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New technology to help enhance patient safety

O'Connor's Singapore, a subsidiary of Singapore-listed Wearnes (WBL Corporation), has been awarded its first government grant to develop a new technology solution targeted at the healthcare sector. The proposed solution tracks all the surgical apparatus and consumables used in a surgery, eradicating the current practice of manual counting.

Today, nursing staff in an operating theatre manually counts every surgical apparatus before and after an operation to make sure each item has been accounted for. The same is done for consumables such as pads, bandages, gauzes and so on. This is to prevent any of these from being left in a patient in what is known in the medical field as "unintended retention of foreign bodies".

The new technology solution by O'Connor's is one of seven proposals selected under the joint Healthcare Call-for-Collaboration by the Infocomm Development Authority, Ministry of Health and The Enterprise Challenge.

O'Connor's is a fully-owned unit of Wearnes that specializes in systems integration. A dynamic international group with more than 100 years' history in Singapore, Wearnes is active in automotive distribution, technology, property development, engineering and distribution businesses.

This latest technology solution being developed by O'Connor's has the potential to improve patient safety and increase hospitals' efficiencies. It automatically tracks all the items taken into an operating theatre and highlights any missing items real-time. This allows for the tedious counting practice to be eradicated, where patients remain under anesthesia while the items are being accounted for.

Using radio-frequency identification (RFID) technology, the proposed solution embeds a unique identification tag on each apparatus and consumable so that when placed on an instrument tray enabled with a "reader", every item is recorded in a computer system. After the surgery, all the surgical tools just need to be placed back onto the tray and any missing items will be immediately highlighted. Similarly, a waste basket enabled with RFID technology can track all the consumables, including soiled gauzes.

Ms Tan Soh Chin, Deputy Director of Nursing, KK Women's and Children's Hospital, said: "In an operating theatre, the counting of instruments, sponges and blades is a routine and yet very crucial process. The correct count of items used for the surgery is a shared responsibility between the nurses and the surgeons. This proposed technology solution will not only enhance patient safety, it will also improve the efficiency of the hospital's operating theatre resources such as time and manpower. More surgeries could be scheduled with the time saved, hence freeing up the staff to focus more on patient care."

Mr Leong Say Haur, managing director of O'Connor's, said: "We are pleased to leverage on technology to come up with an innovative solution to meet a common challenge in hospitals' operating theatres. This is a comprehensive and practical solution that will address an unmet need."

The proposed solution is robust enough to withstand hospitals' sterilization processes, work on metals and also with fluids such as blood. It will also track a surgical apparatus throughout its life cycle, from the time it is packed, sterilized, used in surgery, cleaned and disposed to the number of times it has been used. This will aid hospitals in deciding when it should replace older apparatus, such as considering how often it has been used.

Other value-added features can be incorporated, such as integrating it with the billing system to facilitate the charges for expensive consumables such as stents.

The benefits of this proposed technology solution are clear to those in the medical field. Besides Ms Tan, Dr Sophia Ang, Associate Chairman of National University Hospital's medical board and also the Lead Patient Safety Officer of National Healthcare Group, is also keen to start tests on this new technology solution soon.

She said: "In a typical surgery for Caesarian cases, the number of surgical tools needed is about 40. In heart surgeries, this could go up to more than 100. This excludes the consumables, which also have to be tracked. A great deal of time is spent counting equipment and consumables and there can be a potential risk of human error despite staff's best efforts.

"So a technology that allows us to focus on our priorities - patient's safety and well-being is definitely welcomed. Such a solution can result in savings in time, greater efficiency and reduced potential error in the process of counting the equipment and consumables."

It is obvious that the unintended retention of foreign bodies can pose a danger to patients. In an article published in the Canadian Operating Room Nursing Journal in Dec 2004¹, it cited statistics from previous reports that surgery tools are left in 1,500 patients a year in the US. The author Joan Porteous highlighted that several articles state that this number is likely to be underestimated.

About O'Connor's

O'Connor's is a fully-owned subsidiary of Wearnes (WBL Corporation). O'Connor's provides systems integration services in broadcast and multimedia, communications and information, security and surveillance and scientific and medical solutions. Visit www.oconnors.wearnes.com for more information.

About Wearnes

Wearnes Corporation (WBL Corporation) is a dynamic international group whose key activities range from technology to automotive distribution and property development.

The Group is one of the world's leading producers of flexible printed circuits, which are found in widely used consumer products such as mobile phones. Its 54.8%-owned, NASDAQ-listed unit, MFLEX, is one of the few global firms able to provide seamless, integrated, end-to-end solutions for quick-turn prototypes through high-volume production.

In automotive distribution, Wearnes has successfully expanded its dealership over the past century to include eight world-renowned brands: Volvo, Jaguar, Renault, Bentley, Mazda, Volkswagen, Chevrolet and Bugatti.

The Group continually reviews and upgrades its investment portfolio as it seeks the best avenues to optimise returns for shareholders. It is pressing ahead with plans to redevelop a strategically located 364,000 sq m site in Chengdu, China into a high-end residential project. Wearnes is also joining hands with GIC Real Estate to spearhead a prime commercial-residential development on the 33,473 sq m, former Summer Palace site in Shenyang, China. For more information, visit Wearnes website at www.wearnes.com.

¹ See full text of journal article at http://findarticles.com/p/articles/mi_qa4130/is_200412/ai_n9466871