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Headline: How tech can play a role in ecosystem of care

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BEIJING • Technology has an important role to play in elderly care as societies like Singapore and China age rapidly, but it is not an all-in-one solution.

Instead, sensors and devices should fit into a larger ecosystem alongside medical providers and caretakers, industry leaders said at a forum here this week.

Today, Internet of Things (IoT) devices already play a role in age-related medical research, uncovering clues that may help in the early detection of illnesses such as dementia, said Singapore Management University's Associate Professor of Information Systems Tan Hwee Pink.

One study he is working on involving home sensors such as bed pressure mats has shown a strong correlation between poor sleep quality and mild cognitive impairment, a condition that places one at increased risk of developing illnesses such as Alzheimer's.

Social enterprise NTUC Health, which operates eldercare facilities, has also found success using a range of technologies, such as wearable bladder sensors that have helped two-thirds of its clients on the trial do without adult diapers.

Not only does this provide better dignity of care for the client, but the device has reduced one of the most unpleasant tasks for nurses and have made them more efficient, said NTUC Health's chief executive, Ms Chan Su Yee.

"Like every other consumer, the elderly are expecting more from their services, more personalisation and faster response, so in order to keep up with what our customers want, technology has a role to play," she said.

The role devices play in healthcare will also widen as technology matures, experts said.

Prof Tan noted, for instance, that IoT devices needed to offload their data to a local gateway that pushes it on to researchers via the Internet, but some of the elderly users tended to switch off these mains-powered machines.

The IoT devices are battery-operated, but the batteries last for only about six months, he said. "So we have two problems: reliability, and high maintenance costs."

But new technologies, such as low-power, wide-area networks, mean gateways are no longer required, while batteries now last up to three years.

Even then, technology alone cannot solve the problems of aged care, said Dr Liu Jianbing, director of a laboratory for smart healthcare at the Beijing Academy of Science and Technology.

"For instance, a system might be able to detect distress, but you still need personnel nearby who can respond to these emergency needs," he said. "It's about how you can combine technology with local services; a standalone platform is not going to work."

NTUC Health's Ms Chan also noted that devices such as the bladder sensor can provide plenty of false positives, and need to be supplemented with the human touch.

"Ultimately, it is to enable seniors to live fulfilling, active, purposeful and meaningful lives no matter their age," she said. "On the other end of the spectrum, it allows us to deliver services as effectively and efficiently as possible so that we can keep costs affordable."

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