

AI Nurse set to transform standards of care for heart failure patients in China

A new AI-enabled disease management tool in China aims to improve the lives of millions of patients with heart failure.

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A fast-paced Novartis joint development project with one of the world's largest technology companies has created an innovative, AI-enabled digital nurse to support heart failure patients in China.

Co-developed with China's internet multinational Tencent, together with leading Chinese medical organizations, AI Nurse launched on April 30 and will serve as a patient needs-led intelligent platform supporting patients, physicians and nurses to better manage heart disease.



This program is the first of its kind in China to build up a digital chronic disease management model together with hospital and physician visits, which makes it possible for heart failure patients to do more self-monitoring and management. The aim is to provide a caring, convenient assistant, accessible 24/7, to improve users' capacity in self-initiating healthcare actions. Overall, the goal is to reduce re-hospitalization and improve other outcomes in a country where heart disease is on the increase.

This new AI-enabled solution engages with patients in a familiar and caring digital setting – easily accessible within a social media platform used for everyday living by more than 1.1 billion of China's 1.4 billion population.

Growing need

In China, morbidity and mortality are on the rise, as the population ages. Prescription adherence is poor once

patients leave hospitals without community support, and many patients with heart failure are re-hospitalized several times within a year of their initial cardiovascular event.

As the leading cause of death in China, accounting for two out of every five deaths, chronic heart disease is a key issue in the country's national 'Healthy China 2030' plan, which outlines health priorities, science and technology innovation as strategic platforms.

The Novartis partnership with Tencent is a bold move to maximize the potential of digital transformation in engaging with patients and healthcare professionals to better manage chronic diseases. We are going big on data and digital to prepare for disruptive healthcare scenarios in the future, reimagining medicine with the power of data science and digital technology.

"To transform how medicine is practiced, you have to do something really deep – and this is a bold move that will really make a difference," says Dr. David Fan, executive director of Tencent's Medical AI Lab. "85% of the disease spectrum is chronic, and that's a huge burden on patients, their loved ones, the healthcare system and society in general. We are demonstrating that a digital platform can transform chronic disease management. Our long-term vision from this collaboration with Novartis is to change how medicine is practiced, to benefit as many patients and their loved ones as possible."

Potential



This new AI Nurse platform could benefit 16 million patients with heart disease in China. Sitting within Tencent's WeChat social media platform, used by the Chinese for everyday lifestyle needs such as booking a taxi and ordering food, AI Nurse is designed to be user-friendly and easy to access.

The new heart failure management platform covers daily health indicator monitoring and health condition assessment through voice and image recognition and interaction, including a voice-enabled chatbot facility and a link back to hospital physicians. It also provides personalized education materials, schedules follow-up appointments and enables repeat prescription ordering.

Fast pace

Since the agreement with Tencent was finalized in October 2019, development of the platform has moved at speed.

A prototype of AI Nurse – a mini app for heart failure patients – was demonstrated in just a week from contract signing. China's top cardiovascular specialists welcomed the innovation when it was presented at the China International Import Expo in November 2019. A month later, the physician interface became available for testing; both versions incorporated detailed user feedback and insight.

After trials at three Chinese hospitals in January, 17 additional features were developed, plus a third interface, for nurses to support ongoing interactions with patients after hospital discharge in a country with no established primary care structure.



Novartis AI Nurse Digital & Franchise Team, March 2020

Disease-specific, not drug-specific

The new digital healthcare resource applies to any patient with heart failure in China, regardless of whether he or she is prescribed Novartis drugs or those from other pharmaceutical companies.

“We have lots of collaborations with many different sectors, but this is a flagship project for us because of how many patients are in scope. Novartis has put a lot of emphasis on digital and they are leading in this field to develop a service that will benefit a whole patient population, not just those on its own products.” says Tencent AI Nurse Product Director Mike Tang.

According to Christian Hein, Novartis Executive Director Digital Products, AI Nurse could ultimately widen its reach and inspire future innovation.

We've developed patient support programs in the past but nothing on this scale – chronic disease management across China's entire heart failure patient population. This is a first for the industry, and we aim to be a role model for others to follow.

Christian Hein, Novartis Executive Director Digital Products

The new digital solution will initially roll out to 500 hospitals and over 60 000 patients nationwide. Insights from the rollout will be used to inform continuous product improvement.

Additional resources

[Novartis Annual Review 2019 - Strategic priorities \(data and digital\) \(PDF 7.4 MB\)](#)

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