

Book Review

Review of *Ethics of Medical AI*

Giovanni Rubeis, *Ethics of Medical AI* (Gewerbstrasse, Cham: Springer Nature, 2024)

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Abstract: When new technological advances like artificial intelligence (AI) are introduced into medical and healthcare practices, they create new solutions and controversies, forcing us to consider their ethical and moral applications. Patients are concerned about confidentiality and data mismanagement, while professionals struggle to understand the new technology, amidst fears that robots will replace them. In *Ethics of Medical AI*, Professor Giovanni Rubeis encourages professionals to think about the ethical and moral implications of adopting medical AI (MAI).

Keywords: AI, medicine, healthcare, nursing, ethics, data privacy, confidentiality, social media

Medicine and healthcare are arguably two of the most important fields. Professionals and practices in both fields are required to keep humans alive and healthy irrespective of race, economic status, political or cultural affiliation. When new technological advances like artificial intelligence AI are introduced into medical and healthcare practices, they create new solutions and controversies, forcing us to consider their ethical and moral applications. These are the issues addressed in *Ethics of Medical AI*, written by Giovanni Rubeis, Professor of Biomedical and Public Health Ethics at the Karl Landsteiner University of Health Sciences in Krems, Austria.

The author begins by discussing the ambiguous nature of medicine, describing it as an art and as a science. As an art, medicine is based on theory and requires creativity in practice. Medicine examines patients beyond the lab, viewing them as individuals made up of complex social relationships shaped by numerous social determinants. However, medicine is not always theoretical, it is based on complex scientific methods applied on the human body.

The author introduces evidence-based medicine (EBM), describing it as the leading paradigm in contemporary medicine. According to the author, the idea behind EBM is to ensure that contemporary clinical practice is informed by empirical evidence, using the best available technologies. However, the author warns against overreliance on technology and empirical knowledge that tends to diminish the value and personality of patients.

EBM set the stage for the introduction medical artificial intelligence (MAI). MAI is applied in numerous ways in medicine and healthcare. A few examples include, robots performing complex surgeries, machines diagnosing cancer and detecting irregularities in X-ray images, and smart wearable devices to collect and process data from everyday life, thus giving individuals better control over their own health and access to healthcare services. MAI creates desirable outcomes, including speedy and less stressful operations, thus improving the quality of life of patients and healthcare professionals.

The author stresses that MAI should not be viewed as a hype. It should rather be employed ethically to serve people. Here, the author touches on the controversies of reductionism and datafication created by the adoption of AI; situations in which patients are reduced to quantifiable health data to be studied, stored, and exploited. The author positions in support of arguments that AI adoption should be humanized to respect individual values, goals and experiences (Sassi et al., 2025) and (Bajwa et al., 2021).

In chapter seven, the author highlights the importance of conducive technology environments for MAI to be fully realized and functional. The author stresses that medical

and healthcare facilities will need to be transformed into learning healthcare systems (LHS), to make meaningful use of the increasing amount of digital medical tools and information. For this to be possible, medical and healthcare professionals need to upskill to understand and manage new AI tools. State public health agencies, academic health centers, health information technology organizations, research institutes and industry, and federal agencies for biomedical research, will need to collaborate to share and manage patients' data.

The author adds that upskilling in technical knowledge is not sufficient. Medical and healthcare professionals need to be aware of the broader ethical implications of AI. Here, the author's stance supports arguments that MAI technologies need to be tailored according to the individual needs of patients as well as recognizing the risk for exacerbating existing health inequities (Abdulhussein et al., 2021). However, the author's propositions ignore the economic and psycho-social challenges of implementing this transformation, especially within developing contexts, where medical and healthcare systems are underfunded, understaffed, and lack training and equipment (Abdelwanis et al., 2026). Where do healthcare professionals in developing countries begin from?

Confidentiality and data privacy are big concerns in medicine and healthcare. Many patients are concerned about their personal data, how it is collected, stored, and distributed. With the adoption of MAI, confidentiality and data have become even more contentious. According to the author, MAI requires the availability of large amounts of high-quality data, especially for training AI systems. Data and privacy are part of legal and social challenges that need to be overcome for the successful integration of MAI into clinical practice. It is expected that patients' data will mostly be stored in clouds due to their large size and for accessibility and exchange purposes. However, this raises the questions how data can be protected against theft and misuse and who has access for what purposes. According to the author, the management of personal data is more of a regulation and policy issue than a technical one.

Theoretically, the book is not situated under any single theory or theoretical perspectives. Rather, it is based on epistemic lenses from critical data studies. The author's theoretical stance gives the analysis a sharper focus on the social practices and power asymmetries that shape the adoption of new technologies like AI. However, the author does reference some key theories to support the arguments in some chapters. Of note, is the Gartner Hype Cycle Model to explain the mainstreaming of AI adoption in chapter one.

Like the Diffusion of Innovations Theory (Rogers, 1962), the Gartner Hype Cycle Model describes the timeline for the adoption of new technologies, particularly AI, in five phases. In Phase 1, there are sparks of interest in the new technology. Phase 2 is called peak of inflated expectations and signifies a period of enthusiasm and exaggerated expectations. This is followed by phase 3, the trough of disillusionment, a kind of hang-over phase after the high expectations have been shattered by failed implementation or mass production. Phase 4 is the slope of enlightenment, signifying a clearer understanding of the benefits and values of the technology and a re-kindled interest by the industry. In phase 5, the plateau of productivity, mainstream adoption starts as the technology enters the market and continues to expand from a niche product to a broader implementation.

Methodologically, the book is not based on a particular qualitative or empirical study. The author anchors the chapters on relevant case studies, theories, and models. This approach allows for the freedom to develop new arguments and challenge existing epistemologies on the ethical application of AI.

The book does justice in providing background knowledge on AI, and on the intricacies of ethics, data collection, and MAI. In chapters two and three, the author traces the evolution of AI and MAI. In chapter four, the author explores medical and data ethics, highlighting the importance of issues like trust, empathy, confidentiality, privacy, justice, and equity. In chapter five, the author demonstrates ethical methods for collecting data and minimizing reductionism and bias. In chapter six, the author discusses best practices for managing relationships between doctors, nurses, and patients in increasingly AI dependent environments. Chapter seven focuses on professionals and workspaces – the AI environment. In chapter eight, the author discusses current applications of MAI and points to future directions.

Structurally, the book is well arranged with each chapter setting the scene for the next. The author advances discourse on MAI ethics from the introductory chapters until the final chapter eight. Each chapter begins with an abstract to summarize its contents and ends with a reference lists for easy access to supporting literature. The index list at the end of the book will help readers to locate the complex computer science and medical jargons used throughout the book. However, a glossary to provide some background on the complex terminologies, would be appreciated in future editions.

Some concepts on the technology environment in chapter seven will need to be implemented and tested. The author describes the chapter as “an outlook on possible developments (p. 215) It would be good for future editions of the book to revisit the concepts introduced for example, ‘smart cities’, to measure their applicability and to test their effectiveness on patients and healthcare professionals.

The book is a technical read, addressed mainly to medical and healthcare professionals, including policymakers with some background knowledge of AI. As the author states, the book’s is meant for critical analysis and not to teach the modellings and workings of AI. Students and practitioners out of this range might find the book a bit challenging to read and follow. Some background knowledge in the above fields is required to fully benefit from the book’s knowledge resources.

AI technologies do not exist in isolation. They are produced, promoted, priced, and sold by companies and other corporate interests. Some scholars have described this as technological hegemony (Bourne, 2019). It will be good for future editions to consider the economic dimensions of MAI ethics. Possible questions to investigate could include: Which companies dominate the MAI manufacturing scene? Are MAI technologies produced ethically? Are MAI technologies available to all? Can MAI be applied in all medical and healthcare systems? Who is being priced out MAI?

For MAI to expand from niche product to broader implementation, there needs to be wide public awareness and acceptance. Science communication and social media need to be included in discourses on MAI. Science communication provides tools for simplifying, promoting and marketing new technological products, making them more understood and accepted (Ephraim, 2026). Social media provides platforms for discourse and promotion of new technologies and trends. Users get to share their experiences including testimonials and fears (Ephraim, 2024). It would be good for future editions to discuss the role of science communication and social media in promoting discussions on the ethical use of MAI.

The book will benefit healthcare professionals, policymakers, engineers, as well as researchers and students of medicine, the health sciences, nursing, social sciences, philosophy, and ethics. The book encourages professionals to think ethically and morally and provides best practices for adopting MAI.

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Conflicts of Interest:

The author declares no conflict of interest.

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