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mercy care

OVERVIEW OF ARTIFICIAL INTELLIGENCE (AI) APPLICATIONS IN HEALTHCARE

The integration of artificial intelligence (AI) in healthcare has been vastly utilized to automate clinical workflow, improve decision-making, and increase diagnostic accuracy. AI in behavioral health, may be used in multiple areas, such as supporting the diagnosis of depression. A systemic review published in 2025 found that by having AI models interpret a wide range of data, such as clinical interviews, self-report questionnaires, speech and language patterns, information from wearable devices, and digital behaviors, it may aid in identifying depressive symptoms. Numerous studies that have integrated AI approaches have shown accuracy and are essentially an aid for clinicians in making the diagnostic process more consistent. Despite the positives mentioned, the study also mentioned drawbacks associated with the integration of AI; some of those include biased training data, a lack of complete transparency in the way AI decides and a lack of validation in the realm of clinical settings. While these studies have demonstrated that AI does have the potential to improve the diagnoses of depression in patients, there still needs to be more research conducted before it can be fully implemented into all clinical practices (Ghorbankhani et al., 2025).

KEY ADVANTAGES AND POTENTIAL BENEFITS

Faster diagnostic turnaround, increased accuracy for certain therapeutic activities, greater risk predication and a greater number of individualized therapy suggestions are among a few advantages of AI. It has been noted by regulatory organizations that AI-driven automation is able to decrease medical errors, decrease the rate of clinician burnout and immensely improve a patient' s outcome (U.S. Food and Drug Administration, 2019). These benefits point to a safer, more effective, more efficient delivery of healthcare thanks to AI.

A specific and recent study that exemplified the benefit of AI is in its usage for improving the diagnosis and understanding of schizophrenia by the analyzation of neurobiological data. In a study conducted in 2025, machine learning algorithms were utilized to study brain connectivity patterns from functional magnetic resonance imaging (FMRI). The AI models utilized showed substantial advancement in identifying neural biomarkers that may be very difficult to spot with only the utilization of standard clinical assessment. These results come to show that AI in combination with clinician experience were able to diagnose schizophrenia earlier, improve clinical decision-making, and lead to more individualized treatment options (Li et al., 2025).

CHALLENGES AND DISADVANTAGES TO CONSIDER

Despite all the benefits that come with AI, the following are major challenges that are presented: data privacy concerns, algorithmic bias, lack of transparency in model decision-making, and the risk of becoming overly reliant on automated systems. To guarantee safety, ethical use, and accountability in real life settings, it is necessary that regulating bodies constantly emphasize the need for ongoing performance monitoring, strict validation, and transparent governance frameworks (U.S Food and Drug Administration, 2019).

In the realm of data security and privacy, the integration of AI in healthcare involves the need to access patient specific information such as medical records, imaging, labs, etc. These pieces of information are "important and vulnerable" which could make them main targets for cyberattacks or data breaches.

Nonetheless, due to the lack of any universal adapted standard or guideline for the ethical/moral use of AI in healthcare, this could result in an increased risk of misuse or the accidental exposure of data. In addition, due to the of guidelines, the incidence of "ethical dilemmas" involving matters such as confidentiality, data ownership, consent in the usage of AI in clinical setting do arise as well. To further add, there is an unclear responsibility of who would take blame upon any errors that would arise with AI decisions (Khan et al., 2023).

Many AI techniques, in particular deep learning, are "black boxes"-meaning they make predictions of suggestions without the integration of a transparent, comprehensible reasoning process. Therefore, without interpretability, it makes it more challenging for patients to accept and for physicians to defend or even verify decisions made by AI. To further add, another major concern addressed previously is the risk of clinicians becoming too reliant on AI, forgetting that it is a tool not a replacement for human judgment or clinical experience. Having too much trust in AI could result in unreasonable expectations, incorrect diagnoses, or poorer outcomes-especially in any complex cases where human judgment/ calls are essential (Khan et al., 2023).

References:

1. Ghorbankhani, M., & Safara, M. (2025). Artificial intelligence in depression diagnostics: A systematic review of methodologies and clinical applications. *Artificial intelligence in medicine*, *172*, 103320. Advance online publication. https://doi.org/10.1016/j.artmed.2025.103320
2. Li, C., Chen, J., Dong, M., et al. (2025). *Classification of schizophrenia spectrum disorder using machine learning and functional connectivity: Reconsidering the clinical application*. **BMC Psychiatry, 25**, 372. https://doi.org/10.1186/s12888-025-06817-0
3. U.S. Food and Drug Administration. (2019). Proposed regulatory framework for modifications to AI/ML-based software as a medical device (SaMD). https://www.fda.gov/media/122535/download
4. Khan, B., Khan, M. A., Kumar, R., Mehbodniya, A., & Shanmuganathan, V. (2023). Drawbacks of artificial intelligence and their potential solutions in the healthcare sector. *Journal of Healthcare Engineering, 2023*, 1–12.https://pubmed.ncbi.nlm.nih.gov/36785697/

PREFERRED DRUG LIST UPDATES CAN BE FOUND HERE:

ACC-RBHA, DD, ALTCS and DCS CHP	Behavioral Health (Non-Title 19/21)

** Drugs that are not on the formulary will require a PA (prior authorization) request to be submitted**

Reminder for quicker determinations of a Prior Authorization use the ePA link for Our Providers: Please click here to initiate an electronic prior authorization (ePA) request.

This newsletter is brought to you by the Mercy Care Pharmacy Team. For questions, please email Fanny A Musto (MustoF@mercycareaz.org), Jasmine Phillips (PhillipsJ6@aetna.com)