

Watch list: Four things that could change healthcare as we know it

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Fact may be stranger than science fiction as artificial intelligence moves into consulting rooms. Technology is fast changing the way we think about healthcare, from tailor-made medicines to genetic make-up and virtual doctor rooms



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In the future, your child's babygrows could tell you why that cough just won't go away. It's a world in which patients can pop pill-sized cameras to allow doctors to get a glimpse of internal organs to diagnose conditions such as stomach cancer.

Discovery Health chief executive Jonathan Broomberg recently presented four trends straight out of science fiction that could shape the healthcare of tomorrow.

1. Couture medicine

In the not-so-distant future, medicines could be tailor-made for individuals. Currently, doctors treat most patients with standardised medicine: "If a patient has diabetes, doctors prescribe insulin — as they do for all patients with diabetes."

He predicts advances in personalised medicine will change this. It is a field in which an individual's unique characteristics, including their genes, guide how healthworkers diagnose and treat them.

The breast cancer drug Herceptin has been called the poster child for personalised medicine. The genetically engineered drug is designed to target proteins that appear on the breast cancer cells in about 25% of patients. In the future, doctors will increasingly analyse DNA to tailor therapy to, for example, patients' individual tumours. Broomberg says the approach may one day virtually eliminate deaths from some forms of cancer such as breast cancer.

2. Say hello to Dr Algorithm

Your next doctor's appointment may happen on your smartphone. Virtual consultations are gaining in popularity.

In January, the United States-based interactive health company HealthTap launched a new app called Doctor AI, as in "artificial intelligence".

Users input their symptoms into the app, which plugs this information and data from their patient files into sophisticated algorithms

With these algorithms based on doctor-sourced clinical expertise, the app dispenses medical advice and can help users schedule either in-person visits or live virtual consultations with doctors.

Broomberg explains that apps like this will decrease preventable hospital admissions and help link patients to care earlier. App-based consultations are also likely to take less time than traditional doctor visits.

He says: "A dermatologist may take 15 minutes to make a diagnosis from looking at a picture, while the machine [will take] 15 seconds to study and give a diagnosis."

3. Sensors may become the latest accessory

By 2018, Broomberg predicts that there will be five million disposable sensors in the world. These sensors will, for instance, measure blood pressure, body temperature and blood sugar levels. For people living with diabetes, this may mean an end to traditional blood sugar monitoring that depends on multiple finger pricks and blood samples each day.

One day, baby onesies may come with wearable sensors to monitor infants' vital signs and alert parents to trouble, he explains.

4. Diagnosing from the inside out

Today, if doctors suspect you have a serious problem in your digestive system, you could face having a special camera uncomfortably shoved down your throat. In the future, doctors may ask you to swallow a tiny, pill-sized camera. These types of pills are part of a new breed of swallowable, injectable, implantable or dissolvable medical technology called insideables. Some insideables work as sensors that collect data from inside your body and send it to an app, laptop or the cloud.