's essential to building trust with patients

Author: AI mental health chatbots are gaining traction, but can they replace a natural therapist's touch?

Dr. N: No, nothing can replace the human touch. The human-in-the-loop model seems to be the most plausible way to make AI safe in healthcare. AI can offer support, but the human connection remains irreplaceable.

Author: With AI automating tasks, are some healthcare jobs at risk? How can we ensure a smooth transition?

Dr. N: Reskilling and upskilling initiatives are vital to empowering healthcare workers for the AI age.

Author: Final thoughts on the future of AI in healthcare?

Dr. N: We are dealing with life. Ensure safety and ethics first.

Disclaimer: The views and opinions expressed in this interview series are those of the speakers and do not necessarily reflect the views of any entities or associated parties. Proprietary names of AI applications have been avoided unless explicitly mentioned by the interviewees.

 **Names changed or abbreviated to protect privacy

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Series Article   by Dr. Deepa Bhide

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About the Author

Dr. Deepa Bhide

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Dr. Deepa Bhide, MBBS, DCH, PMP, has over 20 years of professional experience where she has blended medical practice and research with IT and Project Management. She juggles consulting, training, and operations and is proficient in clinical medicine, project management, and healthcare information technology. Starting her career as a medical practitioner, she has worked with varied organizations before her current stint as Vice President, Training, Clinical Support Solutions for Inventurus Knowledge Solutions.

Deepa's growing interest and work in these areas, born from her day-to-day patient interactions, helped her view Project Management as a backbone of progressive healthcare. Her paper on "Patient Care - A Project Management Perspective" has received global recognition and acclaim. With a physician background as a solid foundation to leverage IT/PM skills and knowledge, Deepa has blended her broad-based experience and learnings to present a unified, holistic, and wholesome view of Project Management and Healthcare, a cross-domain confluence. Through various webinars, events, talks, and writings across platforms, Deepa has been an evangelist in championing global project management during the COVID-19 pandemic.

A Gold medalist from Osmania University for standing First in the MBBS course, she pursued her DCH in Pediatrics and Child health. Deepa has served various roles in local and global Project Management Institute (PMI) regions. She remains actively engaged with PMI and has been a participant and speaker for various national and

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Future of Healthcare and Artificial Intelligence (AI)
Series Article   by Dr. Deepa Bhide

global meetings and online events. Deepa lives in Hyderabad, India, and loves traveling, singing, and experimenting with global cuisine. She can be contacted at deepa.bhide@gmail.com.