
Generative AI in Healthcare: Trends, Challenges, and Future Directions



Generative AI (gen AI) has the potential to revolutionise the healthcare industry, offering unprecedented opportunities to enhance patient care, streamline operations, and improve clinical outcomes. As healthcare organisations increasingly explore the use of this technology, they are confronted with both exciting possibilities and significant challenges. Based on recent surveys conducted among healthcare leaders, McKinsey explores the current trends in the adoption of generative AI in healthcare, the primary challenges faced by these organisations, and what the future might hold for the integration of gen AI in the sector.

Adoption Trends in Generative AI

The adoption of generative AI in healthcare is on a promising trajectory, with a significant majority of healthcare organisations either implementing or exploring the use of gen AI tools. According to a Q1 2024 survey, more than 70% of respondents from various healthcare organisations, including payers, providers, and healthcare services and technology (HST) groups, are actively pursuing or have already integrated gen AI into their operations. This marks a notable increase in interest from previous surveys, indicating a growing recognition of gen AI's potential benefits to the healthcare industry.

However, the survey also highlights a segment of organisations that remain cautious, with some adopting a wait-and-see approach. This hesitancy can be attributed to various factors, including concerns about the risks associated with implementing untested technology, the investment required to build the necessary capabilities, and uncertainties surrounding regulatory compliance. Despite these concerns, the overall trend suggests a positive momentum toward broader adoption of gen AI, driven by the potential for significant improvements in areas such as clinical productivity, patient engagement, and administrative efficiency.

Challenges in Scaling Generative AI

While the enthusiasm for gen AI is evident, the road to widespread adoption is fraught with challenges. One of the most significant barriers to scaling gen AI in healthcare is the concern over risks, particularly those related to patient safety, data privacy, and the accuracy of AI-generated outputs. These risks are exacerbated by the high stakes involved in healthcare, where even minor errors can have serious consequences. As a result, many organisations prioritise developing robust governance frameworks to manage these risks effectively.

In addition to risk management, healthcare organisations face challenges related to technical readiness. The survey indicates that insufficient data and technology infrastructure, as well as a lack of clear value propositions, are significant obstacles to implementing gen AI at scale. Many organisations are still in the early stages of building the capabilities required to deploy gen AI solutions effectively, including technical infrastructure and the necessary talent and expertise. This lack of readiness often leads to a slower adoption rate as organisations struggle to validate the capabilities of gen AI and demonstrate its value in real-world applications.

Strategic Partnerships and Future Directions

Given the complexities associated with developing and integrating gen AI solutions, many healthcare organisations are opting to form strategic partnerships with third-party vendors. According to the survey, 59% of respondents from organisations already implementing gen AI are partnering with external vendors to co-develop customised solutions. This approach allows healthcare providers to leverage specialised AI firms' expertise and resources while ensuring that the solutions are tailored to their specific needs.

In contrast, a smaller percentage of organisations choose to build custom gen AI capabilities in-house or purchase off-the-shelf products. The decision between building versus buying often depends on an organisation's technical maturity and the complexity of the use cases they intend

to address. For instance, off-the-shelf solutions may be sufficient for more straightforward applications, such as customer service, where the technology has matured faster. On the other hand, organisations with more advanced technical capabilities may opt to develop bespoke solutions to address unique challenges or capitalise on specific opportunities.

The continued evolution of strategic partnerships will likely shape the future of generative AI in healthcare, advances in AI technology, and the development of robust governance frameworks. As organisations gain more experience with gen AI, there is an expectation that its use will expand beyond clinically adjacent applications to more core clinical functions. This could further improve patient outcomes and operational efficiency, ultimately enhancing the overall patient experience.

Conclusion

Generative AI holds immense potential to transform the healthcare industry, offering new ways to enhance clinical productivity, improve patient engagement, and streamline administrative processes. While adopting this technology is gaining momentum, healthcare organisations must navigate a complex landscape of risks, technical challenges, and strategic decisions. By forming strategic partnerships and focusing on building the necessary capabilities, healthcare providers can position themselves to fully realise the benefits of gen AI. As the technology continues to evolve, it will be crucial for organisations to develop robust governance frameworks to ensure that the adoption of gen AI aligns with regulatory standards and ethical considerations, ultimately leading to better care for patients and more efficient healthcare systems.

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