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For Immediate Release

NEWS RELEASE

Award Winning SGH Pharmacy System Uses Latest Manufacturing and RFID Technologies To Shorten Waiting Times, Increase Staff Productivity

Singapore Mar 13, 2014 – Singapore General Hospital’s Outpatient Pharmacy system, the world’s first such automated solution in a hospital, today won the CIO Asia award at Marina Bay Sands.

Implemented by SGH and IHIS, the Health Ministry’s IT arm, to improve patient waiting times and staff productivity, the system applies advanced manufacturing supply chain, RFID and LED technologies to the traditional clinical setting.

It was created with a consortium of five local companies with expertise from multiple fields.

They included Getech who developed the automated drug dispensing system, NCS who created the Pharmacy workflow dispensing and light guided drug pick system, PSB Technologies who built the intelligent conveyor system, Innotech Resources who integrated RFID technology with the conveyor, and EurekaPlus who programmed the controlling software.

The project was funded by SGH, Ministry of Health and SPRING Singapore.

Today, the intelligent system at SGH Outpatient Pharmacy has almost halved the time to fill prescriptions, so that over 80 per cent of patients can get their medicines within 30 minutes.

It has also reduced the manpower to pick and pack drugs by 11 persons. The staff are instead re-deployed to run more front dispensing counters to serve 50 per cent more patients.

More importantly, the system has improved patient safety by enabling pharmacists to review all prescriptions and by reducing drug packing errors.

IHiS Chief Executive Officer, Dr Chong Yoke Sin, said: “The Pharmacy system is in line with Singapore’s commitment to drive innovation to manage rising costs and improve productivity in our Regional Health Systems.

“We borrow solutions from other industries such as manufacturing and logistics in developing systems for public healthcare.

“This is part of our roadmap to equip all public healthcare institutions with innovative systems to improve patient waiting times and care quality, and multiply productivity and capacity.

“IHIS is now working with other public hospitals to implement similar highly automated Outpatient Pharmacy systems.”

SGH Pharmacy Director, Mr Lim Mun Moon, said: “The intelligent system transforms high volume prescription filling. We have achieved efficiency gains and higher standards of practice by re-distributing critical resources and including patient-centred safety features into our work processes.

“The solution addresses the challenges of busy hospital Outpatient Pharmacies worldwide who are seeking to enhance patient safety, shorten prescription filling times, increase capacity and reduce reliance on trained staff.

“For our technology partners who helped develop the system, the innovative solution should open up access to new healthcare markets.”

The Automated RFID Prescription Drug Delivery System (APDS) consists of a pharmacy dispensing workflow system and software that optimise processes, a drug dispensing system that controls machines that pick, pack and label drugs, a LED light guiding system for manual drug picking, and a RFID-enabled conveyor which transports, auto-assembles and channels packed items to the front dispensing counters.

Today, prescriptions received are tagged, reviewed by pharmacists, and then dropped into a RFID-tagged basket on a conveyor to trigger the packing process. Drug dispensing robots automatically pick and drop medicines into labelled plastic bags.

Concurrently, for medicines that require manual picking, Pharmacy staff scan the drugs' barcodes. LED lights above the right container then blink to guide staff to pick the correct drug.

Packed medicines are placed into RFID-tagged baskets on a 110-metre conveyor. RFID readers along the conveyor provide real time tracking of the drugs.

Once all baskets with medicines for the same prescription are detected on the conveyor, they are auto-assembled and channelled to the next available dispensing counter, based on the queue order.

The intelligent system evenly distributes tasks to the robots and manual processing stations, while control software consolidate multiple RFID-tagged baskets for the same prescription and optimise their delivery to the available front dispensing counters.

SGH Automated RFID Prescription Drug Delivery System (APDS)



1. Prescriptions are barcoded & dropped into RFID-tagged baskets, triggering the packing process.



2. The baskets travel on a conveyor where RFID readers provide real-time tracking of the drugs.



3. Medicines are packed in cartridges which are slotted into the picking robots.



4. The robot picks the right drug and drops it into a basket.



5. For drugs that need manual picking – when the drug's barcode is scanned, the LED on the drug bin lights up, guiding staff to the right drug.



6. When all baskets with medicines for the same prescription are on the conveyor, they are automatically moved to the next available dispensing counter. A pharmacist then reviews and dispenses the drugs to a patient.

Download the SGH high res images: <https://www.dropbox.com/sh/rppwckika759i07/ZNdIMzWtn>

Chinese Names

Integrated Health Information Systems (IHIS)	综合保健信息系统公司
IHIS Chief Executive Officer, Dr Chong Yoke Sin	综合保健信息系统公司总裁，钟玉璇博士
SGH Pharmacy Director, Mr Lim Mun Moon	新加坡中央医院药剂部处长，林文满

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The news release is jointly issued by Singapore General Hospital (SGH) and Integrated Health Information Systems (IHIS).

For more information, please contact:

IHIS

Ida Lim ida.lim@ihis.com.sg
DID: 6594 1697 Mobile: 9106 3782

SGH

Carol Ang carol.ang@sgh.com.sg
DID: 6321 4999 Mobile: 9845 5354

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About Singapore General Hospital (SGH)

Singapore General Hospital, a member of Singapore Health Services, is the public sector's flagship hospital. Established in 1821, SGH is Singapore's largest acute tertiary hospital with 1,700 beds and national referral centre offering a comprehensive range of 36 clinical specialties on its campus. Every year, about one million Singaporeans benefit from advanced medical care delivered by its 800 specialists. As an academic healthcare institution and the bedrock of medical education, SGH plays a key role in nurturing doctors, nurses and allied health professionals, and is committed to innovative translational and clinical research in her continual strive to provide the best care and outcomes to her patients. www.sgh.com.sg

About Integrated Health Information Systems (IHIS)

IHIS is a healthcare-IT leader, transforming patient care through excellence in technology. Managing highly integrated systems across Singapore's public healthcare sector, its IT professionals support more than 30,000 healthcare staff at all public hospitals, national specialty centres and polyclinics.

IHIS architects and oversees the performance of the clinical, business and healthcare analytics systems of the healthcare institutions. It played a key role in five Singapore hospitals becoming among the first public institutions in the Asia Pacific region to achieve HIMSS EMRAM Stage 6, an international benchmark for advanced technology used in patient care. IHIS is at the forefront of innovation, driving new standards in quality care.

www.ihis.com.sg