

The use of AI solution in the prevention and the response of re-emerging infectious diseases: A scoping review to identify the most recent use cases 2023

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Infectious diseases continue to pose significant global health challenges, with their potential for widespread epidemics and pandemics. The COVID-19 pandemic has underscored the need for robust infectious disease control and management strategies. This scoping review explores the integration of Artificial Intelligence (AI) into healthcare systems to address infectious diseases. It assesses the potential applications of machine learning technologies in the diagnosis, monitoring, treatment, and control of emerging infectious diseases. The objectives include identifying key use cases for AI in response to infectious diseases, by evaluating 2023 relevant peer-reviewed articles using PRISMA-ScR criteria, and synthesizing available literature on AI's role in clinical and public health decision-making for infectious agents.

Additionally, the review examines tools and technological approaches for data processing, monitoring, early detection, and forecasting of infectious disease rates. The search strategy focused on the (PubMed [NCBI] database. The databases searched for only the 2023 published articles on the use of AI in the identification, control, or treatment of infectious disease and extracted all the relevant peer-reviewed literature, and a total of 113 articles were retrieved. Important Machine learning, Deep Learning, Natural Language Processing, Pre trained transformers, and AI Imaging applications were identified and highlighted for this scoping review. The findings from this review contribute to our understanding of how AI can enhance infectious disease control and inform future research and development efforts. Ultimately, the integration of AI presents opportunities to strengthen healthcare systems' preparedness and response to infectious disease threats.

Biography

Mansour Saine is a dedicated professional known for his contributions to the field of infectious diseases, currently affiliated with the Medical Research Council (MRC) Unit the Gambia at the London School of Hygiene & Tropical Medicine (LSHTM) in Gambia.

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