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# NUHS harnesses tech to help manage hospital facilities

Shabana Begum

As you walk through the doors of Ng Teng Fong General Hospital (NTFGH) next month, a robot will scan your SafeEntry check-in and record your temperature.

The security and concierge robot will also detect visitors and patients who are not wearing masks or following social distancing rules, and deny these non-compliant visitors entry.

The robot will be deployed at NTFGH from next month, and it will also be in action at Alexandra Hospital from November.

Around the same time, the National University Hospital will have a roving security robot that can identify suspicious activities such as crowding and people lurking in restricted areas.

The three hospitals are part of the public healthcare cluster under the National University Health System (NUHS).

NUHS said robots, drones and touch-free technologies will become the new normal. The shift to technology-based solutions comes as the hospitals seek to minimise labour-intensive operations and move to a more efficient, safer and productive way to manage its facilities.

This will not only save time but also slice costs by at least 50 per cent in each hospital, NUHS said.

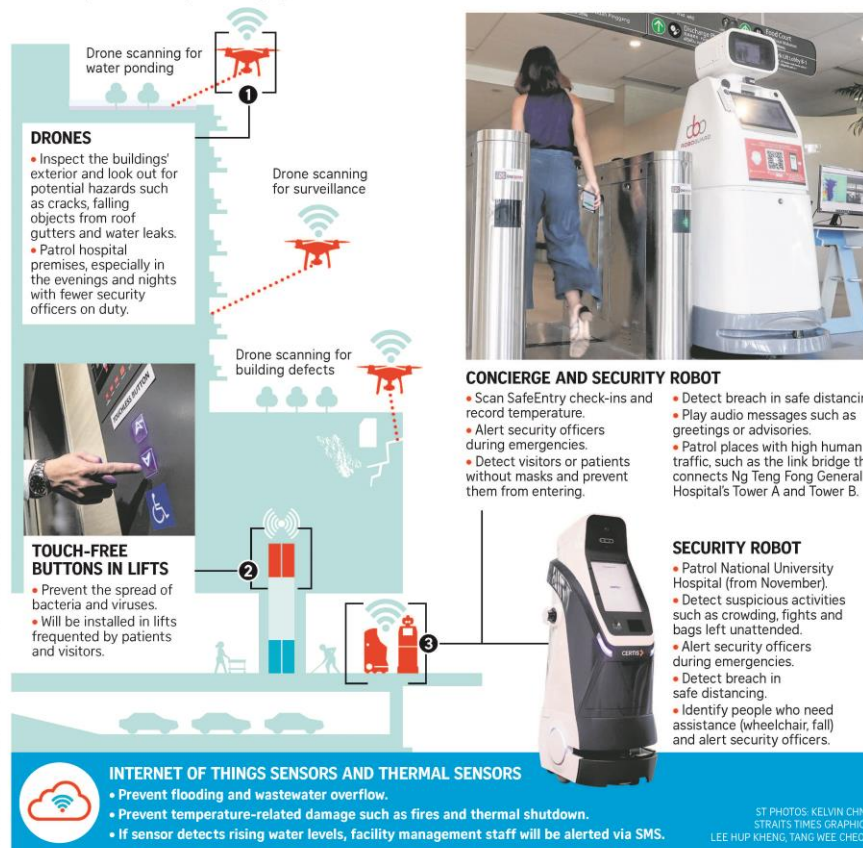
"We are not using technology to replace our colleagues at the NUHS Group Facility Management Team," said Mr Ng Kian Swan, the chief operating officer of NUHS.

"Instead, the technologies will be used to support them in their work and give them the opportunity to reskill and upskill."

Some staff are learning on the job as they work with Internet of Things sensors, for instance, and others have been sent for courses to learn how to fly drones, added Mr Ng.

## From security robots to touch-free lift buttons

With more technology, NUHS hospitals seek to minimise labour-intensive work and move to a more efficient, safer and productive way of managing its facilities.



**DRONES**

- Inspect the buildings' exterior and look out for potential hazards such as cracks, falling objects from roof gutters and water leaks.
- Patrol hospital premises, especially in the evenings and nights with fewer security officers on duty.

**TOUCH-FREE BUTTONS IN LIFTS**

- Prevent the spread of bacteria and viruses.
- Will be installed in lifts frequented by patients and visitors.

**CONCIERGE AND SECURITY ROBOT**

- Scan SafeEntry check-ins and record temperature.
- Alert security officers during emergencies.
- Detect visitors or patients without masks and prevent them from entering.
- Detect breach in safe distancing.
- Play audio messages such as greetings or advisories.
- Patrol places with high human traffic, such as the link bridge that connects Ng Teng Fong General Hospital's Tower A and Tower B.

**SECURITY ROBOT**

- Patrol National University Hospital (from November).
- Detect suspicious activities such as crowding, fights and bags left unattended.
- Alert security officers during emergencies.
- Detect breach in safe distancing.
- Identify people who need assistance (wheelchair, fall) and alert security officers.

**INTERNET OF THINGS SENSORS AND THERMAL SENSORS**

- Prevent flooding and wastewater overflow.
- Prevent temperature-related damage such as fires and thermal shutdown.
- If sensor detects rising water levels, facility management staff will be alerted via SMS.



Equipped with high-resolution cameras, drones are used to scan the hospital buildings' exterior and can capture live footage of hard-to-reach areas such as roof gutters, and detect water ponding on rooftops. ST PHOTO: KELVIN CHNG

With the bots on the front line patrolling and observing, security officers can focus on value-adding duties such as using video analytics to review footage that the robots send in. Drones are already being used to scan the buildings' exterior, to look out for hazards and areas that need maintenance work.

NUHS is the first organisation in the local healthcare scene to use

drones to inspect hospitals. Armed with high-resolution cameras, the drones can capture live footage of hard-to-reach areas such as roof gutters, and detect water ponding on rooftops, a potential breeding ground for Aedes mosquitoes.

Previously, gondolas – manned and moved by workers – were used to inspect building facades. Workers were also exposed to danger when

scaling ladders and by walking on ledges and weak roofs.

To prevent transmission of bacteria and viruses, the three hospitals will install touch-free buttons in lifts that patients and visitors frequently use, by next year. To pilot this, some lifts at NTFGH's Tower B have been installed with touch-free buttons.

nshab@sph.com.sg

ROBOTS NOT REPLACING WORKERS

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MR NG KIAN SWAN, chief operating officer of NUHS.

SCAN TO WATCH  
Robots join the security team at NUHS hospitals.  
<https://str.sg/robo25>



ST PHOTOS: KELVIN CHNG  
STRAITS TIMES GRAPHICS  
LEE HUP KHENG, TANG WEE CHEOW