

SHABANA BEGUM

A robot that carries out nasal swabbing to diagnose Covid-19 has been developed by clinicians who say the automated procedure is safe, faster and more comfortable compared with manual swab tests.

Although other countries have developed similar robots, the clinicians said this bot, called SwabBot, is the first that allows patients to fully control the swab process so they are more comfortable.

A patient sits in front of the robot while holding on to the handhold and latches his nostril onto the disposable nose-piece.

After using his chin to push a button and activate the bot, the nose-piece moves slightly upwards to widen the nostril. The swab will extend and rotate safely and gently through the patient's nose to the back of the nasal cavity.

SwabBot has a built-in feature that withdraws the swab stick if there is resistance when it is moved deeper into the nasal cavity.

If the patient feels uncomfortable at any point, he can stop the process by moving his head away from the robot.

The process takes 20 seconds while a manual swab test can take twice as long. At the end of the procedure, a medical worker

Safer, faster Covid-19 testing with SwabBot

Process by Singapore robot is also more comfortable than manual test, say doctors



(Above, from left) The team behind the bot comprises Dr Rena Dharmawan, Dr Paul Tern, Ms Hee Jia Yun and Dr Luke Tay. (Left) Dr Tay demonstrating having a test done by the SwabBot. TNP PHOTOS: ONG WEE JIN

opens the machine to remove and store the swab stick.

The machine, which is 35cm by 40cm, and 49cm high, was developed by clinicians from the National Cancer Centre Singapore (NCCS) and Singapore General Hospital (SGH), in col-

laboration with medical robotics company Biobot Surgical.

"Our team felt that we had to find a better way to swab patients to reduce the risk of exposure of Covid-19 to our healthcare workers, especially when patients sneeze or cough

during the swabbing process," said principal investigator Rena Dharmawan, associate consultant, head and neck surgery, at NCCS and SGH's division of surgery and surgical oncology.

SwabBot retains the same gen-

tle touch and precision as surgeons who perform very delicate procedures, said Dr Luke Tay, consultant at SGH's department of vascular surgery, who is one of the project's team members.

To date, a total of 85 patients from SGH and Bright Vision Hospital as well as volunteers have participated in the ongoing clinical trial that compares SwabBot against manual swabbing.

EQUALLY OR LESS PAINFUL

All of the participants said the procedure with the robot was either equally or less painful compared with getting a manual swab, said Dr Dharmawan.

Volunteer Marco Lizwan, 25, a second-year medical student at Duke-NUS Medical School, said he was less worried when he was swabbed by the robot.

He said: "I found the robot more comfortable because you can (turn it on) whenever you are ready. So things are within your control. I was worried when I did the manual one because I was wondering if the swabber's hand will be shaky."

SingHealth and Biobot Surgical have filed a patent for SwabBot's technology. Biobot is also working to get the robot CE marked for it to be commercialised globally.

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