How Does AI Support Multidisciplinary Team Decisions?

Rasit Dinc

Rasit Dinc Digital Health & AI Research

Published: August 6, 2015 | AI in Clinical Decision Support

DOI: 10.5281/zenodo.17999327

Abstract

In the complex and dynamic landscape of modern healthcare, multidisciplinary teams (MDTs) have become the cornerstone of high-quality patient care. These tea...

How Does AI Support Multidisciplinary Team Decisions?

Author: Rasit Dinc

Introduction

In the complex and dynamic landscape of modern healthcare, multidisciplinary teams (MDTs) have become the cornerstone of high-quality patient care. These teams, comprising professionals from various specialties, bring diverse expertise to the table, fostering a holistic approach to treatment and decision-making. The integration of Artificial Intelligence (AI) into this collaborative environment is poised to revolutionize how these teams function, offering unprecedented opportunities to enhance efficiency, accuracy, and patient outcomes. By leveraging the power of AI, MDTs can overcome traditional barriers to communication and information sharing, leading to more informed and effective decisions. This article explores the multifaceted role of AI in supporting multidisciplinary team decisions, examining its benefits, challenges, and future implications for collaborative healthcare.

Enhanced Communication and Collaboration

Effective communication and seamless collaboration are critical for the success of any MDT. AI-powered tools and platforms are increasingly being utilized to streamline these processes, ensuring that all team members are on the same page. AI-driven communication platforms can facilitate real-time information sharing, breaking down the silos that often exist between different departments and specialties [1]. For instance, natural language processing (NLP) can be used to extract relevant information from electronic health records (EHRs) and present it in a concise and easily digestible format for all team members. This not only saves time but also ensures that critical

patient information is not overlooked. Furthermore, AI can provide consistent, evidence-based recommendations and personalized treatment plans, which serve as a common reference point for the team, thereby fostering a more cohesive and coordinated approach to patient care [1].

AI-Powered Clinical Decision Support Systems (CDSS)

One of the most significant contributions of AI to multidisciplinary teams is the development of advanced Clinical Decision Support Systems (CDSS). These systems are designed to assist clinicians in making complex decisions by providing them with evidence-based insights at the point of care. AI-powered CDSS can analyze vast amounts of patient data, including medical history, lab results, and imaging scans, to identify patterns and predict potential outcomes [2]. This enables the MDT to make more accurate diagnoses and develop more effective treatment strategies. For example, in oncology, AI algorithms can analyze medical images to detect tumors with a high degree of accuracy, providing valuable input to the multidisciplinary tumor board [3]. Moreover, in resource-limited settings, AI-enabled CDSS can play a crucial role in rationalizing clinical workflows and enhancing the decision-making capacity of healthcare professionals [2].

Challenges and Barriers to Adoption

Despite the immense potential of AI, its widespread adoption in multidisciplinary teams is not without its challenges. One of the primary barriers is the issue of trust. Clinicians may be hesitant to rely on AI-driven recommendations, especially if the underlying algorithms are not transparent or easily understandable [4]. Data security and patient privacy are also significant concerns that need to be addressed to ensure the safe and ethical use of AI in healthcare. Furthermore, integrating AI into existing healthcare infrastructure can be a complex and costly undertaking, requiring significant investment in technology and training [1]. The potential for AI to transform the existing professional and social positions of clinicians, such as radiologists, can also create resistance to its adoption [5]. Overcoming these barriers will require a concerted effort from all stakeholders, including healthcare professionals, technology developers, and policymakers.

The Future of AI in Collaborative Healthcare

Looking ahead, the role of AI in supporting multidisciplinary team decisions is expected to grow exponentially. As AI technologies become more sophisticated and user-friendly, they will become an indispensable tool for collaborative healthcare. The future of AI in this domain lies in creating a symbiotic relationship between human expertise and machine intelligence. AI should be viewed not as a replacement for human clinicians, but as a powerful assistant that can augment their capabilities and free them from routine tasks to focus on more complex aspects of patient care. To achieve this, it is crucial to develop co-creating communication practices with AI and to focus on the psychological and leadership processes that can facilitate its successful implementation [5]. By addressing the existing challenges and fostering a culture of innovation, we can unlock the full potential of AI to revolutionize multidisciplinary team decisions and deliver better patient outcomes.

Conclusion

In conclusion, Artificial Intelligence is set to become an integral part of multidisciplinary team decision-making in healthcare. From enhancing communication and collaboration to providing powerful clinical decision support, AI offers a wide range of benefits that can lead to more efficient, effective, and patient-centered care. While there are challenges to its adoption, these can be overcome through a combination of technological innovation, strategic planning, and a commitment to ethical principles. As we move forward, the successful integration of AI into multidisciplinary teams will be a key determinant of our ability to meet the evolving needs of patients and deliver the highest quality of care.

References

[1] Hu, L., Argus, G., Pineda, R. C., MacAskill, W., & Martin, P. (2025). The role of artificial intelligence in enhancing interprofessional education and collaborative practice: a mixed methods scoping review. *Journal of Interprofessional Care*, 1-9.

[2] Borkar, S. R., Singh, B., & Mustafa, M. (2025). AI-Based Clinical Decision Support in Multidisciplinary Medicine. *European Journal of Cardiovascular Medicine*, *15*(9), 51-55.

[3] Helman, S., Terry, M. A., Pellathy, T., Hravnak, M., George, E., Al-Zaiti, S., & Clermont, G. (2023). Engaging Multidisciplinary Clinical Users in the Design of an Artificial Intelligence–Powered Graphical User Interface for Intensive Care Unit Instability Decision Support. *Applied Clinical Informatics*, *14*(04), 789-802.

[4] Galsgaard, A., Doorschodt, T., Holten, A. L., Müller, F. C., Boesen, M. P., & Maas, M. (2022). Artificial intelligence and multidisciplinary team meetings; a communication challenge for radiologists' sense of agency and position as spider in a web?. *European Journal of Radiology*, *155*, 110231.

[5] Galsgaard, A., Doorschodt, T., Holten, A. L., Müller, F. C., Boesen, M. P., & Maas, M. (2022). Artificial intelligence and multidisciplinary team meetings; a communication challenge for radiologists' sense of agency and position as spider in a web?. *European Journal of Radiology*, *155*, 110231.