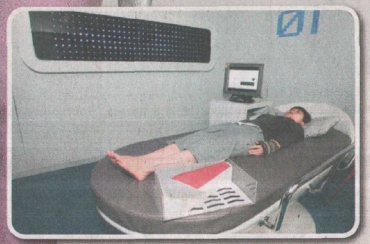
THE FUTURE OF MEDICAL CARE

How technology from the Agency for Science, Technology and Research (A*Star) is shaping Singapore's future

WHAT	WHAT IT DOES	WHO IT'S FOR	WHERE IT'S FROM	WHEN IT WILL HIT MARKET
Microneedles	Prick just the second layer of skin, avoiding the nerve endings in the third. They are 10 to 20 times shorter and half the diameter of conventional needles.	One example is diabetic patients who have to inject themselves with insulin regularly.	Micropoint Technologies, a spin-off by Institute of Materials Research and Engineering	One to two years, now in clinical trials
Smart software that allows multiple users to interact with a large-scale display using just a laser pointer	Your living room wall or the teacher's board can be transformed into a giant screen that can be used to write, draw, navigate menus, move 3-D models or play games	Wide-ranging applications including for teaching and multi-user games	Institute of High Performance Computing	One year
Doctor Toilet	Analyses user's urine for signs of illness, from proteins and glucose excreted at home	Those with, or at risk of, illnesses such as diabetes	Institute for Infocomm Research, Institute of Materials Research and Engineering, Institute of Molecular and Cell Biology, Nanyang Technological University	Prototype expected by next year
Superpill	Takes tissue for biopsy or tagging of specific areas for surgeons to go in later to operate on.	For real-time and painless diagnosis of patients with digestive disorders	Institute for Infocomm Research, Institute of Microelectronics, Data Storage Institute and Nanyang Technological University	Prototype expected in three years
Magic Clothes (left)	Wearable sensors which can monitor a person's vital signs and inertial signals to pre-empt fainting spells. They are able to predict a fall 0.6sec before a person hits the ground so that action can be taken	Those prone to fainting spells or epileptic fits	National University of Singapore (project funded by A*Star)	By 2010
Brain-computer interface	Reads patients' thoughts and translates them into actions, such as grabbing a cup.	Wide-ranging applications such as for paralysed patients, stroke rehabilitation and treatment for kids with attention deficit hyperactivity disorder, and gaming	Institute for Infocomm Research	In clinical trials
Smart Bed	Detects movements and alerts caregiver, without needing to hook up to any probes or wires	Elderly patients who could fall out of bed, long-term patients with bedsores, those with respiratory problems	Institute for Infocomm Research	In trials at Alexandra Hospital



The bed has fibre optic pressure sensors, which can detect movement, sending signals when something is amiss

When the patient leaves the bed, the lights go off and the nurses are alerted

When someone has been lying on the bed in one position for too long, these lights show up on the display

When someone is breathing normally, the number of breaths show up on the computer

When the person has stopped breathing, the computer eventually registers zero breaths, and sounds the alarm

Source: A*Star

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