Making hospitals more like hotels

Interview with Francis Fan, Director of Technology Management, Integrated Health Information Systems

By Charlene Chin

Holidays are a blast. You get to explore foreign places, meet new people, and stay in hotels – if you don't run on a shoestring.

And perhaps in the future, hospital visits will be like a short hotel stay. Certainly, Francis Fan – tech director for Integrated Health Information Systems (IHiS) – a healthcare-IT firm under the Ministry of Health – believes in this vision.

Public hospitals in Singapore are now set up to feel comfortable and seamless. The landscape is so different from the past, when it was "scary" to go there, he says. Now "you can have a cup of coffee while waiting for your turn", get notified at the queue, and ask for help at information kiosks.

GovInsider caught up with him to understand how his team is working on using tech to make Singapore hospitals more hospitable, efficient and effective.

Robotics and automation

One of Fan's priorities is using robotics to automate processes, thereby shortening waiting times. The tech holds immense potential: it can be used in operations to improve surgery outcomes. Doctors "can actually programme a robot to do a certain cut, which a surgeon may sometimes have phobia to do", he explains.

Hospitals in Singapore have already been using robots in their operations. As early as 2003, Singapore General Hospital first used the da Vinci robot for prostate cancer surgeries. The machine mimics the doctor's own movement and vision, and allows them to operate through a 3D screen. This gave way

to a better precision and vision, and in turn saved on blood loss and shortened recovery time for patients.

The job of packing medicines has now also been taken over by robots. OPAS, the robot, has reduced human error and increased work efficiency across hospitals in the country. "The robot never gets tired and will always do it accurately." Ultimately, what is important is patient safety, so they don't get the wrong medication, he says.

The cheaper, the better

Fan's team is also looking to transform billing processes in healthcare. "Today billing is very complex", there are so many components to it, he says, like treatment and consultancy costs, insurance schemes, patient grants and government subsidies. After factoring in all these, "you really don't know how much you should pay", he adds. "These make billing difficult, clunky and clumsy."

IHiS has since started work to automate the process, and will roll out a system for public hospitals in one or two years time, Fan tells GI. The future of billing, as he envisions it, "will be easy to read and understand". The platform will be a centralised database which pulls all medical schemes for a single patient, and includes them in the final cost.

Data is a gold mine

But that's not all – the team is also exploring how patients can save on treatment costs. When they are given a range of treatments to choose from, what will be the cheapest alternative? To that end, data analytics will play a vital role to help his colleagues come up with a solution, he says.

"We have actually captured a vast amount of data over the years, so it's time to for us to mine it", says Fan. Medical analytics, for one, is a priority. He explains that data can point to which drugs will do better for different patients.

For example, data on how cancer patients react to a certain drug can be collected and analysed. This will give insights to which drugs are more suitable for different health needs, and is important in providing advanced treatments to patients, he says.

The other areas lie in improving operations and preparing for pandemics. Hospitals can learn how to optimise workflow and cut waiting times with data analytics, Fan says. Accordingly, pandemics can be prepared for because one "doesn't happen overnight". Through statistics, authorities can find out which area is prone to disease exposure and ramp up measures.

Analytics is also key to having better hospitals. "It is what we are all gunning for", he says. "If you can understand the dynamics of data, you can understand how people use your medical services."

The future of hospitals

As efficient as a hospital should be, it's sometimes more efficient to have patients stay at home. "We don't want people to come to hospitals" unless necessary, he says. So patients suffering from illnesses like diabetes or high blood pressure will track their vital signs and send them over periodically to the hospital. Doctors will then monitor them remotely, and call them in if needed.

Tan Tock Seng hospital has brought the service one step further with its "virtual hospital" scheme, where doctors, nurses and therapists are sent to patients' homes to monitor their recovery.

Whether it's mining data or building robots, one thing's for sure – Fan's team will continue working closely with hospitals to revamp the healthcare experience. They'll know it when they see results.

It'll be seamless: check in, get treated, and check out – ASAP.