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Smart Dubai and DHA use AI to save lives

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Advanced AI technology will serve to forecast a patient's future condition.

Smart Dubai has unveiled a new artificial intelligence (AI) use case in the healthcare sector as part of its AI Lab initiative, conducted in collaboration with the Dubai Health Authority (DHA) and IBM.

The use case adds a milestone on Smart Dubai's roadmap, which seeks to harness artificial intelligence to propose practical solutions, develop sophisticated services, and improve people's lives. It is part of the AI Lab programme, which seeks to explore advanced technological solutions to improve quality of life in the emirate and accelerate smart transformation in the services sector.

The proof of concept (PoC) allows healthcare professionals to pre-emptively forecast a patient's future condition, by tracking six vital signs, including blood pressure, temperature, and pulse, among others. Nurses feed this data into the high-precision AI system, which analyses them to predict how a patient's situation will progress, take the necessary precautions, and potentially save many lives.

Thousands of patients across four hospitals – Rashid Hospital, Latifa Hospital, Dubai Hospital, and Hatta Hospital – were part of the PoC, where the system was trained to process these patients' data. The procedure helps improve the efficiency of various medical practices, such as early detection, in addition to streamlining nursing and healthcare management.

His Excellency Wesam Lootah, CEO of the Smart Dubai Government Establishment, emphasised the importance of artificial intelligence technology in providing effective tools to improve the lives of residents and visitors, providing safe and innovative experiences that improve performance across government entities, and ultimately transforming Dubai into the happiest and smartest city in the world.

"Today, in collaboration with our strategic partners in the government and private sectors, and as part of our AI Lab initiative, we are introducing a new and unique experience that could potentially save countless lives. The technology offers a comprehensive reading of patients' health, providing healthcare professionals enough time to intervene in cases of emergency," H.E. Lootah added. "This constitutes a notable and revolutionary addition to the healthcare sector, allowing for a

more optimal use of resources. With this new experiment, the AI Lab moves further along its roadmap, paving the way for more AI-based experiments."

For his part, Dr Younis Kazem, CEO of Dubai Healthcare Corporation at the DHA, said the smart transformations taking place at DHA facilities are a testimony to the Authority's commitment to the directions of the UAE Government and Dubai's goal of transforming itself into a smart city that provides quality services to its people.

Dr Kazem stressed that the health sector has benefitted tremendously from the rapid developments in the adoption of technology and smart solutions witnessed across the world, adding that the Authority has made significant strides in acquiring the best technologies in AI and 3D printing to provide integrated healthcare services in all of its medical facilities.

The PoC revealed that deteriorating health conditions in patients can be detected anywhere from one hour to 20 hours beforehand with 90% to 98% accuracy. The pilot also demonstrated that the system is capable of determining the precise moment where a patient's condition is likely to deteriorate after leaving the intensive care unit.

Furthermore, the trial revealed three main benefits the DHA and participating hospitals can look forward to, the first of which is an increased potential to save lives by means of a sophisticated system that draws on accurate data to pre-emptively determine critical cases and take the necessary precautions in time.

The second benefit pertains to better management of hospitals' resources, particularly doctors and nurses, who will have more time to dedicate to caring for patients. And third, the system will enhance medical crews' performance, providing them with the data they need to make sound decisions, and offering insight that would normally take years of experience in the medical sector to accumulate.

Since its inception in 2017, the AI Lab has collaborated with 20 government entities, identifying more than 43 use cases as part of the AI Roadmap, and implementing four projects and smart instant-chat channels so far. Furthermore, it has implemented seven experiments with various government entities.