

Does AI hold the master key to unlocking accurate diagnosis and treatment?

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In an era quickly transforming with the introduction of machine learning and artificial intelligence (AI), the implementation of these technologies into the medical field is crucial to reducing instances of misdiagnosis and improving patient outcomes.



Source: [Pexels](#)

It's no secret that South Africa's healthcare sector is plagued by a host of obstacles. From systemic to structural challenges, the accuracy of medical diagnosis in the ever-evolving healthcare landscape continues to pose a problem.

While an accurate diagnosis forms the basis for any treatment patients may receive, determining the correct cause of an illness is certainly not a simple matter, particularly as many present similar symptoms. Just take Covid-19, for example, where the attributing symptoms are comparable to several other illnesses, including influenza.

Studies on medical diagnosis have revealed the alarming consequences of misdiagnosis, particularly for those with serious conditions. Incorrectly diagnosed illnesses may result in ineffective treatment plans that could cause irreversible harm and damage to patients' health and wellbeing.

Determining the cause of a medical condition involves several diagnostic tests, including imaging tests, such as x-rays,

magnetic resonance imaging (MRI) and computed tomography (CT scans); blood tests, and biopsies. While these tests have proven effective in helping healthcare providers determine the optimal course of treatment for patients, they are not always 100% accurate.

So much so that in the United States, over 12 million people are affected by these errors, with an estimated 40,000 to 80,000 succumbing to complications from misdiagnoses every year. And it's not only abroad, with the Health Professions Council of South Africa warning of an increase in patient misdiagnosis complaints over the past few years.

One solution lies in leveraging the capabilities of AI and its associated algorithms. This can provide healthcare professionals with advanced data analysis capabilities for more accurate medical diagnoses.

While some may argue that AI has been around for some time, stemming back as early as the 1970s with the introduction of Mycin, an AI programme that helped identify blood-infection treatments, it is only in the modern era that advanced AI is cementing its place as a critical tool across all facets of the industry.



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AI has the potential to revolutionise medical diagnosis by improving efficiency across all facets of the healthcare industry, ensuring unsurpassed levels of accuracy and speed. In addition, it is capable of analysing imaging tests, as well as large amounts of patient data such as 2D and 3D imaging; bio-signals (ECG, EEG, EMG, and EHR); vital signs; demographic information, medical history; and laboratory test results. The possibilities are endless.

AI's impact across healthcare sectors

The benefits of AI have been felt across multiple sectors of the healthcare spectrum. From new AI-based approaches that predict if and when a patient could die of cardiac arrest, to AI skin-cancer screening technology that has identified over 2,200 skin cancers and helped over 22,000 patients avoid unnecessary face-to-face appointments since 2020, AI is proving its worth as a useful tool in combatting diseases.

Also, aspects such as patient wait times have been reduced, resulting in a faster and more positive patient experience. This is after researchers from Johns Hopkins Hospital in Maryland, United States, implemented AI techniques to improve the efficiency of patient operational flow. To date, this has seen a 60% improvement in timely patient admissions and a 21% increase in patient discharges before noon.



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According to the World Health Organization, this is just the tip of the AI iceberg, with AI implementation set to dramatically change between now and 2030.

Connected care will provide a network of seamless data sharing that will create life-saving connectivity for patients, regardless of where they are in the world. It will also provide predictive care by evaluating the probability of a patient developing a disease in the future and improving patient and healthcare provider experiences by reducing wait times and greatly improving healthcare efficiency.

Whatever way we look at it, the advent of AI in the healthcare sector is inevitable. It holds immense promise for

revolutionising the industry and should be considered a valuable partner in not only the pursuit of more effective and efficient medical diagnosis, but also in enhancing the quality of care and saving the lives of countless patients.

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