



Reinventing the wheel to save manpower

New design for hospital bed helps boost productivity

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TO help boost productivity in hospitals, the National University of Singapore (NUS) and local engineering firm HOPE Technik have created a motorised, omni-directional hospital bed, using a wheel design that could be applied to other sectors as well.

Typically, it takes at least two staff to manoeuvre a hospital bed around narrow corridors, tight elevators and crowded rooms. With hospitals facing a manpower shortage, this often results in delays before a patient is moved, which at times can prove dangerous.

On the other hand, Sesto, as the motorised bed is called, only requires one person to handle it. The mobility wheel, which can move the bed in all directions, can be clipped onto existing hospital beds thus avoiding investment in new beds. The bed is controlled through a panel located at its back. As a safety feature, movement stops when there is no contact with the panel.

Sesto leverages on an invention by Yu Haoyong from NUS's Department of Biomedical Engineering. Melvin Loh and Rachel Hong, both directors of the Medical Engineering Research & Commercialisation Initiative (Merci) at the NUS Yong Loo Lin School of Medicine, are spearheading the test-bedding of the

prototype together with the National University Hospital (NUH). Merci plans to work on other projects that can raise productivity in hospitals.

Engineers from HOPE Technik are collaborating with Dr Yu to translate the wheel design from a prototype into a commercially viable product.

A pilot test at NUH started in September and has received positive feedback from hospital staff. HOPE Technik, which is using the

feedback to improve Sesto, said it will be commercialised by early next year.

"For example, we integrated a flip down platform for staff to stand on, eliminating the need for them to walk with the bed," said engineer Manolo Sta Cruz.

Irene Cheong, director of the NUS industry liaison office, added: "In addition to being applied in the Sesto, we believe that this omni-directional mobility wheel design can benefit additional sectors."

NUS hopes to partner with industry players to help improve the manoeuvrability of wheeled equipment, for example factory machines or small electrical vehicles."

Other possible areas of application include personal mobility aids for the aged in eldercare facilities.



Going any which way: *The omni-directional bed, a creation of NUS and .HOPE Technik, is an invention by NUS' Dr Yu (second from right).*