ROLE OF GENAI IN TRANSFORMING TELEHEALTH

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Provider shortage, risk of exposure to infection, lengthy appointment wait times, appointment availability during peak working hours, and heavy traffic are some of the reasons why AI-driven telehealth is becoming more popular nowadays. The COVID-19 pandemic necessitated the use of telehealth for office-based physicians to provide patient care. From 2019 to 2021, telehealth use increased from 15.4% to 86.5%[1] and during the pandemic, 94% of healthcare executives report that AI adoption had expanded throughout their organizations.[2]

AI-powered telehealth services include, the processing and interpretation of medical data, support for clinical decision-making, help with diagnosis, administrative work automation, disease outbreak prediction, and more. These applications include machine learning, deep learning, natural language processing, and data analytic techniques. Large-scale patient data, medical records, imaging data, and genetic profiles can all be analyzed by AI systems to gain important insights, assist medical professionals, enhance patient outcomes, and maximize operational effectiveness in healthcare settings.

With growing technology and healthcare awareness among members, AI-driven telehealth applications have become a necessity rather than an option. As per a Microsoft-IDC study conducted in March 2024, 79% of healthcare organizations are presently utilizing AI technology.[3]

Key Drivers of GenAI-led Telehealth

Payer

- Competitive edge

- Client satisfaction and member retention

- Reduction in urgent and emergency visits resulting in savings

- Revenue growth

Provider

- Quick and easy access to patient data

- Less risk of exposure to infection

- Enhanced provider collaboration across the globe

- Time-saving

Patients

- Personalized treatment plan

- Accessible health data

- Easy access to providers from home

Key Challenges of Implementing AI in Healthcare

As the need and usage of telehealth services powered by AI increases, there are certain risks that AI brings into the picture, some of the major ones being:

Privacy and security concerns: Safeguarding patient data and ensuring compliance with regulations like HIPAA is crucial when using AI in telehealth.

Data quality and bias: AI algorithms heavily rely on high-quality data and biases in datasets can lead to inaccurate or discriminatory results, affecting patient care.

Legal and regulatory barriers: Navigating the complex legal and regulatory landscape surrounding telehealth and AI implementation can be challenging for healthcare providers and technology developers.

Integration with existing systems: Incorporating AI technologies into existing telehealth systems and workflows can be complex and time-consuming.

Patient acceptance and trust: Convincing patients to trust AI-driven healthcare solutions and ensuring they feel comfortable with remote care can be a hurdle. 69% of Americans are uncomfortable with their provider relying on AI.[4]
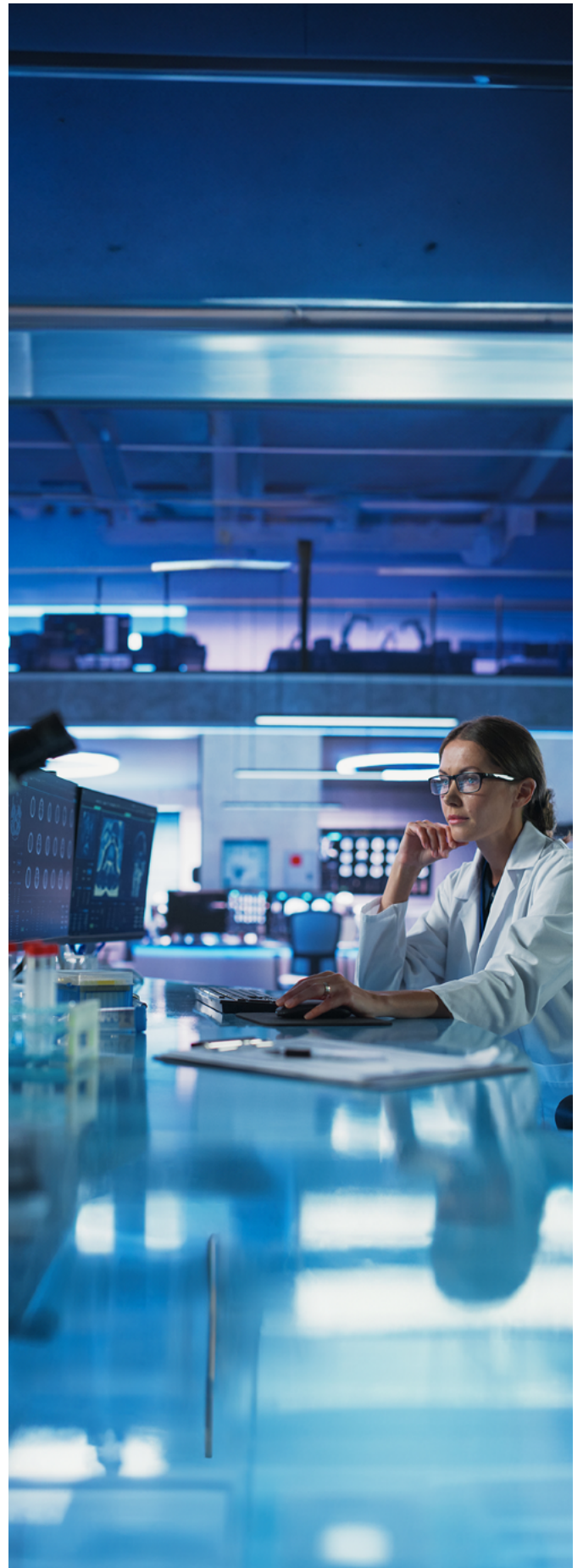
Industry Trends around Adaptation of GenAI in Telehealth

GenAI offers a wide range of platforms to improve quality of care and reduce wait times for patients.

AI in Virtual Care

GenAI helps in assessing patient symptoms virtually and recommend treatment plans. It also helps the provider to create personalized treatment plans, while reducing wait times for appointments, therein improving member satisfaction.

With GenAI, virtual help is available 24/7, thus patients can have the luxury of accessing health records and resources whenever they want.

AI in Remote Monitoring and Consultation

GenAI creates remote monitoring systems that enable continuous tracking of patient health, which is helpful for patients with chronic conditions. Patient information can be collected in real-time, including blood pressure, temperature, heart rate, and sugar levels, and these can be converted into electronic health records for providers to analyze.

GenAI also helps early detection of any bigger health crisis and can call for immediate medical attention, which reduces the need for emergency or urgent care visits.

AI in Improving Accuracy in Image Diagnosis

GenAI algorithms help analyze images from CT-scan, X-rays, and MRIs very precisely to assist providers and radiologists to make faster decisions on treatment. This helps improve efficiency for the radiology department to check more patients.

GenAI also enables strong collaboration among healthcare professionals for disease diagnosis by interpreting data collected through images, especially when healthcare providers are located in different places and time zones.
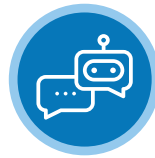
AI-driven Chatbots and Virtual Assistants

GenAI helps create more engaging and lively virtual environments between healthcare professionals and patients. It's estimated that chatbots driven by AI would save healthcare organizations $3.6 billion worldwide.[5]

GenAI can understand partial or full sentences and help with routine administrative tasks such as scheduling appointments, claim status, plan coverage, or prescribing medications. This is achieved through natural language processing and conversation algorithms. This helps workers to focus on more complex queries or handle critical issues. The implementation of AI in healthcare reduced around 20% of physician's time in administrative tasks.[2]

AI Usage in Predictive Analytics

Electronic health records and other patient records are analyzed by AI algorithms to predict the symptoms of any developing disease or worsening condition and help providers to intervene early and create a treatment plan for the individual. Researchers at the University of British Columbia have developed an AI model capable of identifying patient characteristics from oncologist's notes. Impressively, this model can predict cancer survival with an accuracy rate of 80%.[2]

GenAI offers some technical benefits over other platforms. Some of them are:

Scalability: GenAI offers one of the most unique features in AI, which is to scale up the system based on patient needs and trending demands. This is extremely useful during the time of events such as a global pandemic or an emergency.

Data security and privacy: GenAI can help create a robust system and infrastructure to maintain patient data security and privacy. This can help create a trust in telemedicine technology.

Cost reduction: Telehealth driven by GenAI lowers the cost of healthcare by doing away with the requirement for physical infrastructure, travel fees, and other related costs.

Resource optimization: GenAI helps healthcare institutions make better use of their resources by automating some processes and streamlining workflows, ensuring that staff and equipment are used efficiently.

Steps for Successful Implementation of AI in Telehealth

Identify use cases: The first step is to assess the potential applications in telehealth and pinpoint areas (such as remote monitoring, image analysis, or virtual assistants) where AI could simplify procedures or enhance value.

Gather data: Collaboration with healthcare providers can facilitate the gathering of a large, unbiased dataset that spans all genders, races, ethnicities, and demographic regions, rather than just focusing on a specific group.

Develop algorithms to train on this data: This data can then be used by data scientists and AI professionals to develop algorithms, employing various AI techniques like machine learning or deep learning.

Integration and testing: The fully realized AI algorithms can subsequently be integrated into real-world working environments via digital devices and tested for their reliability and accuracy.

Monitor and improve: Once AI is incorporated into telehealth, it's crucial to maintain ongoing monitoring and identify areas of improvement through regular surveys and feedback. The AI algorithms can be refined based on these insights.

The Future of GenAI in Telehealth

Thanks to advancements in the field of GenAI technology, intelligent algorithms, cloud computing, and digital devices, the telehealth market is expected to reach a value of USD **590.6 billion** by 2032 from **USD 60 billion** in 2022 with CAGR of **25.7%**.[6] Some of the key changes over the next few years should include the following:

Better patient and provider communication: Chatbots and virtual assistants working on GenAI platform will advance in their capacity to comprehend and react to natural language (i.e. simple to complex sentences), enabling smooth communication between patients and healthcare professionals.

Integration with large amount of data: In order to provide a more thorough picture of each person's health, future innovations may involve integrating GenAI with a variety of data models and training models on large amounts of electronic health records.

5G connectivity: By enabling quicker and more dependable connection between medical equipment, 5G technology will assist the expansion of telehealth and guarantee a positive experience for both patients and medical professionals.

Promotion of health literacy: GenAI-driven solutions can help advance health literacy by giving patients clear, actionable information and education materials that will help them better comprehend their medical concerns.

Conclusion

Gen AI can enhance telehealth services by improving diagnostic accuracy, personalizing patient care, streamlining administrative tasks, and enabling remote monitoring of patient health. With advancements in machine learning and natural language processing, GenAI can assist healthcare providers in making faster and more informed decisions, leading to better patient outcomes and it can further help reduce overall cost. AI and machine learning are expected to help reduce healthcare costs by $13 billion by 2025.[2] As GenAI continues to evolve, we can expect to see even more innovative applications in telehealth, ultimately transforming the way medical care is delivered.

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